

Identifying Barriers to Entrepreneurship in Agriculture Higher Education System from the Viewpoints of Graduate Students of Agriculture College of University of Tabriz

Saeed Jafarzadeh, Ahmad Kiani, Shapur Zarifian, Hussein Yadawar, Hussein Raheli, Hussein Kuhestani

Abstract— The increasing unemployment rate in the country especially among graduates of agriculture indicates that educations provided in higher education in agriculture do not meet the current social needs. Thus, entrepreneurship education has become one of the most important and most extensive academic activities. The current survey aims to identify barriers to entrepreneurship in agriculture higher education among the graduates for mentioned which includes all graduate students of Agriculture College of University of Tabriz; 100 of them were selected through proportionate stratified sampling. Measure used in the survey was questionnaires, and the software SPSS was used to analyze data. Factor analysis was used to identify barriers to entrepreneurship in agriculture higher education system, and barriers were categorized as 6 main factors. These factors generally defined 72.2% of the total variance, and the factors of supportive barriers to and difficulties in higher education composed 27.3% of the total variance. The latter includes barriers such as shortage of educational tools, shortage of facilities, equipment and lands suitable for farming, lack of appropriate educational spaces at Agriculture Colleges, lack of modernized educational tools for teaching, and also lack of accessibility of computers and the internet. Other factors contributing to the total variance include educational policies, skills, supportive, infrastructure and cultural barriers.

I. INTRODUCTION

The term entrepreneurship has roots in French and is used in other languages. The English use three different expressions about entrepreneurship: adventurous, committed, and employer. Entrepreneurship has been defined variously, and it seems that there is no consensus about the definition. But some definitions can be mentioned to clarify the subject better. Rahimi (2001) believed that entrepreneurship is a process to introduce new and novel ideas, use of existing facilities and opportunities relying on knowledge, respective profession and job, and acceptability of danger. Hashemi

(2001) believed that entrepreneurship bridges the development of ideas, production, providing services, and information and goods exchange. The latter also believes that entrepreneurship is a factor which holds other factors together so that use and activation of resources guarantee and facilitate achieving national interests; and creative and effective institutions are established causing all-round development and progress (Hashemi, 2001). Entrepreneurship has been defined variously, and the majority of economists and theorists argue that entrepreneurs are the driving force of development in a competitive society where there are no stable conditions (Ahmadpur, 2008). Remarkable and positive effects of entrepreneurship cause government in both developed and developing countries to pay more attention and contribute specifically to the development of the subject. In any country, the development of entrepreneurship requires the availability of appropriate hardware and software, and also the design and creation of proper structures. Universities and other facilities providing higher education are key factors in the development of entrepreneurship in any society. The centers act as the brain playing a very important role in identifying and educating entrepreneurial talents.

In new theories, human assets comprise the main axle of development and bring about stable progress in societies. In fact, specialized and skilled human resources are considered as a society's greatest and main asset. Based on the theory of human asset, education in all levels, especially academic education must be considered as a national asset and as most valuable one which exists in the nature and essence of humans in the form of knowledge, specialty and skill (Najafi and Faraji, 2010). The need of society for frequent education, skill, and also for education of a workforce with high creativity and intellectual capacity being able to update its information, to learn more skills, and to create jobs in the changing world of businesses, becomes more obvious. Factors such as diverse roles in higher education, high quality education, the existence of elites and geniuses in society, diverse needs, workforce skills, increasing demand, limited resources, increased competition, equality, economic cooperation and competition, changing world and globalization require urgent response of universities. Thus, the effective functionality of higher education system can play a definite role in enhancing the quality of education provided in universities (Najafi and Faraji, 2010).

Understanding the ability of agriculture sector and the economic and social role the sector plays in society, increases the significance of the problems and weaknesses of

