Predictors of Agricultural Science Students’ Choice of Careers in Agriculture: a case form Kermanshah Province, Iran

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This descriptive-correlational study was conducted to investigate variables determining the choice of agriculture related careers among agricultural science students in Kermanshah Province. Samples were selected by stratified random sampling technique, and questionnaire was the main research instrument. Based on findings, only less than 40 percent of rural youth have a tendency to occupy agriculture as their future career. The results show that the major factors influencing the choice of agriculture related careers are period of residence in rural areas, and study field of interest. Since the process of socio-economic development of any country is ultimately determined in relation to human resources, infrastructures for increasing the tendency of educated rural young people in agriculture to agricultural jobs should be provided.

Key words: Agriculture related career, career, agricultural high school, employment, agricultural science student.

INTRODUCTION

Human resources are considered the most important capitals in any country's economic growth, so that most economists believe the human resources that finally specified the country's economic and social development trends and characteristics. As Harbison believes the human resources form the main base of the wealth of nations, capital and natural resources are considered as dependent factors of production or, most experts believe the remarkable success of East Asian countries derives wisely attention to investment in human resources and management (Mohammadi Dinani and Fouladi, 2001). Agriculture because of food security supply, capital returns, exchange import, low exchange export, and social justice compared to other sectors of the economy have many capabilities and plays a prominent role in the country’s economic. This section provides a vital role in Iran’s economy, because it is covered about 11 % of the Gross National Product (GNP), 23 percent of employment and 80 percent of food production (Ali Beigi et al., 2012, quoted from Jacob and et al.). Agricultural development does not realize only with the insert of capital and technology to this sector, rather, it is a multidimensional process in which many factors are involved. Meanwhile, the impact of investments in upgrading and strengthening the human resources in agricultural development is an undeniable work (Gelij, 2005). Because there isa considerable illiteracy in the agricultural sector and many job opportunities in this part. Observations show that most of the opportunities available in this sector are unskilled persons (Orby, 2006).

What it is show good is that how agriculture has an important role in the economic arena and even political security, so its development is also considered remarkable importance, but for development of this...
sector, human resource development seems to provide and manage of all other undeniable necessary resources. Iran is taking steps in several areas, including significant investments of capital in agricultural education sector. A question that arises in this area is that: What is the end of investments made in the agriculture sector and essentially how is the process of entering students and students of agricultural education? Existence literature responds to the above question as follow:

Most of agricultural graduates are prepared themselves to employment in public and private institutions and to work in urban areas and on the other hand, often those enter to agricultural college that often lives in cities and did not have any relation with agriculture and only for getting a college degree and they are selected agricultural fields without any motivation. However, in many parts of the world by building schools in rural agriculture and agricultural hubs the conditions are provided so that people interested agriculture are entered agricultural colleges. Russian elementary school students are familiar with the Agricultural Sciences and after graduation from elementary school they are entered into public or agriculture schools and finally, those interested in the fields of agriculture that are selected among most villagers are entered to agricultural college in the same areas. The situation is similar in the United States and agricultural students familiar to the agricultural practices practically by become Memberin agricultural organizations and they are chosen agriculture field with enough knowledge (Tabræ and Ghasemi, 2006).

Research on agricultural education graduates in the new system shows that they are not truly employed to the market related to their education field and many of them are unemployed or get jobs corruption (Shariat Zadeh et al., 2007).

The study of relationship between agricultural vocational training and job selection, Shahid Bahonar of Bushehr province showed the majority of graduates are attracted to occupations unrelated to agriculture (Hemmati et al., 2007 quoted Monfared)

In our country in spite of many graduates in fields related to agriculture through science- applied educations unfortunately limited percent of them are absorbed into the labor market. So in the agricultural sector on the one hand we are faced with senility of age and low level of education and on the other hand with the problem of job corruption in graduates. (Farokhzade, et al., 2010). This problem seems to be worst when we know that the low level of knowledge and expertise of the staff working in the agricultural and rural sectors. What effect is created? About this situation Ebrahimpur et al., (2008) quoted by Torknejad wrote: Low level of knowledge and expertise manpower employed in agriculture and rural parts that it can be seen in all areas including plowing methods and practices as well as utilization of pastures and forests, not only led to the environmental crisis and the severe destruction of fertile land (about 2 billion tons of soil annually), but also has hundreds of billions of riyals budget to the Watershed project yearly. These authors also add: Low yield in Hectare, undue use of pastures and forests, low productivity of rural and agriculture industries are the consequences of such situation (p. 9).

