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Assessing Attitudes of Female Freshman Agricultural Undergraduates towards Entering Agricultural Majors

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Abstract: The study aimed at assessing attitudes and perceptions of female freshman agricultural undergraduate students toward entering agricultural majors using survey and correlation methodologies. The statistical population consisted of 326 female freshman undergraduate students of agricultural fields in agricultural college at Bu-Ali-Sina University between 2008 and 2009. Among them, a number of 141 samples were selected randomly. Research tool was a questionnaire. Reliability of the questionnaire was tested during a pretest process by using Cronbach's Alpha test. The calculated Cronbach's Alpha coefficient was 86% ($\alpha = 0.86$) that shows a high reliability of the research tool. Results of the study revealed that 53.3% of target females have agreed to agriculture by positive attitude, 24.5% by neutral attitude, and finally 21.1% of the students have been disagreed to agriculture by negative attitude. The most important factor affecting entering agricultural majors were respectively: the role and importance of agriculture in both food security and self-sufficiently, getting university certification, and reaching to a better social status.

Key words: Agricultural major, attitude, female students, higher education

INTRODUCTION

Universities as scientific centers like economic, political and social centers have entered an era in which developments and the expectations facing them differ definitely with the changes and expectations in the past decades (Rajabi and Ashrafi, 2002). For instance, significant increases in student numbers and increasing the ratio of female to male students, and the need to change and revision of curricula and training programs are of the key challenges in higher education system of Iran. These cases are considerable especially for agricultural university programs (Hamdhaidari *et al*., 2008; Hejazi *et al*., 2008). According to statistical evidences, status of female participation in agricultural colleges have been far more than other colleges in the past years so that proportion of female agricultural students has reached from 9.2% in 1994 to 50.8% in 2004 (Gholizadeh and Bratali, 2009). On one hand, opening the higher education doors to women can be one of the best ways to employ women in various fields (Mohtashami, 2005); on the other hand it requires drastic attention to expectations, demands and needs of women and their capabilities (Gholizadeh and Bratali, 2009).

Increasing the enrollment of agricultural students can take place based on different reasons. Osborn and Dyer (2000) in a study on Illinois agriscience students indicated that parents of the students and their teachers in high school agriculture play the important role for students' enrolment on colleges of agriculture. Dyer *et al*. (1999) on the nearly same study stated that students who had completed high school agriculture courses, they had more positive attitudes toward university agriculture and agriculture as a career and the most influential person in their decision to attend the College of Agriculture was their high school agriculture teacher.

In the study by Bogue (2002) about attitudes of students towards agriculture, he found the reasons include working in the open air, working with animals, being your own boss, and an interesting job (satisfaction). In his research, Bogue showed no significant difference between male and female students about agriculture, however, the female students rated working in the open air and with animals as positive aspects and males students rated working with machinery as a positive aspect. According to Peiter *et al*. (2004) career opportunities, students' love of animals, the positive reputation of the faculty, scientific nature of agriculture, financial aids, and environmental concern were the most important factors to influence the freshman students to attend the college, school, or department of agriculture. Kentucky freshmen agriculture majors ranked their parents/guardian as the person who most influenced their choice of college, school, and department of agriculture. Other persons who were identified as influential included the university agriculture program representative, friends, high school teacher, brother or sister, and other relatives.

