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The Effect of Entrepreneurship Education on Entrepreneurial Intentions of University Students

Mehdi Jannati[1]*

1. Master's degree, new business management department, entrepreneurship orientation, Sari branch, Islamic Azad University, Sari, Iran. (Corresponding Author). Email: M.jannati1174@gmail.com

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ABSTRACT

The purpose of this research is to investigate the effect of entrepreneurship education on the entrepreneurial intentions of Islamic Azad University students in Mazandaran province. This is an applied research with a quantitative (comparative) approach conducted through a descriptive survey using standard questionnaires. The statistical population included all management students of Islamic Azad Universities in Mazandaran province, numbering 2565 people according to the statistics. A sample size of 335 was obtained from Cochran's formula, the individual members of which were selected using convenience random sampling. For measurement of the variables, we made use of the standard questionnaire developed by Xu and Lee et al (2022). Validity of the questionnaire was assessed and confirmed by the academic experts. Its reliability, as measured in terms of Cronbach's alpha (= 0.841), was high and thus, confirmed. The obtained survey data for the test of the research hypotheses were analyzed using SEM-PLS technique. The results indicate that entrepreneurship education has a positive and significant effect on the entrepreneurial capacities and entrepreneurial intentions of students. In addition, entrepreneurial capacities have a positive and significant effect on the entrepreneurial intentions of students.

KEYWORDS: Entrepreneurial Capacities, Entrepreneurship Education, Entrepreneurial Intentions Of Students

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1. Introduction

Entrepreneurship is the wheel of a country's economy and the study of factors related to it is always of interest to researchers (Shayesteh et al, 2023). In recent years, the topic of entrepreneurship education has received much attention. The main reason for this is that the increase in the number of entrepreneurs in the society reduces problems such as unemployment, poverty and inappropriate distribution of wealth and also leads to the improvement of the standard of living and regional development (Mokhtari and Kohan Ghaziani, 2002).

Every year, thousands of new businesses are launched in the world, that's why governments and educational centers pay special attention to and make investment in this area. From the academic point of view, there have been many studies on entrepreneurs, but few studies have addressed the entrepreneurial intentions of Iranian students. According to Henderson and Robert's studies, one view is that entrepreneurs are born, and the other view says that entrepreneurs are created over time and according to circumstances. On the other hand, although the development and expansion of entrepreneurship with the help of education has always been associated with challenges, specific research is still in the exploratory stage (Liñán & Fayolle, 2015). However, for the mentioned reasons, increasing attention has been given to entrepreneurship training and the resources allocated to them have accordingly increased. Such measures have also created willingness in investors to enter this field, and as a result, the evaluation of effectiveness and efficiency of these programs is a point of interest to educational institutions, government organizations and investors (Siminpour & Seddighi, 2023).

In the literature, it is also evident that most of the studies conducted in this field are conducted in Western countries. Despite the increasing attention to this topic globally, the number of articles on entrepreneurship education in Asian countries is very low compared to Western countries (Wu & Wu, 2008). In Iran, this topic is reflected in the great emphasis the researchers place on the development of the private sector as well as small and medium-sized enterprises. In recent years, realizing the significant impact of entrepreneurship on the economy, governments have become more engaged in promotion of entrepreneurship, where the introduction of entrepreneurship education into the academic curriculum has become a top educational priority (Nguyen et al, 2020; Hoang et al, 2020). Most of research in the field of entrepreneurship has been focused on the processes of starting a business, which is the next stage to decision-making, as a result of which the decision-making stage is neglected. This is despite the fact that before the start-up stage, the decision-making stage should be strengthened and guided. The reasons that lead a student to choose to start a business from among various job options and immigration at higher education levels are considered at the decision-making stage. According to Moriano and Gorgi Veski (2010), it is more important to ask what factors lead to such decisions than who decides to engage in entrepreneurial behavior. Due to the fact that entrepreneurial activity is a conscious and voluntary action, it can be accurately analyzed by examining the decision-making process for this action (Siminpour & Seddighi, 2023).

In order for this movement to develop in the right direction, a growing need is felt for more research on this topic. In Iran, only a few studies have investigated entrepreneurship education

in terms of entrepreneurial capacities. However, rarely a study has addressed the role of entrepreneurship education in the shaping and development of student entrepreneurial intentions, given the mediating role of student entrepreneurial capacity in the relationship between entrepreneurship education and their entrepreneurial intentions. This study attempts to narrow this gap in domestic research.

