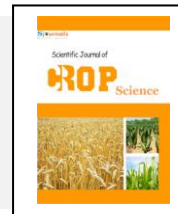Contents lists available at Sjournals

Scientific Journal of

CROP Science

Journal homepage: www.Sjournals.com

Original article

Factors affecting the ability of agricultural higher education graduates in Iran

M.S. Ebrahimi[a,*], A.M. Amini[a], B. Bahrami[c]

[a]*Assistant professor of rural development department, College of Agriculture, Isfahan University of Technology.*
[b]*Graduated student of rural development, College of Agriculture, Isfahan University of Technology.*

*Corresponding author; Assistant professor of rural development department, College of Agriculture, Isfahan University of Technology.

A R T I C L E   I N F O

A B S T R A C T

Achieving development requires the essential factor; the most important of these factors is human factors. The overall objective of this study was to investigating the factors affecting the ability of agricultural higher education graduates in Iran. The number of samples using Cochran's formula was 280 people who were chosen from the different agricultural fields. The main tool for this study is a questionnaire that the formal validity is obtained with professors and experts opinions and reliability by using Cronbach's alpha research for component were 0.891, 0.940 and 0.944 respectively. The results of research showed that the role of theory courses is the most influential variable that affects the ability of agricultural higher education graduates in Iran. The effect of these variables in three dimensions, basic, technical and organizational ability agricultural graduates was 29%, 34%, and 38% respectively.

---

1. Introduction

Educational systems play an important role in effectiveness and efficiency of economic, social, cultural, and political systems and, so, play an important role in development of the countries. Most of the experts believe that human resources have the most important role in development of the countries and quantity and quality of human resources are important in development. Academic institutes, training the work force, play an important role in leading each country to success. Therefore, it could be said that an efficient education system can provide the country with productive work force. Nonconformity between the job and the

professional skills of people would lessen the impact of the education on development of productivity. As a result, structural revision and improvement in the educational system has become very important (Shariatzadeh Joneydi, 2013). Training the human resources is one of the conditions and preconditions of agricultural development. Teaching agriculture through improving learners' knowledge and skills increases their productivity. The analysis of the transformational role of higher education is emphases to empowering the learner are two propositions, that higher education will need to be transformed to achieve this purpose; transformed (enhanced and empowered) graduates play a key role as transformative agents in society (Harvey, 2010).

The first modern university In Iran—Tehran University—was founded in 1934; the Ministry of Science was formed in 1967 (CE). In the last 25 years, Iran has experienced population growth (now over 70 million), and significant changes in its economy and society. One of these changes has been burgeoning growth in higher education. Iran has over 100 higher education institutions comprising of 30 universities, 14 colleges, 5 private colleges, and 36 higher education centers for in-service training of government employees. Among the total Iran population of 70 million are 3.5 million university students. Among them number about 1 million studying with distance-learning universities, 1.2 million in private (Azad) universities, 0.5 million in applied–scientific universities (under MSRT governance), and the rest in state-run universities. They are taught by about 50,000 faculty members (Rasian, 2009). Despite the high unemployment in the agricultural sector due to limited job opportunities, career preparation for the agricultural sector is one of the most important responsibilities of vocational and technical higher education in Iran. The Iran is suffering from national unemployment at a rate of 13.2% and 28% of agriculture and natural resources college graduates in Iran were unemployed (Zarafshani, Knobloch and Aghahi, 2008). Six broad areas of graduate attributes emerge as of major importance to employers,

Ability to work in a modern organization
Core/transferable skills
Interpersonal skills
Communication
Enthusiasm for learning and willingness to learn
Knowledge and intellectual ability

These six broad areas can be summarized in three dimensions capable to, basic, technical and organizational of graduate's ability.

Hejazi and et al (2008) showed that trends and attitudes of agricultural students at university level have undergone major changes over the past decades in Iran. In spite of disinterest of students for enrollment to higher agricultural fields in past decades recently we can see increasingly growth of this student in Iran. Graham (2001) believed the partnerships between higher education and business and industry have huge implications for agriculture. For more than a decade, employers have expressed a concern for the lack of graduates sufficiently trained to meet the challenges of a high-performance workplace. It has been proposed that the curriculum of agriculture was out of date and should be changed. As a result, many colleges of agriculture are undergoing programmatic changes and are reexamining the philosophy underlying their missions. According to Klein (1990), educating students for a career in agriculture and natural resources demands greater skills plus a more holistic perspective on interaction with society. In this study technical knowledge and other statements to measure specialized knowledge needed or preferred by bio-product manufacturers in their employees were included to provide guidance for curriculum changes.

2. Materials and methods

This study was applied research, which was carried out by using a survey method. Applying a multistage sampling technique, 280 people selected from random sampling method. Data were collected from structured interviews and field observation to examine the reliability of the questionnaire a pilot test was conducted with 280 samples. And Cronbachs Alpha coefficients for Likert type scales were calculated. Reliability of the questionnaire was determined by Chronbach alpha test. Alpha value is in range 0 to 1 so that internal reliability of items is found through this coefficient. If this coefficient is zero, it will show full unreliability of items and if it is one, it will show full reliability. If alpha value is more than 0.7, questions and items are suitable for testing the concept or the related variable. According to table 1 it is found that questions and items of the questionnaire is higher than 0.7. For this reason, it is scientifically valid to describe and test relations of variables.

