

Full Length Research Paper

Entrepreneurial competencies of agricultural students: The influence of entrepreneurship courses

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The purpose of this study was to investigate the influence of entrepreneurship courses on entrepreneurial competencies of agricultural students. A survey was conducted among 90 students that included 30 students who participated in entrepreneurship courses, 30 students who were friends of entrepreneurship courses participants, and 30 students who were outside of this community. Data were collected by use of a questionnaire and were analyzed descriptively and inferentially using SPSS for Windows, version 11.5. The descriptive statistics included frequencies, percentages, means and standard deviations, while inferential statistics included F-test, Kruskal–Wallis and so forth. The study revealed that there were significant differences between entrepreneurial competencies of agricultural students who had participated in entrepreneurship courses and those who had not participated. Therefore, it was recommended that universities as a motor for change offer entrepreneurship courses for all students.

Key words: Entrepreneurship, student, business, agriculture, competency.

INTRODUCTION

At the global level, the reduction of trade barriers, with the advancements in technology and transportation, all combine to provide more opportunities, as well as more uncertainty in the world and unemployment for young people remains at high levels around the world (Ahwireng-Obeng, 2002). There is no doubt that the agricultural sector, no less than any other, is facing a range of old and new challenges such as population growth, increased market complexity and continuing economic inequality.

The same scenario regarding unemployment especially in the agricultural sector is going in Iran. Over the 10 years, as a result of population growth, for the public demand to responded, the model of higher education in Iran changed from market-demand to social-demand, leading to an influx of student enrolled in higher education. The consequence of this policy was emerging disequilibrium between supply and demand sides of the

market place, resulting in the unemployment growth among higher education graduates.

Unemployment crisis will affect all economical, social and cultural aspects of a society and sometimes will be source of irremediable bad effects. As a result, entrepreneurship is seen as the new forces worldwide (Lalkaka and Abetti, 1999). And the significance of entrepreneurship in creating wealth and in the development of society has been emphasized by many researchers (Schumpeter, 1934; McClelland and Winter, 1969; Kirzner, 1985; Low and MacMillan, 1988; Singh, 1989; Kirchoff, 1991; Shaver and Scott, 1991; Kirchoff and Acs, 1997).

Fostering entrepreneurship among students has become an important topic in universities as well as in researches. As a number of studies show, student interest in entrepreneurship as a career choice is growing (Brenner et al., 1991, Fleming, 1994; Kolvereid, 1996), while interest in professional employment in businesses is declining (Kolvereid, 1996). Since many researches have evaluated the importance of entrepreneurial competencies in connection with successful start-up and survival in business (Bird, 2002; Onstenk, 2003), for

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moving towards the entrepreneurial society it is imperative to have entrepreneurship competencies.

During the last decades, many entrepreneurship courses offered by different countries (Robinson and Haynes, 1991; Vesper and Gartner, 1997; Hisrich and Peters, 2002; Koch, 2003; Binks et al., 2006) and by Iran, too. Entrepreneurship education programs stakeholders need to assess the impact of these programs (Hytti and Kuopusjärvi, 2004; Pihkala and Miettinen, 2004). On the other hand, there is a lack of research regarding the outcomes of entrepreneurship education (Block and Stumpf, 1992; Garavan and O'Connell, 1994; Honig, 2004). Therefore, this study attempts to investigate the influence of entrepreneurship courses on entrepreneurial competencies of agricultural students. Towards this purpose, the special objectives of the study were to investigate:

1. Demographic information of agricultural students
2. Agricultural students' entrepreneurial competencies;
3. Mean scores comparison of agricultural students' entrepreneurial competencies.

Different entrepreneurial competencies were cited by researchers (Marx et al., 1998; Timmons, 1999; Hellriegel et al., 2001; Bird, 2002; Hisrich and Peters, 2002; Man et al., 2002; Lindsay and Craig, 2002; Thompson, 2003; Kuratko, 2003; Onstenk, 2003; Honig, 2004; DeTienne and Chandler, 2004; Stoof, 2005; Alvarez and Barney, 2006). The hypothesis to be tested in this study is the following: The participants in entrepreneurship courses will have a different level of entrepreneurial competencies than non participants.

MATERIALS AND METHODS

Sample

In this study, the total sample size was 90 agricultural students that included 3 different groups of 30 each. Two groups of 30 each were selected from Tehran University (group 1: participant in entrepreneurship courses and group 2: non participant in entrepreneurship courses and friends of group 1), and third group (control group) was selected from Gilan University. An important principle of impact evaluation design is selection of a control group (Bamberger et al., 2004). In this case, group 2 had not had the opportunity to participate in entrepreneurship courses but they had close contact with group 1 and also they were from Tehran University. And at the last part, a control group was selected from a different university that had not participated in any entrepreneurship courses and had not been exposed to those who had participated in entrepreneurship courses. The aim of selection of this group was to compare entrepreneurial competencies of this group with that of second group to understand whether first group's entrepreneurial competencies has spread to second group. The sample was selected by using random sampling method.