What was occurred in the previous lines clearly indicate the job corruption of graduates in agriculture and the negative impacts of economic - social – ecological in this situation. This confirms the necessity of serious review on individuals’ employment that are trained in agriculture, because the existing state of the country, causing losses to all types of investors in the country, will also resulted the reduction of external efficiency of the education system, so it has a very negative impact on career success, job satisfaction and self-employment. This itself cannot lead to optimal development of the agricultural sector and reduce its employment. Baseri and Jahangard (2007) write:

In the past four decades, the share of agriculture in employment and production is decreasing and now employment in this sector contributed about 7.22 percent. Meanwhile graduates as a major national resource and social development of society are most sensitive people that should assumed all economic, social and cultural cycles, so in addition to scientific and technical education, they it is necessary to consider their employment towards education field. Therefore exact understanding the determinants factors of the choice of agricultural occupations to be considered as the most obvious necessities. Jobs associated with agriculture and its influencing factors of multi conducted research into some of them are mentioned below:

Istress (2008) writes: Rural students acted very well about the decision making in agricultural jobs selection. Skofild (1994) writes: U.S. students choosing careers in agriculture are looking for job security. They believe that agriculture is vital to America’s economic success. The social status of parents is important to choose a career in agriculture, but the field of agriculture will not affect career choice. Sadeghi (2005) showed that there is a positive and significant relationship between the economic situation of the family, the amount of cultivated land, the mechanization of agriculture and rural youths attitude (Mousae and Amani, 2010). Frey (2006) believes that social, family and school value in rural areas could play an important role in career choice by youth (Ali Beigi et al., 1391). Mousae and Amani results (1389) showed that there is a significant relationship between the amount of cultivated land planted with social participation and attitude of rural youth employment in the agricultural sector. Johnson et al. (2005) showed that the attitude of rural youth to employment in local communities, and preferences related to their career choice affects the living place.

Pour Sinaa and et. study (2010) showed that there is
significant different in accepting or rejecting an agriculture job and father or responders’ supervisor jobs; in other words, who is his father was farmer show more interest to this job. Fernandez and Dilman (1997) and Goldening and et al. (2003) write: Research shows that both the sense to the village and feeling of satisfaction to it have a strong effect on rural youth career aspirations. Shafiabadi (2003), quoted from Yousef pour writes: About 90 percent of rural teens are influenced by their parents’ jobs (Pour Sina, et al., 2010). The findings of Adokan and Baleshvid (2008) on the causes students to join the "Future Farmers of America" organization and agricultural activities showed that the individuals who are most willing to do so their parents were already members of this organization. Some researchers have also emerged to respond to the reluctance of young people to careers in agriculture, including, Agassizade (2005) lists factors on such as reluctance according to priority as follows. Difficulty of agricultural work, poor career prospects, low income, lack of necessary facilities for agriculture, lack of facilities in rural areas, lack of attention to the agricultural from community, lack of policy makers and organization’s attention to agriculture, and the lack of young interest to agriculture. Ramezanian (2001) also in his study was listed these causes as follows:

The lack of adequate investment in agriculture, lack of significant attractions in rural areas for rural youth, being a chore the agricultural activities, lack of social security system in rural areas and agriculture part that results a sense of insecurity for rural farmers and villagers.

According to foregoing circumstances clearly evident in rural areas and agricultural jobs in detail hereinafter relative to those discussed above, it is essential to enter needs of individuals with specific features in this area for training and employment. So in the current situation determining the point variables is a serious necessity to agricultural job selection for chaotic department and its graduates. The study also aims to determine the effect of variables on the willingness of rural youth studying in vocational agriculture jobs in the future, which are designed and implemented in agriculture schools of Kermanshah province.

Specific objectives of the study were as follows:

- Examine the individual, familial, social, educational characteristics of rural youth
- Determination of the tendency of rural youth to select agricultural jobs
- Study the effect of individual, familial, social, educational factors to choose agricultural job by rural youth tend.

**RESEARCH METHOD**

The present quantitative study is descriptive – survey and according to research limitations, study used a cross-sectional design, in this sense, the study describes the characteristics, attitudes and behavior of individuals in relation to a subject in a certain period of time. Sectional plans are used not only to describe the variables at one time, but also to study the relationship between influencing variables on case study.

The study statistical population consisted of high school students in the province of Kermanshah (N = 657). For sampling, the table Bartlett et al. (2001) was used. According to this table, the sample size was considered 240. Also stratified proportional sampling method was used. Different methods were used to gather necessary information for this study. In the documentary studies, the library documents were used to obtain information about the theoretical part. The main tool in the field of data collection, the questionnaire was developed using literature and theoretical foundations.