Table 1

Reliability analysis (Alpha).

Scale Name	No. of items in the scale	Alpha value
Technical ability	15	0.891
Basic ability	15	0.940
Organizational ability	12	0.944

To determine the appropriateness of data and measure the homogeneity of variables (validity), 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 got for these variables show that the data are proper for factor analysis as showed in Table 2.

Table 2

KMO measure and Bartlett's test to assess appropriateness of the data validity.

	KMO	Bartlett's test of sphericity	
Technical ability	0.708	Approx. chi- square	Sig.
		412.90	0.000
Basic ability	0.815	Approx. chi- square	Sig.
		394.70	0.000
Organizational ability	0.722	Approx. chi- square	Sig.
		443.78	0.000

KMO value is between 0 and 1 and the closer to one, the higher the sample validity. Since this value (KMO) is larger than 0.5, it is concluded that the number of samples is suitable. According to the above table, Bartlett's test and significance p=0.000 thus this value is significant.

3. Results and discussion

The results showed that (58.6%) of the graduates were male and the rest (42.4%) were female. In terms of age, the graduates ranged between 20 and 51 years old, with an average of 34 years. Most of the graduates 47.2% were employed in public government sector. According to the graduates view point the ability of graduates was 10.3 from 20 thus their ability was in medium level and most of them rated their ability was not sufficient for duties career.

Step by step multiple regression analysis was used to analyze the ability of graduates in three dimensions (basic, technical and organizational). According to the results, in technical ability in first step, the role of theory courses in the technical ability with 0.342 coefficient of determination was taken into analysis. At the second steps the variable of non-formal education was analyzed. This variable specified 5% of the changes related to the dependent variable. At the three steps variables of providing the work experience was analyzed. This variable specified 7% of the changes related to the dependent variable. Analyses of these total variables showed that they specify about 47.6% of the changes related to conformity of the ability of graduated in technical dimension. Analyzing β of the changes showed that the role of theory courses is the most influential variable. Other results are shown in tables (3) and (4).

In multiple regression analysis, the variables of theoretical courses, non-formal learning and work experiences were the greatest contribution in the amount of technical ability for agricultural graduates. Due to the impact of the coefficients can be said that theoretical courses in Iranian agricultural universities and work experience of agricultural graduates could be explained and increased technical ability in graduates. These variables could be explained the rate of 45.7% of the variation in technical ability for these graduates. Also variables such as theoretical and practical courses and work experiences could be explained and increased basic

ability of agricultural graduates in Iran. These variables could be explained the rate of 61.2% of the variation in the basic ability for these graduates.

Table 3
Step by step regression analysis of conformity of the ability of graduated in technical dimension.

Steps	R	R2
1	0.58	0.342
2	0.63	0.404
3	0.69	0.476

According to the regression coefficient the regression line equation could be written as,

Y=6.720+0.496x1+0.084x2+0.155x3

Table 4
Influential factors on conformity of the ability of graduated in technical dimension.

Variables	B	Beta	T	Sig.
Fixed coefficient	6.720		13.802	0.000
Theory courses (X1)	0.496	0.622	13.146	0.000
Non-formal education (X2)	0.084	0.144	2. 341	0.020
Work experience (X3)	0.155	0.273	4.785	0.000

In multiple regression analysis, the variables of theoretical courses and work experiences were the greatest contribution in the amount of organizational ability for agricultural graduates. Due to the impact of the coefficients can be said that theoretical courses in Iranian agricultural universities and work experience of agricultural graduates could be explained and increased organizational ability in graduates. These variables could be explained the rate of 58.8% of the variation in organizational ability for these graduates. According to the graduates view point, the ability of graduates was in medium level and their ability was not sufficient for duties career. Thus this research suggested the heroically and practical courses in Iranian agricultural university need to basic revised. So higher education institutions have to ensure they produce transformative lifelong learning. There are various suggestions including the provision of skills modules, the revision of curricula to identify skills elements, the assessment of non-cognitive skills, the incorporation of work experience and the use of 'live projects', in which graduates work closely with employers to address a 'real-life' concern.

Acknowledgment

References

Graham, D.L., 2001. Employer Perception of the Preparation of Agr. Extens. Educ. Graduates. J. South. Agr. Educ. Res., 51(1),88-101.
Harvey, Lee., 2010. New realities, The relationship between higher education and employment. Tert. Educ. Manag., 6, 3-17.
Hejazi, Yousef., Hossini, S.M., Malek, M.I., 2008. Iranian Agricultural Graduates and Agri-Business Ventures. American-Eurasian. J. Agr. Env. Sci., 4 (3), 311-317.
Klein, M.L., 1990. Southern California Food Agr. Firms NACTA J. XXXIV (2), 30-34.
Rasian, Z., 2009. Higher Education Governance in Developing Countries, Challenges and Recommendations, Iran as a Case Study. Nonpartisan Educ. Rev. / Essays, 5(3), 1-18.

Shariatzadeh, J.M., 2013. Investigation of agricultural education systems and labor market needs in Iran. Arch. Appl. Sci. Res., 5 (1),9-14.

Zarafshani, K., Knobloch, N.A., Aghahi, H., 2008. General Perceived Self-Efficacy of Iranian College of Agriculture Students. J. Int. Agr.Extens. Educ., 15(1), 69-84.