2. Theoretical Framework

During the past decades, entrepreneurship has emerged as the main driving force of economic and social progress in many countries of the world and has been a growing interest with many researchers, economists and public policy makers (Pejic Bach et al, 2018). This is evident from the ever increasing number of studies on entrepreneurship education, as appropriate and practical entrepreneurship training is expected to enhance entrepreneurial intentions and behavior among the youth (Hoang et al, 2020). However, the results obtained vary. While the majority of empirical studies show that entrepreneurship education affects entrepreneurial intentions (e.g. Huber et al, 2014; Walter & Block, 2016; Wu & Wu, 2008), there are still some authors who suggest otherwise (e.g. Nabi et al, 2018; Orazalli & Rivenburgh, 2016). There has also been a difference in recent research regarding the nature of the relationship between these two factors, as some researchers suggest that this relationship is indirect and not direct (Nguyen et al, 2023, Le and Vu, 2020; Shuz et al, 2020; Ndofirepi, 2019).

Siminpour and Seddighi (2023) noted that entrepreneurship and innovation training can serve as a solution to the unemployment crisis of higher education graduates in Iran. Mokhtari Bayekolaei and Kohan Ghaziani (2023) found that entrepreneurship education had an indirect and significant effect on entrepreneurial intention through mediacy of entrepreneurial mindset (attitude), and entrepreneurship education indirectly explained 35% of changes in the variable of entrepreneurial intention. Shayesteh et al (2023) found a positive and significant relationship between knowledge management and entrepreneurial self-efficacy, mediated by entrepreneurial leadership. Alayee et al (2023) showed that in Iran Khodro Industrial Group, entrepreneurial capability has a positive and significant effect on clean production and sustainable competitive advantage.

Azma et al (2022) showed that a capability-based approach to academic entrepreneurship can, among others, improve commercialization of academic findings, create growth and technology centers, and create jobs based on the spirit of entrepreneurship among managers, employees, students, and professors. Nguyen and Nguyen (2023) find that student entrepreneurial capacity acts as a partial mediator in the relationship between entrepreneurship education and their entrepreneurial intentions. Zhao et al (2022) suggest that entrepreneurship education has a positive effect on sales revenue of new investment, profit before tax and number of employees.

Stanzin et al (2020) show that learning partially mediates the relationship between entrepreneurial intention and performance. Barba et al (2018) find evidence that confirms the positive effect of entrepreneurship education on entrepreneurial goals. Olugbola (2017) shows that these factors have an impact on their entrepreneurship and that education has led to an

increase in the capacity in the knowledge-based economy and entrepreneurship of students. Based on the above background, the research conceptual model is drawn as follows:

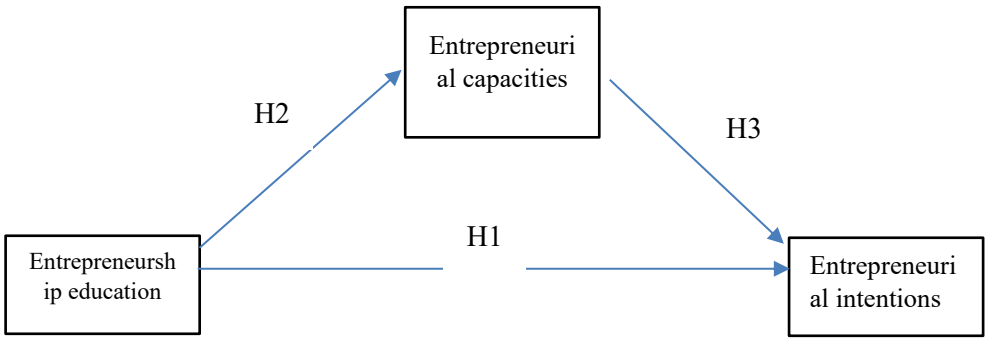

Figure 1. Research conceptual model (Nguyen & Nguyen, 2023)

Hence, the following hypotheses are made:

First hypothesis. Entrepreneurship education has a positive and significant effect on the entrepreneurial intentions of students.

Second hypothesis. Entrepreneurship education has a positive and significant effect on student entrepreneurial capacities.

The third hypothesis. Entrepreneurial capacities have a positive and significant effect on the entrepreneurial intentions of students.

3. Methodology

This is an applied research with a quantitative (comparative) approach conducted through a descriptive survey using standard questionnaires. The statistical population included all management students of Islamic Azad Universities in Mazandaran province, numbering 2565 people according to the statistics. A sample size of 335 was obtained from Cochran's formula, the individual members of which were selected using convenience random sampling. For measurement of the variables, we made use of the standard questionnaire developed by Xu and Lee et al (2022 as detailed in table 1.