In order to ensure the validity and content of the questionnaire, members of the College of Agriculture and Natural Resources promotes scientific Pardis University after studying the questions and questionnaire’s questions announced their revision ideas. Cronbach’s alpha was used to estimate the reliability of the questionnaire method. For this purpose, 20 copies of questionnaires were completed by the same population and after processing the data, Cronbach’s alpha coefficients were calculated for questions. This coefficient that determines the reliability of tool, equaled to 79 percent. After processing data responsible descriptive and inferential statistical calculations were performed using the software 17SPSS. In order to descriptive analysis of mean and standard deviation and logistic regression were used to inferential analyze.

**RESULTS**

According to findings, the average age of respondents was 16.99 years (SD = 1.775). Average of students families’ farm was 6.73 ha (SD = 14.028) and the minimum and maximum amount of ground were reported zero and 120 hectares, respectively. Based on the results of agriculture with 33.9% the maximum field of agricultural activities accounted for the students’ fathers and then farming-animal activities were 27.6 percent. According to findings the habitant of 59% students were reported village and also 41% in the city.

Average length of respondents stay in the rural was 1.17 years (SD = 3.066) and a maximum and minimum length of stay is 16 and 0 years. Respondents had the average experience 4.70 years agricultural work (SD = 004/5). So that the results are reported as the most common agricultural students belonging to Students with 25.1% and then the mechanics students were with 23.4%. Horticulture and floriculture works and growing, with
Table 1. Choosing Future job.

<table>
<thead>
<tr>
<th>Future job</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>manager</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Experts 1</td>
<td>52</td>
<td>21.8</td>
</tr>
<tr>
<td>Experts 2</td>
<td>13</td>
<td>5.4</td>
</tr>
<tr>
<td>Military</td>
<td>23</td>
<td>9.6</td>
</tr>
<tr>
<td>Technical</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Employer</td>
<td>16</td>
<td>6.7</td>
</tr>
<tr>
<td>Sale</td>
<td>5</td>
<td>2.1</td>
</tr>
<tr>
<td>Services</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Professional worker</td>
<td>3</td>
<td>1.3</td>
</tr>
<tr>
<td>Building mechanic</td>
<td>13</td>
<td>5.4</td>
</tr>
<tr>
<td>Agriculture worker</td>
<td>37</td>
<td>15.5</td>
</tr>
<tr>
<td>Other cases</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>Agriculture engineer</td>
<td>58</td>
<td>24.3</td>
</tr>
</tbody>
</table>

Table 2. Cox – Snell determination coefficient

<table>
<thead>
<tr>
<th>Nagelkerke R Square</th>
<th>Cox and Snell R Square</th>
<th>Log likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>493/0</td>
<td>364/0</td>
<td>a202/644</td>
</tr>
</tbody>
</table>

17.61 and 11.7 were allocated the next highest percentages, which in total they formed about 0.77 education fields of students.

Future career choice was one of the main issues discussed in the study of future career choices by the students. So, respondents in the exposed of career options such as experts 1 (doctors, engineers (non-agricultural), manager (as executive director of a firm), pilots, lawyers, university professors, scientists and researchers), experts 2 (teacher, librarian, nurse), military and security (police, firefighter, military person), technical (radiologist, computer specialist), office staff (secretaries, employers, accountant), sale (including sale in a supermarket), services (cleaner, sweeper), building professional workers (welding, carpentry, masonry, piping, electrical wiring, piping, and painting), Mechanic (Mechanic, automobile smoothing and painting, etc.), agriculture engineer, Agriculture worker, other cases (cases that respondent named them). The results are summarized in the table as follows:

Looking at Table 1 shows that students who have expressed agriculture as a wish for his/her career has the highest frequency 24.3 percent among other businesses. 27 percent also have chosen professional careers. Agriculture workers by 15.5%, is the third popular largest job group among students. The three options totally have chosen about 66% of options. The lowest reported percentages belonging to the technical and service jobs with total 8 percent. In order to determine the variables of selected or not selected agriculture job by students so the dependent variable agriculture jobs - jobs in agriculture - was two dimensional variable, logistic regression was used. Therefore variables based on previous studies were used in the regression equation that their results in detail in the following.

Cox - Snell determination coefficient:

The coefficient of Cox - Snell determination represents the variance of the dependent variable that is explained by the independent variables. Note that the logistic regression can be expected in 20 to 30 percent is appropriate (Banimah, 2011 quoted to Momeni and Faal Ghayoumi) and table 2 shows 36% for the present model. We can conclude that the amount was quite good and independent variables are well able to predict agriculture jobs.

