



# From entrepreneurial desirability to entrepreneurial self-efficacy: the need for entrepreneurship education—a survey of university students in eight countries

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## Abstract

This paper attempts to contribute to the growing theoretical and empirical literature on entrepreneurial intent among university students. It is argued that entrepreneurial desirability precedes entrepreneurial self-efficacy and measuring it and the relevant factors that may influence it would be valuable, if not a necessity, prior to planning entrepreneurial education in a specific context. The paper used the survey method. Over six thousand students from eight country-branches of a regional university responded. The paper seeks first to assess whether entrepreneurship as an activity is desirable and then find out whether the students support the idea of introducing entrepreneurship education and how they want it to be organised. The level of entrepreneurial desirability and of the call for introducing entrepreneurial education was very high in all countries and all colleges and among both genders. Some factors that may affect entrepreneurial desirability, and which may influence how entrepreneurial education is to be planned, have been identified and tested statistically. These factors are internal; associated with the individual, e.g., educational status and work experience, and external; pertinent to the wider societal context, e.g., gender and employment situation in the country. Entrepreneurial education in universities where the students had no prior exposure to it, it is suggested, is to focus mainly on developing entrepreneurial self-efficacy.

**Keywords** Entrepreneurial desirability · Entrepreneurial self-efficacy · Entrepreneurial education · University students

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## Introduction

The growing global focus on micro, small, and medium enterprises for employment generation at times of increasing global unemployment, especially among the youth, has led to a growing interest in entrepreneurship. Research seeking to comprehend factors influencing entrepreneurial intention aims at informing policy and facilitating action that may stimulate the development of the entrepreneurial activity generally and especially among the young men and women attending higher education.

The paper starts with a discussion of the main constructs applied, efficacy and entrepreneurial self-efficacy based on Social Cognitive Theory, entrepreneurial desirability, based on Shapero and Kreuger, and the role of entrepreneurial education in enhancing entrepreneurial self-efficacy. After presenting a survey on entrepreneurial desirability among the Arab Open University Students, factors relevant to this research that may influence the level of entrepreneurial desirability are introduced and, on their bases, some hypotheses are set and tested. Broad directions of entrepreneurial education to enhancing entrepreneurial self-efficacy are identified and discussed in the last section.

## A brief literature review of the main constructs

### Social cognition theory and efficacy

Social cognition theory (SCT) was developed by Bandura as an expansion of social learning theory (Bandura, 1986). The theory is ‘social’ as it ‘acknowledges the social origins of much human thought and action; the cognitive portion recognises the influential causal contribution of thought processes to human motivation, affect and action’ (p. xii). SCT is a comprehensive theory of human motivation and action emphasising the triadic reciprocal interconnection of personal factors (cognitive, affective and biological), behaviour and environment (social-family, peers, school and others) and physical activity (person’s surrounding and access to resources). Each of these factors influences and modifies the other (Bandura, 1999).

Human agency in SCT refers to intentional action. Intention is a proactive commitment to produce an outcome. Human beings can exercise influence over their own performance. As actions are partly externally determined, the humans can bring change in their conditions and situations through their own exertion (Bandura, 1989).

Self-beliefs of efficacy play a vital factor in the self-regulation and motivation, as motivation is largely cognitively generated (Bandura, 1994). Efficacy expectation is different from outcome expectation. Efficacy expectation is someone’s belief that he or she has the capability to perform the behaviour necessary to bring about the outcome. Outcome expectation is a person’s estimate that a given

behaviour will lead to a certain outcome. Self-efficacy expectations are derived from four main sources: ‘performance accomplishments, vicarious experience, verbal persuasion and physiological states’ (Bandura, 1977, p. 191).

The individual’s perceived self-efficacy as a notion has been extended to a wider societal level perceived collective efficacy, which, Bandura (1982) argues, has a significant role in social change. Bandura (1977) maintains that for self-efficacy to achieve a high predictive power of behaviour, it has to be applied in a specific context. The notion of self-efficacy has been applied in various disciplines and domains including health, education, career choices, communication, organisational management, social change (Bandura, 1977, 1982; Chen et al., 1998; Drnovsek et al., 2010; Lent et al., 1994; Pajares, 1996; Tran & Korfflesch, 2016; Wood & Bandura, 1989).

### Entrepreneurial self-efficacy

Applied to entrepreneurship, the notion of entrepreneurial self-efficacy (ESE) has been viewed as a strong predictor of entrepreneurial intention or behaviour and of the commitment to produce the outcome; starting or developing a venture. It is commonly understood as the person’s belief of her/his ability to successfully start or develop an entrepreneurial venture (see among many others, Bird, 1988; Drnovsek et al., 2010; Hermawan et al., 2016; McGee et al., 2009; Wilson et al., 2007).

ESE has been measured using different methods and dimensions in an increasing number of studies; among different focus groups and in different situations. It has been applied with a focus on students, nascent entrepreneurs, practising entrepreneurs, ethnic groups, gender and age groups, and in comparing different country situations (see, for example, a list of studies in McGee et al., 2009). In the below, and in brief, reference is made to some studies measuring ESE among groups of university students.