Table 1. Features of the research questionnaire

Components	Number of items
Entrepreneurial capacities	**6**
Entrepreneurship education	**9**
Entrepreneurial intentions	**9**

The questionnaire was adapted and validated consulting the supervisor and other professors with expertise and knowledge of the field.

A preliminary test of reliability was performed by distributing the questionnaire among 30 respondents, according to which the obtained Cronbach's alpha for all variables of information sharing level and the whole questionnaire was more than 0.7. Its reliability, as measured in terms of Cronbach's alpha (= 0.841), was high and thus, confirmed.

Next, the obtained data from the whole sample was analyzed in SPSS and the SmartPLS4 software, using structural equation modeling (SEM) technique for PLS.

4. Findings

In this section, the results of confirmatory factor analysis of each research variable by SmartPLS 4 are presented. The strength of the relationship between the latent and observable variable is given by the factor loading. Factor loading is a value between zero and one. If the factor loading is less than 0.4, the relationship is considered weak and is ignored. A factor loading between 0.4 and 0.6 is acceptable, and if it is greater than 0.6, it is very desirable (Klein, 2010). The factor loadings of the research variables were calculated separately as shown in figure 2.

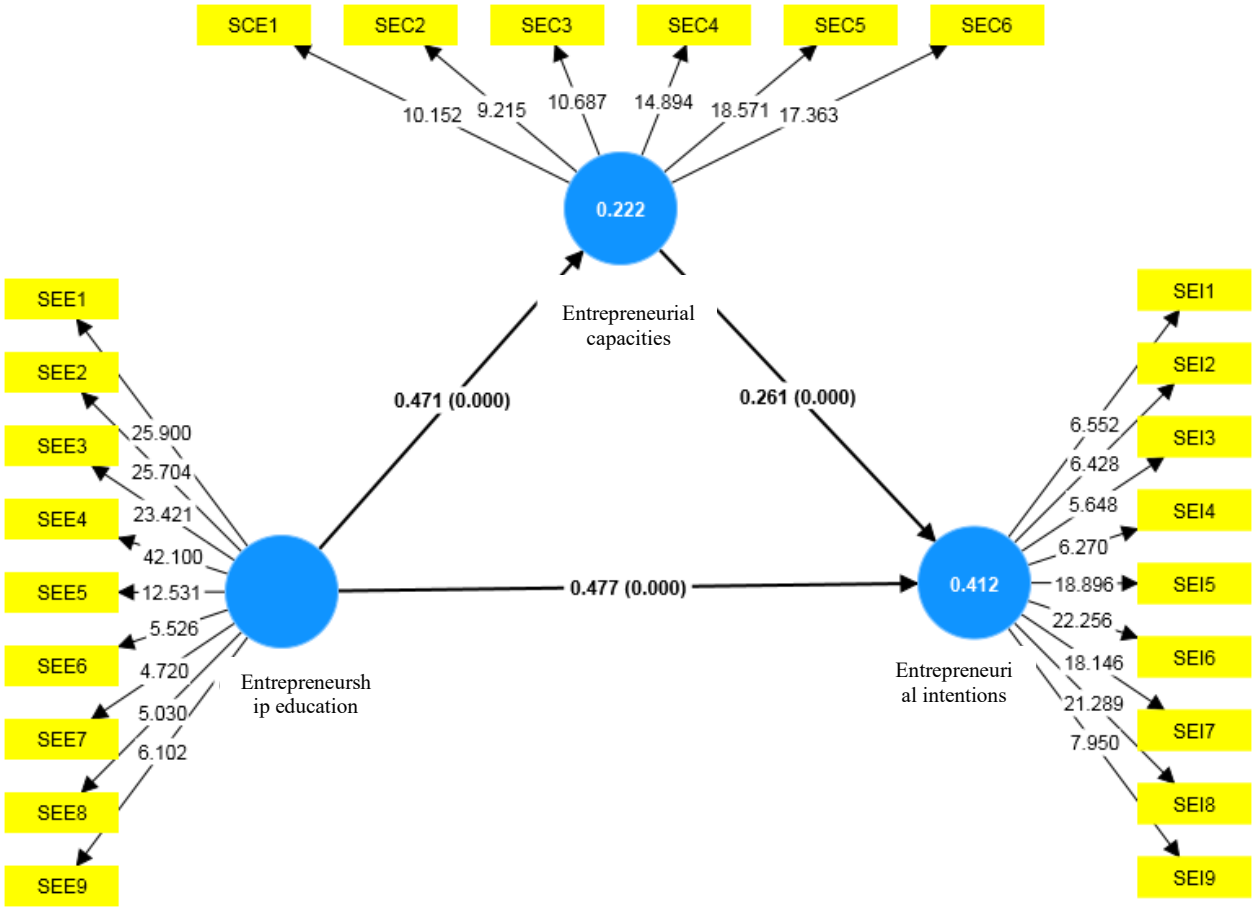

Figure 2. Factor loadings of model components in standard state

As can be seen in the figure above and table 2, in all the model's constructs, factor loadings have values greater than 0.4. Hence, the reliability of measurement models is acceptable. Having measured the factor loadings of the questions, Cronbach's alphas and composite

reliability (Dillon–Goldstein's ρ) were computed, the results of which are reported in the table below.

Table 2. The results of Cronbach's alpha, composite reliability (CR), and convergent validity

Dimension	CR	Cronbach's alpha	Convergent validity (AVE)
Entrepreneurship education	0.845	0.857	0.617
Entrepreneurial capacities	0.789	0.847	0.582
Entrepreneurial intentions	0.844	0.874	0.645

As is seen in the above table the obtained Cronbach's alpha for all dimensions is greater than the threshold of 0.7, hence the research reliability is confirmed.

To test the composite reliability (CR) of each construct, the Dillon-Goldstein coefficient (ρ) is used. The composite reliability reported in table 1 for each construct is greater than the threshold 0.7, hence composite reliability of the constructs are confirmed.