Model predicting percent

The results of Table 3 show the 78.5 percentage of the overall predicting model. That is a total 78.5 % of samples were correctly classified between agriculture and non-agriculture jobs, but in among them, 26 participants must be in group 1 i.e. agriculture jobs selectors including engineering and agriculture worker were in non-agricultural jobs. Also 23 subjects of samples who were selected to be part of agriculture jobs selectors...
Table 3. Job Classification

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>0</th>
<th>Accuracy percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>23</td>
<td>115</td>
<td>83.3</td>
</tr>
<tr>
<td>1</td>
<td>64</td>
<td>26</td>
<td>77.1</td>
</tr>
<tr>
<td>Final percent</td>
<td>78.5</td>
<td>78.5</td>
<td></td>
</tr>
</tbody>
</table>

0 = agriculture job  1 = non-agriculture job

Table 4. Variables used into logistic regression equation

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>B coefficient</th>
<th>SD</th>
<th>Parent statistics</th>
<th>Freedom degree</th>
<th>Significance</th>
<th>Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependency sense to village</td>
<td>0.009</td>
<td>0.029</td>
<td>0.101</td>
<td>1</td>
<td>0.751</td>
<td>1.009</td>
</tr>
<tr>
<td>Satisfaction sense to village</td>
<td>-0.005</td>
<td>0.023</td>
<td>0.049</td>
<td>1</td>
<td>0.825</td>
<td>0.995</td>
</tr>
<tr>
<td>job finding in area</td>
<td></td>
<td></td>
<td>7.760</td>
<td>5</td>
<td>0.170</td>
<td></td>
</tr>
<tr>
<td>Living tendency to village</td>
<td></td>
<td></td>
<td>7.945</td>
<td>5</td>
<td>0.159</td>
<td></td>
</tr>
<tr>
<td>University interest field</td>
<td></td>
<td></td>
<td>18.785</td>
<td>6</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Experience of agriculture work</td>
<td>0.086</td>
<td>0.046</td>
<td>3.472</td>
<td>1</td>
<td>0.062</td>
<td></td>
</tr>
<tr>
<td>Habitat time in village</td>
<td>0.288</td>
<td>0.083</td>
<td>12.185</td>
<td>1</td>
<td>0.000</td>
<td>1.090</td>
</tr>
<tr>
<td>place of residence</td>
<td></td>
<td></td>
<td>0.814</td>
<td>2</td>
<td>0.666</td>
<td>1.334</td>
</tr>
<tr>
<td>The amount of land</td>
<td>0.10</td>
<td>0.022</td>
<td>0.211</td>
<td>1</td>
<td>0.646</td>
<td>1.010</td>
</tr>
<tr>
<td>Father’s job</td>
<td>-0.021</td>
<td>0.061</td>
<td>0.119</td>
<td>1</td>
<td>0.730</td>
<td>0.979</td>
</tr>
<tr>
<td>constant</td>
<td>65.892</td>
<td>8.256</td>
<td>0.000</td>
<td>1</td>
<td>0.999</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Lojit=CONSTANT +2X1 +0/288X 16/213
X1 = University field
X2 = habitat time in village

were located in another category. Since the predictive power was over 50% is considered acceptable in the logistic regression (Banimahd, 2011 quoted by Momeni and Faal Ghayoumi) it can be concluded that predicting percent of present model is quite good.

Logistic regression equation:

Findings related to Logit model according to which variables distinguishing the selector persons of non-agricultural job positions specified in Table 4. In fact, the model shows the audit variables that it can be predicted individuals according to it that will choose agriculture job in the future. Based on analysis findings, the best discriminator variable is a field that students are choosing to continue their college education. This variable also is the highest Wald statistic (Wald = 18.785). It is after the stay time or a history of living in villages (Wald = 12.185) that seems appropriate discriminator. Both the university and the stay time in the village variables, that the table shows are highly significant. The significance of these variables are (Sig =0.005) and (Sig = 0.000), respectively.

As Table 4 also shows other variables such as the dependency sense to village among respondents using question 11 such as I plan to live in the village for many years. Development of this village is very important to me and ... was measured, was not significant. Satisfaction of rural facilities was another variable was measured using question 11, such as satisfaction from health services in the village, enough earning opportunities in village and using 5 Likert ranges quite dissatisfied, dissatisfied, somewhat satisfied, satisfied, very satisfied that there was no significant according to Table 4. Finding job in the region, tendency to live in the village, experience of agriculture work, place of residence, the amount of land, father’s job also showed same situation.