Álvarez-Huerta (2019) compared ESE among new entrant students at different colleges in a Spanish university, while Basol & Karatuna (2017) compared ESE among students attending similar college in two countries, Turkey and Poland. Chen et al. (1998) studied difference in ESE between students following entrepreneurship course and others following different courses in a US university and measured the relationship between ESE and EI. Jiang et al. (2017), Maritz and Brown (2013), and Qiao and Huang (2019) measured ESE among higher education students before and after attending entrepreneurship education in China, Australia and Thailand, respectively. Measuring the same but focusing on gender, Wilson et al. (2007) examined a sample of MBA students at a US university. Gender differences in relation to ESE and EI among university students were also studied by Campo (2011) in Colombia and Esnard (2010) in Trinidad. In Poland, Zieba and Golik (2018) measured ESE when the students entered university and three years later measured their EI, while in Malaysia, Saraih et al. (2018) measured ESE and EI at the same time, to conclude on the relationship between the level of ESE and of EI. Nguyen (2020) measured the perceived environmental support (finance and non-finance) and compared it with the perceived ESE among a group of students in Vietnam.

## Entrepreneurial desirability as antecedent of entrepreneurial self-efficacy and entrepreneurial intent

Shapero (1975, cited in Krueger et al., 2000) and Shapero and Sokol (1982) posit that entrepreneurial intent derives from desirability and feasibility perceptions. Perceived entrepreneurial desirability is whether a person finds the prospect of starting a business appealing or not. This is the first signal to be measured, according to this paper. Perception of Shapero's feasibility is wider than the perception of Bandura's self-efficacy as it involves assessment of other external factors. Shaver and Scott (1991, cited in Segal et al., 2005, p. 6) perceive desirability and feasibility as the answer to the questions 'do I want to?' and 'can I make a difference?' (or can I make it?). 'Perceptions of desirability and perceptions of feasibility necessarily interact. If one perceives the formation of a company is unfeasible, one may conclude it is undesirable. If one perceives the act as undesirable, one may never consider the feasibility' (Shapero & Sokol, 1982, p. 88).

Feasibility as a notion in the understanding of all of the above includes at least in part ESE. The other part is perception of the external environment. However, ESE and perception of the external environment, following the logic of Shapero, may interact, and a positive perception of the latter may influence the earlier.

Shapero's model of entrepreneurial intent- desirability, feasibility and propensity to act upon opportunities—was tested empirically for the first time by Krueger (1993). Others following Krueger measured desirability and feasibility only (e.g., Rio-Rama et al., 2016) or in combination with other theories (e.g., Alhaj et al., 2011; Segal et al., 2005).

In this paper, entrepreneurial desirability (ED) is conceived of as a person's broad perception of entrepreneurship as a career choice without necessarily fully comprehending what such a career involves in terms of particular knowledge, skills and attitudes. Being exposed to what entrepreneurship is and what it entails through entrepreneurial education (EE) or through other experiences and factors may raise ESE leading to entrepreneurial intention (EI) or may make the person less certain that he/she wants to pursue entrepreneurship as a career. It is thus postulated that ED is antecedent of ESE. ESE must be preceded by ED, said differently, ED provides the urge for developing ESE.

## Entrepreneurship education as enhancer of entrepreneurial self-efficacy

High self-efficacy expectations in a specific behavioural setting lead individuals to consider that setting, while low self-efficacy expectations lead them to evade that setting (Wood & Bandura, 1989). This means raising the level of entrepreneurial self-efficacy, considered as a strong predictor of entrepreneurial intention, can produce more committed individuals to start or develop business venture.

Several of the studies cited under the heading 'Entrepreneurial self-efficacy' above have provided evidence on the role of EE in universities in enhancing ESE and EI, e.g., in Thailand (Qiao & Huang, 2019), Malaysia (Saraih et al., 2018) and in

Spain (Álvarez-Huerta, 2019). In a study of university students in China, Jiang et al. (2017) find that the quality of EE positively affects EI with ESE playing an intermediary role and the stronger the level of entrepreneurial orientation, the stronger the mediating effect between ESE and EI. In another, recent study among university students in Fujian Province China, Liu et al. (2019) confirm that ESE has a significant and positive effect on both entrepreneurial attitude and EI and EE has a significant and positive effect on EI. Strategies to increase the level of ESE through EE among students will enhance their level of EI.

Kuratko (2004) argues that the issue is not whether the ‘entrepreneurial perspective’ can or cannot be developed through entrepreneurial education, but it is what and how it should be taught. Citing a World Bank study, Valerio et al. (2014) argue that by integrating entrepreneurial skills and creative thinking into educational programmes, entrepreneurial mindsets can be developed. Turker and Selcuk (2009) cite Galloway and Brown (2002) and Henderson and Robertson (2000), in addition to the Global Entrepreneurship Monitor (2001), as providing argumentation that by providing adequate EE, universities can become source of future entrepreneurs.