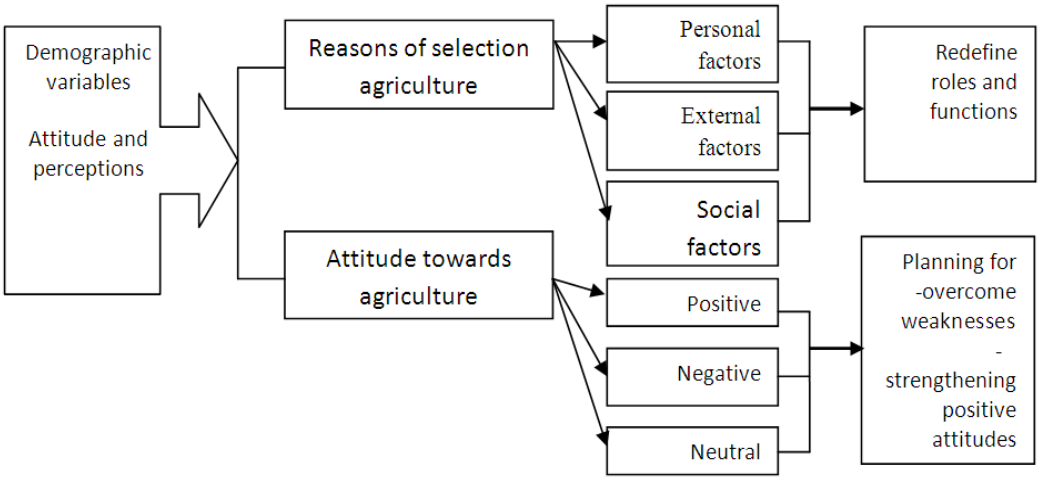

Fig. 1: The theoretical framework of the study

In determining and comparing attitudes of both freshman and senior students toward agriculture in agricultural college of Tehran University, Zarifian and Shariatzade (2001) found that attitudes of the freshman students, compared to senior students have little positive change. The effective factors in changing the attitudes toward agricultural majors were respectively: awareness of agriculture, interest in practical work on agriculture, gaining profit in agricultural activities, and gaining grant as agricultural engineer. According to Movahedi and Chizari (2006), eligibility for continuing study on graduate course, importance of agriculture in Iran, more probability achievement in agriscience, and interest toward agriculture were the most important reasons for selecting agriscience among BASU undergraduate students.

In a research by Bakhshijahromi and Zamani (2007) the motivation of studying agriculture were compared between female and male students. The study indicated that although the experience of female students on agriculture, their relationships to agriculture work, and their rural originality are usually weak, other aspects such as academic status and interest in agricultural majors are in a better situation rather than male students.

The results found by Movahedi *et al*. (2007) revealed when the students with rural originality entered the agricultural college they have showed more positive attitude towards agriscince than those with urban originality. Findings of Surmeli and Sahin (2010) showed no significant differences between female and male students regarding attitudes towards biotechnological applications.

This study has reviewed and assessed attitudes and perceptions of female freshman agricultural undergraduates towards entering agricultural majors thereby suitable solutions can be explored in order to use by planners of the agricultural higher education system. The problems addressed by this research were what reasons influence on female student's attitudes that they select agricultural majors and what are viewpoints of female's students about agricultural majors.

RESEARCH METHODOLOGY

The present study aimed at reviewing and assessing attitudes and perceptions of female freshman agricultural undergraduates towards entering agricultural majors. Hence, this is an applied research and its results can effectively help planners and policy makers of the agricultural higher education system. As the attitudes of the students are described and analyzed, the type of study should be called descriptive-analytic research by using a surveying approach (Fig. 1).

Statistical population of the study consisted of 326 freshman female undergraduates who were studying at college of agriculture of Bu-Ali-Sina University between 2008 and 2009. A number of 141 people were randomly selected as the research samples.

Data gathering tool was a questionnaire, which was structured around three parts. The first part was related to personal characteristics such as age, high school diploma, place of residence, place of birth, academic field of study, diploma's grade point average (out of 20), an agriculture major priority (out of total 100 majors), and fathers' job. The second part included three sub-section on personal, external, and social factors affecting on selecting the agricultural majors, and included 24 questions based on a Likert five-point scale. In the third part, as the most important section of the questionnaire, Guttmann's three-

Table 1: Attitudes' questions based on Guttmann's scale three-point questions

Questions	+/-	Agreed	No idea	Disagreed
Female students entering the agricultural majors are necessary and important	+	3	2	1
Females need to be educated on agriculture due to improve rural women activities	+	3	2	1
Educated females on agriculture are very important in order to improve educational activities of rural women	+	3	2	1
Entering females to agricultural majors will help agricultural and rural development	+	3	2	1
Agricultural majors should be separated in terms of gender	-	1	2	3
Agriculture is not relevant to physical features of females	-	1	2	3
Female students' proportion entering the agricultural majors should be decreased	-	1	2	3
Unemployment will be increased in the country because of the large number of female educated in the fields of agriculture	-	1	2	3
Females are not sufficiently able to work in rural and agricultural location	-	1	2	3

point scale questions (agreed, no idea, disagreed) was used by a number of nine questions. Finally, with regard to positive or negative questions (reverse coded), coding was done in Table 1:

Reliability of the research tool was tested during the process of pre-test by completing 30 questionnaires from post-diploma female students of Bu-AliSina University. The Cronbach's Alpha test was used to calculate reliability of the questionnaire and it was 81.5% (α = 0.815).