Manuscript received May 10, 2016

Saeed Jafarzadeh, M.S. graduate in rural development

Ahmad Kiani, M.S. graduate in rural development

Shapur Zarifian, faculty member, University of Tabriz

Hussein Yadawar, faculty member, University of Tabriz

Hussein Raheli, faculty member, University of Tabriz

Hussein Kuhestani, faculty member, University of Tabriz

Identifying Barriers to Entrepreneurship in Agriculture Higher Education System from the Viewpoints of Graduate Students of Agriculture College of University of Tabriz

entrepreneurship in this sector. As we know, agriculture is the oldest form of economic productive activity in a society. Essentially, major civilizations appeared based on agriculture and farming. Through means of modern agriculture, and the exploitation of new technologies, in addition to food sovereignty, we can reach sustainable employment and income for large groups of people in order to alleviate poverty, and prevent migration and its consequences. The role of agriculture and other related majors graduates to improve productivity and to achieve developmental goals, is obvious. Agriculture engineers and majors related to the knowledge and science of entrepreneurship and new and effective technologies to produce agricultural products, and to maintain and preserve natural resources can be considered as very important factors in overcoming existing challenges and inducing greater advances. In many countries, major agricultural products are still produced in rural areas. Based on a statistical survey, in our country, 75% of farming output are from small villages (below 50 families) (Firuznia and Eftekhari, 2003). It has always been emphasized on the development of agriculture sector which is mainly due to the relationship between the sector and other economic ones, and also due to its functions such as supply and guarantee of food for increasing population of countries, surplus economic provisions for development of other sectors, supply of foreign currency for investment, supply of raw materials required for industry and development, increase of villagers' shopping capacity through providing surplus farming output and job opportunities, and consequently, relative improvement of their economic and social welfare.

In terms of the importance of entrepreneurs in the process of progress and development of our country in recent decades, universities in both developed and developing countries provide special and various educational and research programs depending on their capacities and needs to train entrepreneurs. In other words, as rules and regulations, economic conditions, and job market's needs change, higher education systems attempt to change their programs, and to coordinate with economic development and job market, since entrepreneurship programs of universities intend to train and educate students so that they can be creative and able people after graduation. Thus, nowadays, entrepreneurship has become one the most important and most extensive university activities (Ahmadpur, 2008). According to the importance of entrepreneurship in higher education especially in agriculture higher education, it is very necessary to recognize the status, significance and position of agriculture sector to induce the country's extended development.

Mirza Mohammadi et al. (2007) suggested that barriers to and difficulties of higher education to execute entrepreneurship programs in Iran include theoretical lessons, lack of proper cultural definition of entrepreneurship at various social levels, lack of specialty of graduates in accordance with market's needs, lack of relationship between universities and producing and industrialized centers. Some surveys consider individual characteristics as the most important barriers to entrepreneurship; Hussein and Azizi (2007) in a survey termed "an investigation into factors affecting the development of morale and entrepreneurial skills among senior students of Agriculture College of Tehran University" found that a positive and meaningful relationship exist among mother's degree of education, monthly income of family, and

use of developing methods of entrepreneurship in universities. Also, father's and mother's jobs influence students' entrepreneurial skills and their entrepreneurial morale, respectively. Also, Nowruzi and Bagheban (2007) suggested that barriers to entrepreneurship in terms of education and preparation in universities include a set of internal and external barriers, risk aversion and improper perspective towards money and wealth are considered as the internal barriers to entrepreneurship; and lack of attention to education while working and of habilitation of people, weakness of higher education, cultural and social barriers, lack of contribution to economic activities, lack of ability to accept responsibility, lack of motivational factors in the beginning stages entrepreneurship programs are considered as the external barriers to entrepreneurship. Amiri and Moradi (2008) considered management system, content of lessons, financial and official system, and functionality of university employees as the most important barriers to entrepreneurship in higher education. Hussein et al. (2009) in a survey termed "identifying and analysis of barriers to entrepreneurship in agriculture higher education from the viewpoints of M.S. students of Tehran province" believed that supportive, education, programming, policy making and professional factors are the most important barriers to entrepreneurship. Also, Sharifi et al. (2009) considered structural, infrastructural, educational, and motivational factors as the most important barriers based on their analytic research on barriers to entrepreneurship in agriculture. Another survey, suggested that barriers to entrepreneurship in higher education include lack of required efficacy of agriculture higher education system, lack of a specific and clear entrepreneurship model for graduates, late returns of investing in agriculture, lack of coordination required between the executive organizations and the unit responsible for entrepreneurship (Badri et al, 2006).