Another criterion in examining the measurement model fit in terms of internal consistency of the constructs is convergent validity which is measured by average variance extracted (AVE). In the table above, the obtained AVE for all constructs is greater than the minimum acceptable value 0.5, whereby the convergent validity of the model is confirmed.

We also use the measure heterotrait-monotrait ratio (HTMT) to assess discriminant validity. If the HTMT value is less than 0.90, there is discriminant validity among the constructs (Henseler et al, 2015).

Table 3. Discriminant validity by HTMT

HTMT	Entrepreneurship education	Entrepreneurial capacities	Entrepreneurial intentions
Entrepreneurship education			
Entrepreneurial capacities	0.485		
Entrepreneurial intentions	0.536	0.522	

Overall model fit

Chen (1998) proposed three values of 0.19, 0.33 and 0.67 as criterion values for weak, moderate and strong R^2 values, respectively, as the indicators of the structural model overall fit.

Table 4. R^2 values

Variable	R^2 value	Adjusted R^2 value	Q^2
Entrepreneurial capacities	0.222	0.220	0.102
Entrepreneurial intentions	0.412	0.409	0.158

The second structural model fit index is the Q^2 index. This measure indicates the predictive power of the model regarding an endogenous construct. As a rule, Q^2 values of 0.02, 0.15 and 0.35 indicate weak, moderate and strong predictive power corresponding to an exogenous construct, respectively. Given the R^2 and Q^2 values, as reported in table 4, the structural model overall fit and predicting power is confirmed.

According to Henseler et al (2014), a standardized root mean squared residual (SRMR) value of below 0.1, and in a conservative case, of 0.08, indicates the model adequate overall fit.

Table 5. The results on the overall model fit using standardized root mean squared residual (SRMR) and NFI index

Estimated model	Saturated model	Latent variables
0.082	0.086	**SRMR**
0.462	0.462	**NFI**
2.017	2.017	**d_ULS**
1.104	1.104	**d_G**

The NFI index, which is called the Bentler-Bonnet index, is a comparative fit index. This index assesses the model by comparing the chi-square values of the independent model and the chi-square of the saturated model. An NFI value above 0.9 is acceptable, indicating the model suitability. Bootstrap provides confidence intervals for the two values discrepancy. Values greater than 0.05 for d_ULS measure (i.e. the Euclidean least square discrepancy) and d_G (i.e. the geodesic discrepancy) indicate good model fit. The obtained d_ULS and d_G values in the above table which are more than 0.05 indicate the model good fit.

By default, PLS4 software tests relationships at the 95% confidence level, and since the t-value at this interval is equal to 1.96, any relationship with a t-value outside the range of -1.96 to +1.96 is considered statistically significant at the 95% confidence interval.