Data processing and outputs analyzing was done by SPSS software. Data analysis was done by two parts of descriptive and analytic methodologies. In descriptive section statistics such as mean, percent, variance, and standard deviation were used. In analytic section, the Spearman and Pearson correlation coefficients were employed in order to determine the relationship between variables where necessary.

RESULTS AND DISCUSSION

Descriptive results of this study showed that the respondents' age ranged between 18 and 23 years. The mean age of the female students was 20.08 years. In terms of diploma, 78.7% of the students had natural science; only 0.7% had a diploma in agriculture; the rest in other fields like mathematics and human science. The results revealed only 6.4% (nine people) of the female students were living in village. The average of respondents' diploma at high school (G.P.A) was 17.18 out of 20 and it shows a high grade per average of the female students who have been entered the agricultural majors. About priority of agricultural major (out of total 100 majors), 30.5% have selected agricultural major in priority lower than 20, and 33.3% between 21 to 50 and the rest (36.2%) above 50. The students' interest toward agriculture, before admission to the agricultural majors, in terms of the mean, was 2.3 (out of 5), in case it is increased (m = 3.1 out of 5) after enrollment to the agricultural faculty.

The female students' perceptions about reasons for selecting agricultural majors: In this section, in order to explore reasons for selecting agriculture as a field of study, the students were asked to rate their perceptions in three different parts in terms of five point Likert-type questions from very low = 1 to very much = 5. The results of the three parts have been described as below.

Table 2: Ranking personal reasons for selecting agricultural majors

Ranks	Items	M	S.D.
1	Acquisition B.Sc. degree	3.4	1.3
2	Interest toward academic education on agriculture	2.8	1.3
3	Interest to agricultural work and activities	2.61	1.3
4	Limitation for admission in other majors	2.60	1.2
5	Only for engineering title on agriculture	2.4	1.4
6	Interest toward working on rural areas	2.1	1.2
7	Previous experience on agriculture	1.6	0.9

Table 3: Ranking the external reasons (other people and sources) for selecting agricultural majors

Ranks	Items	M	S.D.
1	Vicinity of agriculture faculty to the living location	2.4	1.3
2	Parents	2.1	1.07
3	Friends	2.1	1.1
4	Governments' programs and policies	1.9	1.2
5	Media	1.8	1.2

Personal reasons: The results indicated that acquisition B.Sc. degree (M = 3.4 out of 5) and interest toward academic education on agriculture (M = 2.8 out of 5) are the two reasons with a mean more than other personal reasons. Table 2 illustrates ranked items about personal reasons in terms of mean scores.

The external reasons (other people and sources) for selecting agricultural majors: The female students identified none of the external reasons for selecting agricultural majors above average. However, the reason vicinity of agriculture faculty to the living location can be seen more important than other reasons as illustrated in Table 3.

Socio-economic reasons for selecting agricultural majors: About socio-economic reasons, as can be seen in Table 4, the following reasons were identified by the female students as the reasons with a high range of mean; the role and importance of agriculture in food security, acquisition a higher social status, only for entering university, income- generating through agricultural activities, and availability of entrepreneurship and self-employment areas in agriculture.

Table 4: Ranking the socio-economic reasons for selecting agricultural majors

Ranks	Items	M	SD
1	The role and importance of agriculture in food security and self-actualization	3.5	1.2
2	Achieving to a higher social status	3.4	1.7
3	Only for entering university	3.0	1.5
4	Income- generating through agricultural activities	2.9	1.3
5	Availability of entrepreneurship and self-employment areas in agriculture	2.8	1.1
6	Availability of employment opportunities at the public and private sectors on agriculture	2.5	1.1
7	Preventing rural-urban migration	2.3	1.2
8	Financial support and giving loans to the agricultural graduates by government	2.2	1.1
9	Using the agricultural graduates as farm advisors	2.1	1.1

