Explaining Entrepreneurial Intention among Agricultural Students: Effects of Entrepreneurial Self-efficacy and College Entrepreneurial Orientation

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ABSTRACT
The importance of entrepreneurship to economic and social development is widely debated and acknowledged. Corporate employment has been faced by growing unemployment and disenchantedment in the most developing countries such as Iran country, therefore more policy makers and scholars are turning to entrepreneurship and self employment as a solution to student unemployment. Entrepreneurial orientation of higher education institutions has the potential to change motivations, attitudes and focus not only in a student’s capabilities but also in career orientation. Colleges therefore provide a window of opportunity for students to perceive entrepreneurial activities more feasible and desirable. This study aimed at explaining the entrepreneurial intention among agricultural students with the antecedents of entrepreneurial self efficacy and college entrepreneurial orientation. Statistical sample (n = 144) included agricultural students of Ahvaz University from Iran country which were selected with using random sampling method. Results of zero order Pearson correlation analysis showed positive and significance relationships between Entrepreneurial Self Efficacy (ESE) (r = 0.53, p<0.01) and College Entrepreneurial Orientation (CEO) (r = 0.25, p<0.01) antecedents with entrepreneurial intention among agricultural students. Also, results of structural equation modeling indicated that, Entrepreneurial Self Efficacy (ESE) had more contribution on explaining Entrepreneurial Intention (EI) than College Entrepreneurial Orientation (CEO) among agricultural students (β = 0.40, p<0.001). Finally, it is recommended that the inextricable link between innovative learning environment and upgrading self efficacy beliefs in the six main components, should be strengthened through regular educational and administrative policy makings to foster entrepreneurial self efficacy and spirit among university graduates.

Key words: Entrepreneurial intention, Entrepreneurial self efficacy, College entrepreneurial orientation, agricultural students