The most important factors barriers to entrepreneurship in higher education system indicate two general groups of barriers; the first group is composed of external barriers with a high rate of influence on entrepreneurship in higher education system which include economic, social, official weaknesses, difficulties in school programming like content of lessons, facilities and so forth, difficulties in relationships among different sectors especially relationship among university, industry and market, political and cultural factors. And the second group comprises internal barriers to entrepreneurship which include risk aversion, improper perspective towards money and wealth, responsibility of people and their individual characteristics factors. Past surveys indicate that the external factors have a higher influence compared with the internal ones. Taking into account the improper status of entrepreneurship, and difficulties and barriers in centers for agriculture higher education, it seems that Agriculture College of Tabriz University is no exception and lacks proper means of entrepreneurship in agriculture for which main goals include:

- Identifying individual, career and educational characteristics of graduates of Agriculture College of Tabriz University
- Identifying and prioritizing barriers to employment in agriculture sector

- Factor analysis of barriers to entrepreneurship in agriculture higher education

of Agriculture College responding to the questions were in proportion to the number of students majoring in Agriculture at the College.

II. METHODOLOGY

The current study is a functional one in term of goal, and an evaluative-analytic one in term of data gathering. It was conducted in school year of 2012-2013 in the University of Tabriz. The population of this study includes all graduate students of Agriculture College of Tabriz University, and the measurement tool used is questionnaire, which is comprised of 103 items related to the independent variables including age, sex, marital status, education of parents, B.S. education, employment status, and also major barriers to the employment of agricultural experts in the agriculture sector, which includes 8 items and 10 other items that have expressed concepts of entrepreneurship. The difficulties of and barriers to higher education, with 26 related items have been measured. After completing questionnaires by students, the data were analyzed using SPSS software. 96 people took part in this study that the sample size was increased to 100 people to enhance the accuracy. Proportionate stratified sampling method was used to select the students, and different majors

III. FINDINGS

Results showed that the average age of the students was 25, the minimum 23 and the maximum 31 with a measure deviation of 1.41. 43.4% of the students were men, and 55.6% of them were women. 81.4% were single, and 18.6% were married. Father's job factor included 26.9% office employees, 40.7% self-employed, 32.4% retirees, and the rate of employed mothers was 79.8%. 78.8% of the students resided in city, and 42.5% of the students were adopted in agriculture since their academic scores were low in the entrance examination (B.S.). According to Friedman test, the most important concept of entrepreneurship in terms of students' points of view was that "entrepreneurship means the ingenuity, creativity and innovation at works" with an average rating of 7/60, and the definition of "entrepreneur, does not tolerate vague and unanticipated phenomena", had a low average rating of 3/68. The results are shown in table 1

Table 1- Friedman test about the definition of entrepreneurship

The concepts of entrepreneurship	
entrepreneurship means the ingenuity, creativity and innovation at works	7/60
Entrepreneurship means identifying opportunities and resources, and using them properly	7/36
Entrepreneurship completely matches job creation in definition	7/67
Entrepreneurship comprises a set of principles to be educated.	6/18
Entrepreneur is an independent and motivated person	6/16
Anyone who can create a job is called entrepreneur	6/05
Entrepreneur always intends and attempts to do simple things.	4/15
Entrepreneur always prefers to do less dangerous activities	3/82
Entrepreneurship is a natural-born trait	3/62
Entrepreneur, does not tolerate vague and unanticipated phenomena	3/39

Chidu test results show that there is a significant difference in the students' perceptions of entrepreneurship.

The number of students taking part in the study	113
Chidu	325/590
Degree of freedom	9
Significance level	0/0000

The results in table 2 show that the difficulty of using the facilities, is one of the most important barriers to and economic problems of entrepreneurship from the viewpoints of graduates of Tabriz University in agriculture, and an existing short period to pay off the loans for agricultural projects, had a lower priority.

Table 2- prioritizing barriers to and economic problems of entrepreneurship

barriers to and economic problems of entrepreneurship	average	Measure deviation	Coefficients of changes	priority
Use of facilities is difficult	3.98	0.92	0.23	1
High tax rate on agricultural production sector	3.44	0.84	0.24	2
Insufficient loans provided for	3.82	0.96	0.25	3

Identifying Barriers to Entrepreneurship in Agriculture Higher Education System from the Viewpoints of Graduate Students of Agriculture College of University of Tabriz

entrepreneurship activities in agriculture				
Interest rates of loans provided for agricultural projects are high	3.42	0.96	0.28	4
A short improper period of time to pay off loans provided for agricultural projects	4.07	2.94	0.72	5

Findings showed that 38.9% of the students had a shortage of educational tools, 47.8% of them had a shortage of equipment, facilities and farming lands for practical purposes, 34.5% had problems relating to improper educational spaces, 38.5% lacked modernized educational tools for teaching, 28.3% lacked accessibility to proper internet and computer which all were considered as barriers to and difficulties of higher education.