Table 5: Assessing the female students' attitude toward agricultural majors

				Result		
Questions	Agreed (%)	No idea (%)	Disagreed (%)	+	0	-
Agricultural majors should be separated in terms of gender	18.6	17.1	64.3	64.3	17.1	18.6
Agriculture major is not relevant to the physical features of females	23.2	27.5	49.3	49.3	27.5	23.2
The number of female students entering the agricultural majors should be decreased	27.5	20.3	52.2	52.2	20.3	27.5
Female students in the agricultural majors are necessary and important	44.5	29.2	26.3	44.5	29.2	26.3
Educated females on agriculture are necessary due to improve rural women activities	57.1	35.0	7.9	57.1	35.0	7.9
The role of educated females on agriculture are very important to improve education and training of rural women	68.1	24.9	7.0	68.1	24.9	7.0
Entering females to agricultural majors will help agricultural and rural development	48.2	25.3	26.5	48.2	25.3	26.5
Unemployment will be increased in the country because of the large number of female educated in the fields of agriculture	29.0	24.6	46.4	46.4	24.6	29.0
Females are not sufficiently able to work in rural and agricultural environments	23.9	24.6	51.5	51.5	24.6	23.9
Total mean (%)				53.5	25.4	21.1

Table 6: Results of assessing correlations between the variables

Independent variable	Dependent variable	Test	Correlation coefficient (r)	Significant level (p)	Result
Diploma	Attitude toward agriculture	Spearman	-0.23	0.008	+
Entrance year of university	Attitude toward agriculture	Pearson	0.03	0.71	-
Living place (Village/City)	Attitude toward agriculture	Spearman	0.19	0.02	+
Father's job(Agriculture/ Non-Agriculture)	Attitude toward agriculture	Spearman	0.21	0.02	
Field of study	Attitude toward agriculture	Spearman	0.05	0.47	-
The average of diploma	Attitude toward agriculture	Pearson	0.11	0.29	-
Preference of agriculture	Attitude toward agriculture	Pearson	0.04	0.62	-

Assessing the female students' attitude toward agricultural majors: As expressed before, in order to assess the female students' attitude toward agricultural majors, nine questions were structured based on Guttmann's three-point scale questions (agreed, no idea, disagreed). Of nine questions asked, five of the items (5, 6, 7, 8, 9; Table 5) should be transform reverse coded. Therefore, attitude of the target students towards agricultural majors was assessed in terms of percent and with attention to reversed codes. According to the results, 53.5% of the female undergraduates have agreed to agriculture by positive attitudes, 25.4% by neutral attitudes, and 21.1% have been disagreed to agriculture as a field of study by negative attitudes (Table 5).

Relationship between the variables: The Spearman and Pearson correlation coefficients were employed in order to determine the relationship between variables where necessary (Table 6). Results showed a significant correlation between diploma, living place (village/city), and father's job and attitude of the target students to agriculture majors. But there were no significant correlations between the entrance year of university, field of study, the average of diploma, preference of agriculture among other choices, and attitude of the target students to agriculture majors.

CONCLUSION AND RECOMMENDATION

Results show that the majority of female freshman undergraduates had no interest in agriculture before entering the agricultural college and they had chosen the agriculture for some reasons like the importance of agriculture in life, acquisition B.Sc. degree, and achieving to a higher social status. But the important thing is that the majority of the female students were interested in agricultural majors after entering the agricultural college. According the results more than 50% of the female undergraduates have agreed to agriculture by positive

attitude and a rather low percent (21%) disagreed to agriculture by negative attitude. This conclusion largely is confirmed with findings by Movahedi and Chizari (2006) and Bakhshijahromi and Zamani (2007).

The study showed that among various individual and social factors affecting on selecting agricultural majors, the role of agriculture in food security and self-sufficiency had the highest impact and importance. Other factors in this regards were respectively: acquisition B.Sc. degree, achieving to a higher social status, only for entering university, income-generating through agricultural activities, availability of entrepreneurship and self-employment areas in agriculture, and interest toward academic education on agriculture.

In determining relationship between the variables, a significant relationship was observed between the attitude of the female undergraduates towards agricultural discipline and their diploma, place of living (village/city), and father's job. This means that the female students with a natural science diploma who were living in village and their father's job were related to agriculture, were more interested in selecting agriculture as a field of study. These findings are confirmed with the similar results found by Movahedi *et al*. (2007) and Karim-Sesay (2004).