INTRODUCTION

Today, entrepreneurial concepts and behaviors converted to the global agenda for facilitating economic growth and increasing National Gross Product in (NGP) the most countries. According to Timmons (1999), the contribution of entrepreneurship to economic development of countries, will be assessed by creating employment activities, innovation and creativity. Generally, the importance
of entrepreneurship to economic and social development is widely debated and acknowledged. Research has long shown that upgrading entrepreneurial activities results in economic prosperity in the most developing countries. During the last century, most developing countries, including Iran, have been faced by unbalanced growth of population, lack of economic improvement, government policies aimed at downsizing the structure, increasing graduates and the inability of private sector to create targeted job market for different graduates. All these conditions lead to turning toward entrepreneurship especially entrepreneurship education in higher education institutions. Through proper training methods, universities can train students for developing business units and increasing self-employment opportunities. In this regard, colleges and universities can work as facilitator factors (Ibicioglu et al., 2008). Higher education institutions can support their graduates to cope with these changes, through introduction of entrepreneurship research and educational programs (Wallace and Nilsson, 1997). However, effective measures for supporting entrepreneurship education have been taken in the Iranian country but it seems that with the importance of the issue, the measures taken are not sufficient and leads to different problems and challenges at least for the next decade. Also, the graduates of universities are seeking employment opportunities in the government positions rather than participating in the entrepreneurial activities. In other words, there is the gap between the expectations of government about student's performance with the actual level of student's involvement in entrepreneurial activities. Behavior and decision making of students for participating in the entrepreneurial activities can be addressed by their entrepreneurial intentions. The importance of entrepreneurial intentions as predictors of planned behavior (such as establishing business ventures) have been emphasized in the recent years (Krueger et al., 2000). Bagozzi et al. (1989) emphasized on the role of entrepreneurial intentions as the best predictors of planned behavior patterns. Also, intention provide the main conduit to better understand of behavior (Ajzen, 1991). In other words, intention as the dependent variable of motivational factors such as desirability and feasibility factors, influence the entrepreneurial behavior. In a meta-analysis by Kim and Hunter (1993), results showed that attitudes successfully predict intentions and intentions successfully predict behavior. With reviewing entrepreneurial literature, one can observe that the prediction of the entrepreneurial intention and behavior through single modeling of personality or demography characteristics resulted in low explanatory power on analyzing the outcomes of entrepreneurial intention models. For example, Krueger et al. (2000) stressed that intentions predict the entrepreneurial process better than personality and situational factors and strong intention to start an entrepreneurial business lead to the ultimate attempt, even if the present conditions delay or interrupting the process. Based on the review of related literature about factors affecting the entrepreneurial process, creating and maintaining an entrepreneurial activity is the function of the combined effects of individual factors, such as competence and motivation of the entrepreneur and situational factors, such as entrepreneurial environment. Although, situational and contextual factors have a significant effect on entrepreneurial activity but the entrepreneurship event is made up of individuals. Therefore, individual differences are considered indispensable elements on explaining entrepreneurial intention and behavior in the entrepreneurship studies. For example, individual difference factors, include past work experience, need to achievement, locus of control, and high social skills (Luthans and Ibrayeva, 2006). However, studies examined the characteristics of entrepreneurs have not developed a coherent and objective results. Therefore, factors such as decision making based on intention, work activities and evaluate the situation logically, should be further investigated. One of the most important constructs in connection with decision making based on intention is entrepreneurial self efficacy (ESE) (Chen et al., 1998). Self efficacy is the focal point of social learning theory that lead to explain individual behavior through
mutual relationships among the personal characteristics and environmental and behavioral factors (Chen et al., 1998). Self efficacy belief construct suggested the first time by Bandura (1977), to explain human behavior and defined as the individual belief about her/his ability to organize and implement the operational units to achieve specific objectives. Self efficacy factor include both the an individual belief about own competency and believe that the successful measures result in specific outcomes (Bandura, 1977; Tsang, 2001). Among the personal and environmental factors, self efficacy factor is an important antecedent of entrepreneurial intentions, because it is effective on career selection and development (Chen et al., 1998). However, few studies have examined the relationship between self efficacy factor and entrepreneurial intention. According to study of Krueger et al. (2000) perceived self efficacy has a significant effect on entrepreneurial feasibility and lead to entrepreneurial intention. Because perceived feasibility increase self efficacy, individual self efficacy beliefs concerning the implementation of the necessary activities toward entrepreneurship, positively affect the entrepreneurial intention. Based on the previous research, entrepreneurial self efficacy belief lead to increased intention of establishing new business. For example, results of Chen et al. (1998), among 140 graduate students showed a positive and significant relationship between entrepreneurial self efficacy perception included entrepreneurial skills of marketing, innovation, management, financial control and risk propensity with entrepreneurial intention. Similarly, another study showed that self-evaluation (self efficacy) ability has direct effects on creating entrepreneurial business (Chandler and Hanks, 1994). De Noble et al. (1999), among 272 students found that the positive and significance relationship between entrepreneurial self efficacy perceptions included risk management, innovation and product improvement, interpersonal and network management, opportunity recognition, developing and maintaining the innovative business environment with entrepreneurial intention. The influence of academic environments such as college entrepreneurial orientation on career choice has generally ignored (Kaufman and Feldman, 2004). Participation level of students and opportunity to involvement in entrepreneurial activities is determined by characteristics of their educational institution (Lent et al., 2000). Moreover, educational institution orientation is effective on career interests, intentions, choices and action (Porter, 2006). Entrepreneurial orientation of one institution such as academic institution made up three factors of innovativeness, proactiveness and risk taking. Risk taking factor of one educational institution associated with the desire to applying new activities and probably unfamiliar areas (about educational goals, methods and so forth), (Covin and Slevin, 1991). Innovativeness factor of educational institution is related to creating ideas, services and new methods of teaching and learning. Proactiveness aspect of one institution emphasis on prediction and taking preventive and innovative measures for future educational activities (Lumpkin and Dess, 1996). In fact, supportive environment of one educational institution increase students self efficacy perceptions and their participation in entrepreneurial activities. Therefore, the main purpose of this study was to explore the effects of entrepreneurial self efficacy and college entrepreneurial orientation on forming entrepreneurial intention among agricultural students. Conceptual framework of this study, presented in the Fig. 1.