Factor analysis

According to the data in table (3), Kynzmayer test shows the suitability of the data for the reduction to a series of basic factors. KMO test statistical range is between zero and one. KMO calculated statistical value was 0.72, and significance value was 0.10. For further certainty, another test termed Bartlett's chi-square was used. Also this test shows that correlation matrix is significance for factor analysis. The result was $BT = 568/574$, and the significance level was desirable (sing =000/0). So there must be good correlation between the variables.

Table 3- Results of Bartlett and Kynzmayr tests for factor analysis

KMO	0/720
Bartlett coefficient	574/568
Degree of freedom	55
Significance	0/000

Results related to the eigenvalues of each factor, the percentage of defined variance of the total variance, and cumulative percentage are shown in table (4). The maximum value related to the first value is 7.2. Totally, six factors define 72.2% of the variances.

Table 4- Results of the P values, explained variance after rotation

Cumulative percentage of variance	Relative percentage of variance	P values	factor
27/3	27/3	7/2	1
44/5	17/2	5/1	2
55/6	11/1	3/7	3
63/9	8/3	4/2	4
69/3	5/4	2/6	5
72/2	2/9	1/9	6

In Table (5), the results of each specific factor and its items have been reported.

Table 5- Each contributing factor and its items

Variables	Factors					
	F1	F2	F3	F4	F5	F6
Shortage of educational tools	0/710					
Shortage of facilities, equipment, and farming lands for practical purposes	0/729					
Improper existing educational spaces at the college	0/721					
Unavailability of modernized educational tools	0/489					
Lack of desirable accessibility and proper use of computer and the internet	0/366					
Appropriate criteria for selecting students are not adopted.		0/415				

Quantitative development of Agriculture Colleges without paying attention to quality of science		0/631				
Students with low scores at entrance tests are adopted.		0/477				
Unclearified primary goals for selecting agriculture students		0/802				
Low level of job knowledge and skills of graduates in agriculture			0/490			
Low creativity of graduates because of traditional and inappropriate teaching methods at Agriculture Colleges			0/969			
Limited job opportunities in agriculture sector				0/490		
Lack of interest in jobs among agriculture graduates				0/378		
Lack of state support for agriculture graduates				0/529		
Interest rates on loans for agricultural projects is high				0/413		
Taxes on production in agriculture sector is high				0/349		
Paying much more attention to employees rather than an entrepreneurial culture					0/350	
Lack of social understanding of new technologies					0/895	
Preferring foreign goods over domestic production						0/932

The variables of including lack of educational and training tools, lack of facilities, equipment and farming land for practical purposes, inadequate educational facilities at Agriculture Colleges, Unavailability of modernized educational tools, Lack of desirable accessibility and proper use of computer and the internet were applied in the first factor (F1) which has the highest share in the total variance (27.3 percent). According to the nature of variables, the title “supportive barriers to and difficulties of higher education” is chosen for this factor.

The variables of lack of adopting appropriate criteria for selecting students, quantitative development of Agriculture Colleges without paying attention to quality of science, adoption of students with low scores at entrance tests in agriculture, unclearified primary goals for selecting agriculture students are applied in the second factor (F2) which totally defined 17.2% of the variance. Considering the nature of the variables and coefficients factor, the expression "barriers to educational policy" was selected for this factor. The variables of low level job knowledge and skills of graduates in agriculture and low creativity among graduates because of existing traditional and inappropriate teaching methods at Agriculture Colleges are applied in the third factor (F3) which totally defined 11.1% of the variance. Considering the nature of the variables and coefficients factor, the expression “skill barriers” was selected for this factor.

The variables of limited job opportunities in agriculture sector, lack of interest in jobs among graduates in agriculture, lack of state support for graduates in agriculture, Interest rates on loans for agricultural projects is high, and the amount of taxes on production in agriculture sector is high, are applied in the fourth factor (F4) which defined a total 8.3% of the variance. . Considering the nature of the variables and

coefficients factor, the expression "supportive barriers" was selected for this factor.