According to the results, the following suggestions can be presented: In Iran, rural and agricultural development has no meaning without the participation of rural women, it is thus essential whether public or private sectors plan to invest, apply and gain advantage of potential and actual female graduates in various rural areas.

With attention to the role and the importance of rural women in improving social, economical, and cultural activities of each society, it is recommended that additional training and practical courses be conducted for female agriculture students along with visit and stay in rural regions.

Since education in agriculture needs the ability to observe and understand actual values of phenomena as well as strong experience in agriculture, it is therefore recommended a special priority be considered for those who have taken agriculture or natural science diploma. Furthermore, the university entrance examinations for agricultural majors should be taken in such a way that relevant students are selected with good information, competencies and abilities on agriculture. In addition, for those students with background and experience on agriculture a specific policy needs to be made.

Moreover, opportunity to visit and contact with rural and agricultural regions should be provided during both primary and secondary school programs for the students before entering the university.

The female undergraduates' capabilities and abilities on agriculture should be used similar to men in different rural development programs without gender degradation. Accordingly, the achievements and capabilities of female agricultural students and graduates need to be shown more by films, audio-visual aids, internet, agricultural festivals and fairs.

REFERENCES

Bakhshijahromi, A. and G.H. Zamani, 2007. Comparison between Female and Male Students about Education Motivation in Agricultural. Proceeding of the first seminar on higher education in Iran, Allameh Tabatabai University, Tehran, pp: 551-565.

Bogue, P., 2002. The Attitudes of Second Level Students towards a Career in Agriculture. Agri Aware, Dublin:

Dyer, J.E., L.M. Breja and R.J. Andreasen, 1999. Attitudes of college of agriculture freshmen toward agriculture. J. Agric. Educ., 40(2): 1-10.

Gholizadeh, A. and M. Bratali, 2009. Women in higher education and proper use of their capabilities in society. The Proceeding of Third Biannual Conference on Employment and the Country's Higher Education System, Tehran, 14-15 May 2007, pp: 703-717.

Hamdhaidari, S., H. Agahi and A. Papzan, 2008. Higher education during the Islamic government of Iran (1979-2004). Inter. J. Educ. Dev., 28(3): 231-245.

Hejazi, Y., M. Hashemi and I. Malek Mohammadi, 2008. Iranian agricultural graduates and agri-business ventures. American-Eurasian J. Agric. Environ. Sci., 4(3): 311-317.

Karim-Sesay, P.A.N., 2004. A Vested Interest Approach to the Understanding of Agriculture and Environmental Attitudes in the State of OHIO. PhD dissertation, The Ohio State University.

Mohtashami, B., 2005. Outlets of Improving Women's Status in Higher Education. 4th Edn., Institute of Planning and Research in Higher Education, Tehran.

Movahedi, R. and M. Chizari 2006. Study on attitude and perceptions of agricultural undergraduates of Bu Ali Sina University toward agriscience. 22nd Annual Conference Proceedings of AIAEE, Florida, US, pp: 42.

Movahedi, R., M. Chizari and O. Norouzi, 2007. Comparing the attitude of students (Islamic Azad University and public university) towards agriculture in Lorestan and Hamedan provinces. Agric. Sci., 13(3): 533-545.

Osborn , E.W. and J. Dyer, 2000. Attitudes of Illinois agri-science students and their parents toward agriculture and agricultural education programs. J. Agric. Educ. Extension, 41(3): 50-59.

Peiter, R.L., D. Coffey, J.A. Morgan and A. Kantrovich, 2004. University freshmen attitudes regarding decisions to attend university programs of agriculture in Kentucky. J. Southern Agric. Educ. Res., 207-218.

Rajabi, A. and B. Ashrafi, 2002. Global approaches of higher education in new era. The Proceeding of 47th Meeting of University and Research Centers' Deans, Isfahan, pp: 191-169.

Surmeli, H. and F. Sahin, 2010. Examination of university students' attitudes towards biotechnological studies in terms of faculty and gender variables. Procedia Soc. Behav. Sci., 2: 3999-4005.

Zarifian, S. and H. Shariatzade, 2001. Review and compare attitude of freshmen and senior students of Tehran University towards agricultural major. J. Agric. Sci., 32(4): 703-717.