Fig. 1: Conceptual framework of study
MATERIALS AND METHODS

In this study, a cross-sectional survey design used with applying questionnaire as the main research instrument. Analysis unit of this study consisted of students of agriculture and natural resources university of Ahvaz in the first semester of 2010-2011. Statistical sample based on the Morgan table, included 144 agricultural students in the field of agricultural extension and education from the statistical population of 240 which were selected by applying random sampling method. Agricultural extension and education students, because of conceptual and practical proximity to the principles of entrepreneurial activities were selected. In this study the structured questionnaire used to gather required data. Based on the descriptive results, from one hundred and forty four (144) students, 40 (27.7%) were male students and 104 (72.3%) were female students. For analyzing data, zero-order Pearson correlation analysis and a two-step Structural Equation Modeling (SEM) procedure was employed to establish construct validity and test the relationships of Entrepreneurial Self Efficacy (ESE) and College Entrepreneurial Orientation (CEO) with Entrepreneurial Intention (EI) among agricultural students. SEM is an a priori technique, meaning that the researcher must specify a model in order to conduct the analysis (Kline, 2005). In SEM parameters are estimated by minimizing the difference between the observed covariances and those implied by the model. In the present study, LISREL software was used to test the relationships of Entrepreneurial Self Efficacy (ESE) and College Entrepreneurial Orientation (CEO) with Entrepreneurial Intention (EI) among agricultural students. The estimation method employed was Maximum Likelihood (ML). A total of 130 questionnaire were answered. Therefore, 130 questionnaires were considered for statistical analysis (Response rate: 93.7%). Generally, self efficacy perception is defined as the belief about the ability of implementing entrepreneurial activities in connection with the evaluation of managerial, functional and technical capabilities. To assessing the ESE, two different scales in the preceding entrepreneurship studies have been developed. First scale developed by Chen et al. (1998), measure the marketing, innovation, management, risk taking and financial control skills. The second scale, after discussion with the entrepreneurs, developed by De Noble et al. (1999) and included 35 items. This scale measure the six main components of ESE construct. These dimensions are as follow: ESE$_1$-Skills related to opportunity recognition, ESE$_2$-Building an innovative environment, ESE$_3$-Mission and vision creation, ESE$_4$-Skills to cope with risky situations, ESE$_5$-Skills to employ and develop human resources and ESE$_6$-Skills related with obtaining funds. This scale because of positive results of confirmatory factor analysis and its frequent use in the previous research used in this study to measure ESE construct. For example, in the study of De Noble et al. (1999), the all components of this construct confirmed by factor analysis. Items were measured on the Five-point Likert type scale (From 1, strongly disagree to 5, strongly agree). Entrepreneurial intentions of students were measured by using three statements as follow: EI$_1$-Immediately after graduation, I will create a business, EI$_2$-Sometimes I think, I have a business in the future and EI$_3$-I will create business if I fail to obtain the governmental job (corporate employment). These three items obtained after reviewing the entrepreneurial intention literature on students, to measure agricultural students' intention in the short term (after graduation) and long term (in the future) and also assessing their desire to move about corporate employment. For measuring College Entrepreneurial Orientation (CEO), with taking into account the components of innovativeness, proactiveness and risk taking, four items were used. These items were: CEO$_1$-My college keeps it's competition with other higher education institutions, CEO$_2$-In my college, many changes have been taken over the syllabuses and structured activities in the past years, CEO$_3$-In my college, new training methods and new
curricula topics are encouraged and CEO's. My college provides entrepreneurship education programs. For determining the reliability of constructs, Cronbach's alpha used. The results of reliability test showed in the Table 3.

RESULTS

To analyzing the relationships between Entrepreneurial Self Efficacy (ESE), College Entrepreneurial Orientation (CEO) and Entrepreneurial Intention (EI) among agricultural students, the zero-order Pearson correlation analysis was used. Results of correlation analysis for inter-correlations among all variables of study showed in the Table 2. According to results of Table 1, there is positive and significant relationship between variables of corporate employment and seeking entrepreneurial careers in the future among agricultural students (r = 0.810, p<0.01). As showed in the Table 1, variables of corporate employment and seeking entrepreneurial careers in the future have not significant relationships with seeking entrepreneurial careers after graduation among agricultural students.