Instrumentation

Data were collected from agricultural students (the target group) by means of a questionnaire. The first section of questionnaire contained demographic characteristics of respondents and the

remaining sections consisted questions related to research objectives. For determining the validity of questionnaire, content and face validity were tested by a panel of experts consisting of faculty members at colleges of agriculture in Tehran University. Instrument reliability was estimated by calculating Cronbach's alpha coefficient. Reliability coefficient for the entrepreneurial competencies scale was 0.88, indicating high level of reliability.

Data analysis

Data were analyzed descriptively and inferentially using SPSS (Statistical Package for Social Science) for Windows, version 11.5. The descriptive statistics included frequencies, percentages, means and standard deviations, while inferential statistics included F-test, Kruskal-Wallis and so forth.

RESULTS AND DISCUSSION

Demographic information of respondents

Distributional pattern of gender and age of the sampled population are provided in Figure 1. Comparisons of 3 groups on gender and age indicated no significant differences among the groups on gender and age. Also, there were no significant differences among the three groups on agricultural experience, their father's employment status, their mother's employment status, and that any of their relatives created his/her own business. Taking into consideration these features can cause researchers to judge among groups of students correctly.

Students' entrepreneurial competencies

Mean scores for items comprising assessment of entrepreneurial competencies of respondents are shown in Table 1. The mean entrepreneurial competencies scores of entrepreneurship courses participants, non entrepreneurship courses participants and control group were 35.07, 30.48 and 29.26 respectively. Looking at the means, we see that the mean score of group 1 is more than the other two groups. The standard deviations were relatively low. This confirms a low deviation from norm, and signifies a normal distribution in the sampling.

Mean scores comparison of students' entrepreneurial competencies

Tables 2 and 3 show that there were significant differences among groups' total entrepreneurial competencies. A statistically significant difference was found between the entrepreneurship courses participants and non entrepreneurship courses participants (group 1 and group 2, group 1 and group 3). Also, there was very little diffusion of entrepreneurial competencies from participants to other community members (group 2). Mean scores for items, X1; X2; ... and X10 (Table 4), shows that there were no significant differences among the three

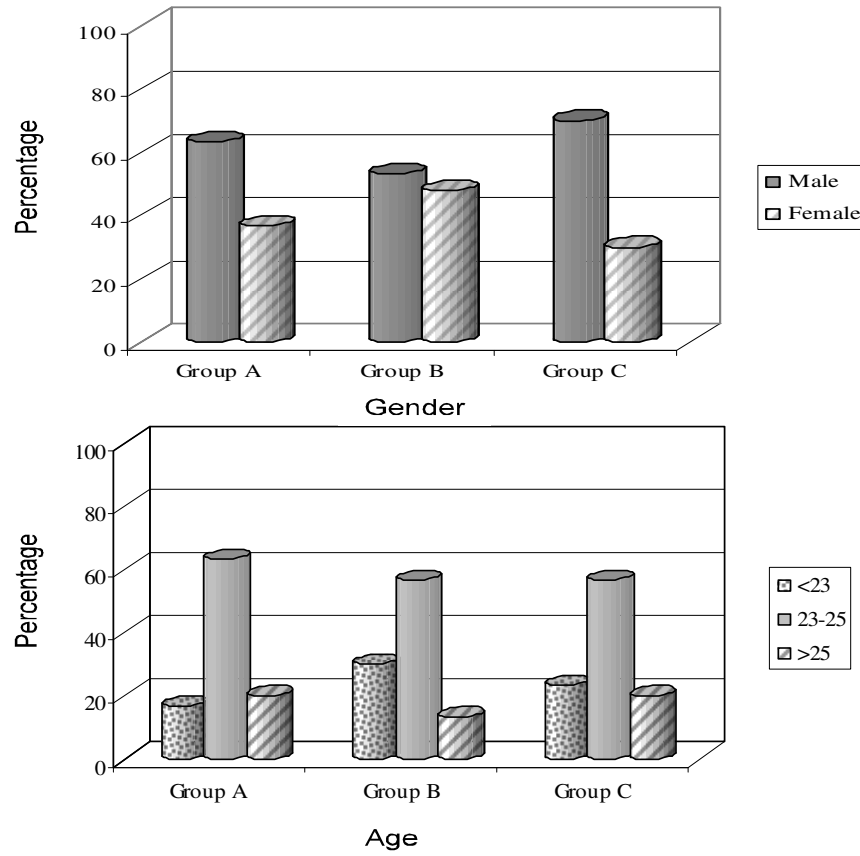


Figure 1. Respondents' gender and age by participating in entrepreneurship courses.