DISCUSSION AND CONCLUSIONS

The overall objective of this study was to determine the effects of variables which are effect on tendency of youth in schools are affected to select agriculture jobs in future. The results showed only two field’s variables selected for university education and time of stay in the village among used variables able to explain the tendency of rural youth to select agriculture jobs. Mousaii and Amani (2010) quoted by Sadeghi writes that there is a positive and significant relationship between economic status of family, the amount of cultivated land, mechanization and rural youth attitudes to agriculture activities. The present research is examined the amount of land and its relation to the choice of agriculture job but the variable could not be significant, perhaps it could be due to the lack of
sufficient attraction for youth in rural areas to work or high risk of agricultural activities and lack of adequate supports such as insurance, etc.

Ali Beigi and et al. (2012) quoted to Friy write: Social value of family and school in rural areas could play an important role in job choice by youth. This study examined family issues such as father’s job but was not significant according to its relationship to select agriculture job. However, most of students’ fathers’ job was agriculture and crop – agriculture. This may relate to students’ awareness of economic - social issues, related agriculture job whose fathers have experienced this job.

Akkari et al. (2009) showed there is a positive and significant relationship between genders, field of study, the year entering to college, place of residence, living experience in the village, satisfaction of the agriculture field selection and attitude to agricultural employment in rural areas variables. This study also showed living experience in the village is a variable that a positive and significant relationship with agriculture job selection, this would seem to be associated with a tendency to be justified by the nature or having a positive attitude to the rural environment.

Mousaii and Amani (2010) quoted of Eskandari know that the amount of agriculture land and youth experience in agriculture as factors that had an effective role in creating incentives for rural youth employment in agriculture part. The experience of the youth in this study also examined although not significant, but (sig =0.62) showed that this is not unrelated to issue. It seem that having experience be effective with partial demystification of the situation and show the ups and downs in success and desire of youth to jobs in agriculture.

Hemmati et al. (2007), quoted to Monfared writes: The study of relationship between Shahid Bahonar Bushehr agriculture schools training with agriculture jobs showed that the majority of graduates are attracted to jobs unrelated to agriculture. The study also showed that nearly 40 percent of students said that they are willing to take agriculture jobs in the future. As relevant studies show that many of them are unemployed or have job corruption. So, aging phenomenon and disability in the absorbing specialized forces have been introduced as fundamental challenge for agriculture in the current decade. Such issues show more serious look at their agriculture job that need to identify effective factors to be aware of the situation, provided that people are choosing to study agriculture that could be hoped to return them after graduation to agriculture part. It also prevents from study just for receiving university degree and no enough motivation to act for selecting agriculture fields as Tabrae and Ghasemi (2006) reported. Such additional conditions that prevent loss of material and spiritual wealth may be bringing an agriculture boom. The study of Tabrae and Ghasemi (2006) might be argued its reasons, where they write: Studies show the fact that in rural areas profitable investment on human resources was more than investment on production facilities. It is obvious and it’s obvious due to the fact that these trained and skilled man-powers use high efficiency, optimum efficiency in the use of buildup factors, while unskilled man power does not have power to make better use of production factors and therefore easily wasted all kinds of investments.

So, it seems like so many parts of the world providing conditions for interested peoples to enter the agriculture college with the establishment of agriculture colleges in rural and agriculture hubs, because stay in rural area and academic fields like current research are introduced the distinguish variables to select agriculture job and agriculture experience was in the significant border that indicates its importance in selecting agriculture job. Without saying it can be find that agricultural school graduates can have a tremendous impact on rural development by effects on reducing poverty and migration and helping to rural development assistance, but to achieve this requires a good understanding issues such as factors influencing youth attitudes to agriculture job, what Agassizade (2005), has explained.

Overall, we can conclude that review on some policies of governmental part such as investment attentions on agriculture and rural part, revision of the social security system and the problems like this, with its orientation in order to reduce existence difficulties, can be provide a situation for graduated agriculture students and improve an industry that have effective role on foreign income, food security and According to above contents, the following cases are recommended:

1 Allocating the proper research credit in order to provide a broad and deep investigation of factors influencing job choice in relation to agriculture
2 Change in how students of accepted agriculture college and high school based on factors derived from research projects and preventing from selecting agriculture students on the basis of preservations.
3 Change existing law so as to accepting student and more choices based on students from village to continue studying agriculture, for this purpose, can be considered a special quota for these individuals.
4 Providing conditions those urban and unfamiliar students with rural environment and agriculture before field selection that they give relative familiarity with the area and then choose the field.

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