According to results of Table 2, entrepreneurial intention has positive and significant relationships with entrepreneurial self efficacy (r = 0.53, p<0.01) and college entrepreneurial orientation (r = 0.25, p<0.01) among agricultural students. However, the correlation between entrepreneurial intention and entrepreneurial self efficacy was more than college entrepreneurial orientation among agricultural students. Also, it should be noted that college entrepreneurial orientation have positive and significant relationship with entrepreneurial self efficacy (r = 0.23, p<0.01) among agricultural students. In order to test whether Entrepreneurial Self Efficacy (ESE), College Entrepreneurial Orientation (CEO) and Entrepreneurial Intention (EI) constructs differed by gender among agricultural students, we conducted independent t-test with gender as the independent variable and constructs of EI, ESE and CEO as the dependent variables. Results revealed not significant difference between genders on three constructs. However, males reported higher scores on EI (mean = 11.21) than females (mean = 10.55). Also, males had higher scores on CEO (mean = 8.40) than females (mean = 8.11) and reported higher scores on ESE (mean = 14.92) than females (mean = 14.70).

Table 1: Mean, standard deviation and inter-correlation of variables of EI construct

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>After graduation</td>
<td>4.13</td>
<td>0.55</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future (Long-term)</td>
<td>4.92</td>
<td>0.66</td>
<td>0.01</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Corporate employment</td>
<td>4.98</td>
<td>0.66</td>
<td>0.029</td>
<td>0.810**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Significant at p<0.01

Table 2: Mean, standard deviation and inter-correlation of constructs of EI, CEO and ESE

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. EI</td>
<td>4.28</td>
<td>1.06</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. CEO</td>
<td>3.80</td>
<td>1.07</td>
<td>0.25**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3. ESE</td>
<td>4.23</td>
<td>0.96</td>
<td>0.53**</td>
<td>0.23**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Significant at p<0.01
The two-step procedure of structural equation modeling proposed by Anderson and Gerbing (1988), was used to test model and hypothesis. For testing construct validity and the dimensionality of the independent and dependent variables, Confirmatory Factor Analysis (CFA) was used. Table 3 describes the result of confirmatory factor analysis conducted on all constructs. As shown, the Cronbach’s alpha value derived for all constructs were all above the recommended value (0.7). The CFA results for overall model Fit were: \( \chi^2 = 189.81, p = 0.00, \chi^2/df = 2.49; CFI = 0.990; NFI = 0.938; IFI = 0.990; RMSEA = 0.030. \) These indices were acceptable (Bollen, 1989). Substantial and significant factor loadings provide evidence of convergent validity (Steenkamp and van Trijp, 1991), with the threshold value of >.50. As shown in Table 3, all of the items loadings were significant and well above the acceptable cut-off-point, signifying the convergent validity of the study variables.

After confirmatory factor analysis, the model was tested using the Structural Equation Modeling (SEM) procedure. The central point in analyzing structural models is the extent to which the hypothesized model fits or adequately describes the sample data (Byrne, 2001). The results for the structural model were \( \chi^2 = 219.7, p = 0.386, \chi^2/df = 2.89, NFI = 0.919, CFI = 0.980, IFI = 0.981, RMSEA = 0.037. \) The overall model Fit was good. An analysis of the data using the structural equation modeling procedure, showed significant effects of Entrepreneurial Self Efficacy (ESE) \( (\beta = 0.40, p < 0.001) \) and college entrepreneurial orientation (CEO) \( (\beta = 0.25, p < 0.001) \) on entrepreneurial intention (EI) among agricultural students. The two independent variables account for 34% of the entrepreneurial intention variance among agricultural students.