Table 1. Mean scores for items comprising assessment of entrepreneurial competencies of all respondents.

| Item | Group 1 | | Group 2 | | Group 3 | |
|-----------------------------------------|---------|------|---------|------|---------|------|
| | Mean | SD | Mean | SD | Mean | SD |
| Innovative thinking (X1) | 3.48 | 0.98 | 2.95 | 0.87 | 2.86 | 0.59 |
| Risk taking (X2) | 3.18 | 0.70 | 3.15 | 0.88 | 3.12 | 0.82 |
| A different view of the market (X3) | 3.96 | 0.98 | 3.41 | 0.89 | 3.37 | 0.83 |
| Identifying business opportunities (X4) | 3.79 | 0.51 | 3.19 | 0.85 | 2.81 | 0.62 |
| Evaluation business opportunities (X5) | 3.72 | 0.75 | 3.00 | 0.82 | 2.54 | 0.58 |
| Decision making (X6) | 3.24 | 0.53 | 2.61 | 0.67 | 2.75 | 0.66 |
| Human relations abilities (X7) | 3.50 | 0.70 | 2.98 | 0.57 | 3.03 | 0.63 |
| Problem solving (X8) | 3.20 | 0.46 | 2.89 | 0.68 | 2.90 | 0.82 |
| Marketing (X9) | 3.59 | 0.64 | 3.23 | 0.74 | 2.84 | 0.79 |
| Dealing with failure (X10) | 3.37 | 0.60 | 3.04 | 0.42 | 3.00 | 0.57 |
| Total | 35.07 | 2.81 | 30.48 | 3.53 | 29.26 | 2.27 |

the three groups on risk taking and problem solving. Perhaps one explanation for this result is that these two competencies diffused very abstract to entrepreneurship courses participants. A statistically significant difference was found between group 1 and group 2, and group 1 and group 3 on identifying business opportunities and evaluation business opportunities. Also, a statistically

significant difference was found between group 2 and group 3 on identifying business opportunities and evaluation business opportunities. To describe this finding, we can say there was little diffusion from participants to other community members (group 2). There was no significant difference between group 1 and group 2 on marketing. But there was significant difference between

Table 2. Analysis of variance (ANOVA) of entrepreneurial competencies among three groups.

| Source of variance | Sum of Squares | df | Mean square | F | Sig. |
|--------------------|----------------|----|-------------|--------|-------|
| Between Groups | 562.885 | 2 | 281.442 | 32.935 | 0.000 |
| Within Groups | 743.453 | 87 | 8.545 | | |
| Total | 1306.338 | 89 | | | |

Table 3. Comparison of mean difference entrepreneurial competencies among three groups.

| Attendance (I) | Attendance (J) | Mean difference (I-J) | Std. error |
|----------------|----------------|-----------------------|------------|
| Group 1 | Group 2 | 4.5885(*) | 0.75 |
| Group 2 | Group 3 | 1.2205 | 0.75 |
| Group 3 | Group 1 | -5.8090(*) | 0.75 |

significant at $P < .05$

Table 4. Comparison of scores means differences X1, X2 ... ,X10 entrepreneurial competencies of three groups.

| Attendance (I) | Attendance (J) | Mean difference of X1 (I-J) | Mean difference of X2 (I-J) | Mean difference of X3 (I-J) | Mean difference of X4 (I-J) | Mean difference of X5 (I-J) | Mean difference of X6 (I-J) | Mean difference of X7 (I-J) | Mean difference of X8 (I-J) | Mean difference of X9 (I-J) | Mean difference of X10 (I-J) |
|----------------|----------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|
| Group 1 | Group 2 | 0.5333(*) | 0.0267 | 0.5500(*) | 0.6000(*) | 0.7238(*) | 0.6333(*) | 0.5259 (*) | 0.3095 | 0.3600 | 0.3259(*) |
| Group 2 | Group 3 | 0.0900 | 0.0267 | 0.0444 | 0.3762(*) | 0.4619(*) | -0.1400 | -0.0519 | -0.0143 | 0.3867 (*) | 0.0407 |
| Group 3 | Group 1 | -0.6233(*) | -0.0533 | -0.5944(*) | -0.9762(*) | -1.1857(*) | -0.4933(*) | -0.4741(*) | -0.2952 | -0.7467(*) | -0.3667(*) |

group 1 and group 3, and between group 2 and group 3 on marketing. To describe this finding, we can say there was enough diffusion from participants to other community members (group 2).

According to the study done by Fayolle (2002), entrepreneurship education influenced both the current behavior and future intentions of students. Teixeira (2007) also indicated that more successful entrepreneurs could result if they were better targeted by the education system and then nurtured accordingly.

Conclusion

Entrepreneurship is recognized as a growing field of interest. Several factors seem to have contributed to the increasing interest in this field such as economic turbulences; high unemployment rates and fluctuation in international trade cycles that many industrialized countries have suffered in the last decades. The same scenario is regarding agricultural sector. In Iran different entrepreneurship courses offered to students as a source of future entrepreneurs. But there is a lack of research regarding the effectiveness of these courses. Accordingly,

this investigation attempted to assess the effectiveness of entrepreneurship courses to increase agricultural students' entrepreneurial competencies. The study confirmed that entrepreneurship courses had positive influence on their participants and there were significant differences between entrepreneurial competencies of agricultural students who had participated in entrepreneurship courses and those who had not participated. Therefore, it is recommended that universities as a motor for change offer entrepreneurship courses for all students.

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