The variables of paying much more attention to employees rather than an entrepreneurial culture, Lack of social understanding of new technologies were applied in the fifth factor (F5) which defined a total 5.4% of the variance. Considering the nature of the variables and coefficients factor, the expression “fundamental barriers” was selected for this factor.

The variable of preferring foreign goods over domestic production was applied in the sixth factor (F6) which defined a total 5.4% of the variance. Considering the nature of the variables and coefficients factor, the expression “cultural barriers” was selected for this factor.

Discussion and conclusion

Although the country’s higher education system attempts to prepare graduates to apply for and get jobs, the number of unemployed graduates in agriculture is high. Thus, attention must be paid to entrepreneurship in agriculture higher education system, and identifying existing barriers can facilitate the process of adopting strategies for entrepreneurship by authorities. The results of factor analysis showed that barriers to entrepreneurship in agriculture higher education system can include supportive difficulties of higher education, educational policies, skill barriers, supportive barriers, fundamental barriers, and cultural barriers. Considering the percentage of definition and significance of each factor, is can be stated that in order to overcome the existing barriers to higher education to adopt an approach to entrepreneurship, conducting studies on related variables to factors of supportive difficulties of higher education and barriers to educational policies are much more essential and useful compared to other factors. The results corresponded to

Identifying Barriers to Entrepreneurship in Agriculture Higher Education System from the Viewpoints of Graduate Students of Agriculture College of University of Tabriz

studies conducted by Mirza Mohammadi (2007), Amiri and Moradi (2008), Hussein (2009) and Sharifi. Based on the results of the process of prioritizing barriers to entrepreneurship, it can be suggested that state support is one of the most important factors in employment of graduates in agriculture. Considering the ideas of students, appropriate job opportunities should be created so that students can easily get employed after graduation. Although this contradicts entrepreneurship, state support for and attention to agriculture sector is irrefutable. Moreover, taking more actions to build proper grounds for and developing entrepreneurship in universities seems essential.

REFERENCE

- [1] Ahmadpur Dariani M. 2008. Entrepreneurship and its influence on national economy, entrepreneurship development plan for universities. National Education Assessment Organization, p 61.
- [2] Amiri, Moradi, 2008. Students' entrepreneurial perspectives and its barriers, research and planning in higher education, no. 14, pp 45-67
- [3] Badri E., Liaghatdar M.J., Abedi M.R., Jafari E. 2006. A survey of entrepreneurship capabilities of Isfahan university students, Journal of research and planning in higher education, number 12, pp 73-90.
- [4] Hashemi H, 2001. Eternal assets (Journal of conference on entrepreneurship and advanced technologies) Tehran: Iranian institute for research and knowledge development.
- [5] Hussein M, Hussein J, Soleimanpur M, 2009. Identifying and analysis of barriers to entrepreneurship in agriculture higher education from the viewpoints of M.S. students in Tehran province, Journal of Economic Research and Agriculture Development, no 3, pp 359-368.
- [6] Hussein M. Azizi B. 2007. An investigation into factors affecting morale and entrepreneurial skills among senior students at Agriculture College of Tehran University, science of agriculture in Iran, no. 38, pp 241-251.
- [7] Mirza Mohammadi M, Purtahmasb S, Tajur A, 2007. Barriers to and strategies for entrepreneurship in Iranian higher education system, Journal of Careers and Society, no. 96-97.
- [8] Najafi H, Faraji Armaki A, 2010. The influence of higher education on economic, social and cultural development in Iran, Qum: Qum University.
- [9] Nowruzzi M, Bagheban A, 2007. Limitations of and barriers to entrepreneurship for universities, and proposed practical and strategic actions to overcome existing barriers in higher education and universities in order to improve students' ability of entrepreneurship. National conference on higher education and entrepreneurship, March, Semnan: Semnan University.
- [10] Rahimi H. 2001. The necessity of entrepreneurship education at universities (abstract of articles provided for the 44th meeting of universities' and scientific – research centers' head managers), Tehran: The institute for higher education research and planning.
- [11] Sharifi A, Alizadeh H, ESmaeeli Pur A, Soleimani A, 2009. Factor analysis of existing barriers to entrepreneurship among agriculture students from the viewpoints of senior students of agriculture. National conference on higher education and entrepreneurship, March. Semnan University.