**DISCUSSION**

Results of this study, indicated that most agricultural students were agreed to the statements of I will create business if I fail to obtain the governmental job (corporate employment) and “Sometimes I think, I have a business in the future”. Therefore, it can be implied that, there are psychological and practical barriers for agricultural students to start one business immediately after graduation as the results of correlation analysis indicated that the variables of corporate employment and seeking entrepreneurial careers in the future have not significantly correlated with the seeking entrepreneurial careers after graduation among agricultural students (Table 1). Also, entrepreneurial intention correlated significantly with entrepreneurial self efficacy more than
college entrepreneurial orientation among agricultural students ($r = 0.53, p<0.01$). However, few studies investigated the relationship between entrepreneurial self efficacy and entrepreneurial intention among students but positive and significance relationship of entrepreneurial self efficacy with entrepreneurial intention among agricultural students in this study is consistent with the results of Chandler and Hanks (1994), Chen et al. (1998), De Noble et al. (1999) and Krueger et al. (2000). According to Porter (2008), educational institution orientation affects the career interests, intentions, choices and actions among students. Also, based on the three components of academic entrepreneurial orientation (innovativeness, proactiveness and risk taking), one educational institution associated with the desire to applying new activities and probably unfamiliar areas, new methods of teaching and learning and taking preventive and innovative measures for future educational activities. In fact, college entrepreneurial orientation has positive and direct effects on students’ entrepreneurial self efficacy and their attitudes towards entrepreneurship. Results of Table 2, indicated that college entrepreneurial orientation has positive and significant relationship with entrepreneurial self efficacy among agricultural students ($r = 0.28, p<0.01$). Interestingly, results of independent t-test, revealed not significant difference between gender on the three constructs of Entrepreneurial Self Efficacy (ESE), College Entrepreneurial Orientation (CEO) and Entrepreneurial Intention (EI) among agricultural students. This result can be translated in to the declining difference of genders on the entrepreneurial intentions and increase in the their perceived ability levels on six dimension of entrepreneurial self efficacy. Results of the structural equation modeling procedure, showed significant effects of Entrepreneurial Self Efficacy (ESE) and College Entrepreneurial Orientation (CEO) on Entrepreneurial Intention (EI) among agricultural students. However, entrepreneurial self efficacy (ESE) had more contribution on explaining entrepreneurial intention (EI) than college entrepreneurial orientation (CEO) among agricultural students ($\beta = .40, p<0.001$). Entrepreneurial orientation of one higher education institution has the potential to change motivations, attitudes and focus not only in a student’s capabilities but also in career orientation. Therefore, Colleges should provide a window of opportunity for students to perceive entrepreneurial activities more feasible and desirable.

CONCLUSION AND RECOMMENDATIONS

In this study, the effects of Entrepreneurial Self Efficacy (ESE) and College Entrepreneurial Orientation (CEO) antecedents on explaining Entrepreneurial Intention (EI) among agricultural students were investigated. Results indicated that, there are psychological and practical barriers to start one business immediately after graduation among agricultural students. Results of correlation analysis and structural equation modeling procedure showed entrepreneurial intention has more correlation with entrepreneurial self efficacy than college entrepreneurial orientation among agricultural students and college entrepreneurial orientation has positive and significant relationship with entrepreneurial self efficacy among agricultural students ($r = 0.23, p<0.01$). Also, results of confirmatory factor analysis (CFA, Table 3), showed that statement*: CEO*,“My college keeps it’s competition with other higher education institutions, as the proactiveness and innovativeness component of academic entrepreneurial orientation, gained lowest standardized factor loading among four variables of measuring College Entrepreneurial Orientation (CEO) among agricultural students. Therefore, it is recommended that because college entrepreneurial orientation has positive and direct effect on students entrepreneurial self efficacy and their attitudes towards entrepreneurship, colleges should provide a window of opportunity for
students to perceive entrepreneurial activities more feasible and desirable through establishing targeted educational structures toward institutionalizing entrepreneurial education programs in the educational methods and goals. According to the results of Confirmatory Factor Analysis (CFA), variables of ESE1-Skills related to opportunity recognition and ESE2-Building an innovative environment gained most standardized factor loading among six dimension of measuring entrepreneurial self efficacy students. But variable of ESE3-Skills related with obtaining funds gained standardized lowest factor loading among six dimension of entrepreneurial self efficacy among agricultural students. Therefore, it can be concluded that the skills of establishing investment relationships needs to strengthen by academic institution among agricultural students. Finally, it is recommended that the inextricable link between supportive learning environment and upgrading self efficacy beliefs in the six main components, through regular educational and administrative policy makings should be buttressed to foster entrepreneurial self efficacy and spirit among university graduates.

REFERENCES