The t-statistic shows the significance of the relationship between the variables. A t-value greater than 1.96 indicates a positive and significant effect; a t-value between -1.96 and +1.96 indicates the lack a significant effect; and a t-value smaller than -1.96 indicates a negative and significant effect. Also, if the path coefficients are above 0.6, it means that there is a strong relationship between the two variables; If it is between 0.3 and 0.6, there is a moderate relationship, and if it is below 0.4, there is a weak relationship. As shown in the model, all the hypotheses of the model are confirmed as their t-value falls outside the specified range, indicating the significance of all hypotheses and relationships between variables at the 95% confidence interval. The results on the test of the research hypotheses are presented in the table below.

Table 6. Results on the test of the hypotheses

Test result	T-value	P-value	Path coefficient	Path	Hypothesis
Accepted	0.000	8.591	0.471	Entrepreneurship education-> Entrepreneurial capacities	**1**
Accepted	0.000	11.848	0.477	Entrepreneurship education-> Entrepreneurial intentions	**2**
Accepted	0.000	4.413	0.261	Entrepreneurial capacities-> Entrepreneurial intentions	**3**

Given the results in the above table, all the research hypotheses are confirmed.

5. Discussion and conclusion

The results indicate that entrepreneurship education has a positive and significant effect on the entrepreneurial capacities and entrepreneurial intentions of students. Also, entrepreneurial capacities have a positive and significant effect on the entrepreneurial intentions of students. These findings imply that entrepreneurship training can be used as one of the solutions to the unemployment crisis of higher education graduates in Iran. And in order to promote entrepreneurship education, it is better to use a combined academic and non-academic training. Today, entrepreneurship has become a national priority as a necessary condition for innovation, creating competition, sustainable economic development, creating jobs, and realizing prosperity worldwide (Aloulou, 2016).

At present, entrepreneurship is acknowledged as a driving force for creating economic and social activities due to its direct effect on the economy and society. New work production processes and automation and remote work services have more or less reduced the role of human resources in this field, but this reduction has not been able to stop the role of human resources in the production process in general, because the trust in automation and remote control is still relative (Siminpour & Seddighi, 2023). This kind of atmosphere, which can be called purgatory between fear and hope and trial and error, has become the basis for discovering the importance of entrepreneurial ideas in humans. Despite the importance of entrepreneurship and innovative activities, their promotion through education has always been associated with many challenges (Liñán, 2015). And the investigations related to its impact, especially on the entrepreneurial intention and behavior of Iranian trainees and students, as the most serious option of entrepreneurship, have remained almost untested. However, the governance organizations and governments for various reasons, including the necessity of maintaining the structure of power management and social controls as well as enjoying the acceptability and legitimacy of the government's public policies, are increasingly turning their attention to the development and growth of entrepreneurial activities. Recently, innovativeness and entrepreneurship are being seen as one of the students' main and favorite emerging fields (Fayolle & Gailly, 2015). Considering that the prerequisite to entrepreneurial behavior is the

intention that leads to the decision to be an entrepreneur and create a new business, decision-making models can be examined. On the other hand, entrepreneurial capacities are essential to perform entrepreneurial activities, therefore, entrepreneurial decisions can be treated from the perspective of entrepreneurial capacities, and as a result, intention-based behavioral models can be well employed to predict it (Siminpour and Seddighi, 2023).

According to the above points and prior research findings, in order to analyze and measure the impact of entrepreneurship education programs on entrepreneurial attitudes and intentions and entrepreneurial capacities, Ajzen's theory of planned behavior provides a valid framework (Aloulou, 2016). Undoubtedly, the use of intention-based models, which are a suitable tool for explaining and interpreting the formation of entrepreneurial activity intentions, helps to measure and examine the effect of entrepreneurship education programs in higher education, both academic and skill-oriented non-academic education, and this provides the possibility of improvement in the design and planning related to it as an opening towards solving the unemployment crisis of higher education graduates (Siminpour and Seddighi, 2023).

Another implication is that Iran, despite being one of the largest oil and gas producers in the world, still needs to diversify the sources of economic models and develop non-oil sectors, considering the emergence of renewable energy sources in the world and the instability of single-product economies based on the export of raw materials and nonrenewable resources, so that new employment opportunities could be provided for the increasing number of educated citizens. This is especially necessary in view of the various international sanctions imposed on the country and its fundamental economic problems such as inflation.

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ETHICAL CONSIDERATION

Authenticity of the texts, honesty and fidelity has been observed.

CONFLICT OF INTEREST

Author/s confirmed no conflict of interest.