## The survey

The survey was conducted among students at the Arab Open University (AOU). The AOU is a not-for-profit private university established in 2000 with its headquarters in Kuwait. Its first three branches, in Kuwait, Jordan and Lebanon, were established in 2002, followed a year later by branches in Saudi Arabia, Bahrain and Egypt. Oman and Sudan branches were founded in 2008 and 2013, respectively. After the survey was conducted, another branch in Palestine was added. At the time of the survey, over 25 thousand students were registered. Education is offered in four colleges shown in Table 3 as follows. AOU adopts a blended learning system and follows programmes of the Open University of UK. Graduating students get a degree from their respective branch and from the Open University.

The research adopted the survey method. A close-ended questionnaire composed of 12 questions, together with a short message explaining the purpose, was placed for a period of 4 weeks in the second term in 2016 in the University’s Learning Management System (LMS), which is a must to use by all registered students. The students visit the LMS for purposes related to their educational programmes and courses. It was up to the individual student to decide to respond to the questionnaire. A total of 6,369 students responded, representing about 24.9% of all registered students. According to the LMS manager, this has been the highest response rate received ever for any questionnaire administered through the system. The questionnaire was meant to be short (answerable in a period of 5–8 min) to encourage wider participation. Data received have been statistically analysed using the *t* test for equality of proportions for differences. (Logit regression produced similar results and is not reported here).

Tables 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 depict the questions included in the questionnaire and their responses.

**Table 1** Branch

Branch	Frequency	Per cent (%)
Bahrain	305	4.8
Egypt	732	11.5
Jordan	1422	22.3
Oman	187	2.9
Kuwait	905	14.2
Lebanon	389	6.1
KSA	2383	37.4
Sudan	46	0.7
Total	6369	100

**Table 2** Gender

Gender	Frequency	Per cent (%)
Male	2,674	42
Female	3,695	58
Total	6,369	100

**Table 3** College of enrolment

College of enrolment	Frequency	Per cent (%)
Business studies	2,993	47.0
Education	769	12.1
Language studies	933	14.6
Computer studies and IT	1,674	26.3
Total	6,369	100

**Table 4** When did you enrol?

When did you enrol	Frequency	Per cent (%)
2011/2012 and earlier	836	13.1
2012/2013	796	12.5
2013/2014	980	15.4
2014/2015	1,341	21.1
2015/2016	2,416	37.9
Total	6,369	100

Table 1 shows that a large percentage of the respondents are from Saudi Arabia (KSA), 37.4%. KSA branch is the largest branch per the number of students, followed by Kuwait and Jordan. The three of them make over two-thirds of all the registered students and of the respondents of the survey. Sudan branch was just starting to operate at the time of the survey. Female respondents comprise close

**Table 5** How many study units approximately have you completed so far?

No. of completed study units	Frequency	Per cent (%)
Less than 20 units	2,510	39.4
20 to less than 50	1,654	26.0
50 to less than 80	947	14.9
80 or above	1,258	19.8
Total	6,369	100

**Table 6** Have you worked before enrolling in AOU?

Responses	Frequency	Per cent (%)
Yes, I am still working	2,394	37.6
Yes, but no longer	1,040	16.3
No	2,935	46.1
Total	6,369	100

**Table 7** If yes to the question above, for how many years?

How many years	Frequency	Per cent (%)
less than 1 year	886	26.1
1–3 years	716	21.1
3 years and more	1791	52.8
Total	3,393	100
NA	2,935	
No answer	41	
Total	2,976	
Grand total	6,369	

**Table 8** Have you ever had your own business or in partnership with others?

Responses	Frequency	Per cent (%)
Yes	1,322	20.8
No	5,047	79.2
Total	6,369	100

**Table 9** Has anyone from your direct family owned or currently own business?

Responses	Frequency	Per cent (%)
Yes	3,430	53.9
No	2,938	46.1
Total	6,368	100
No answer	1	
Total	6,369	

**Table 10** Would you think of establishing your own business or in partnership with others in the future?

Responses	Frequency	Per cent (%)
Yes	4,981	78.3
No	226	3.5
I don't know	1,162	18.2
Total	6,369	100

**Table 11** Do you think it is a good idea to introduce entrepreneurship education?

Responses	Frequency	Per cent (%)
Yes	5,882	92.4
No	141	2.2
I don't know	346	5.4
Total	6,369	100

**Table 12** If yes to the question above, how should such training be organised?

Responses	Frequency	Per cent (%)
Within my programme of study	635	10.8
As separate training only for those who wish to receive it, and who can earn certificates of completion	2,662	45.3
Both within the programme and as additional separate advanced certified training	2,585	43.9
Total	5,882	100
NA	487	
Total	6,369	

to 3 in every five respondents, and this is not far from their actual representation in the total number of students (see Tables 2, 13). As Table 3 reflects, Business students constituted 47.0% of all respondents and Computer students are the second highest group (26.3%), followed by Language and Education students. The actual distribution of students per college follows this order but not by the same proportion of response. (see Table 13).

Tables 4 and 5 present the distribution of the respondents by the year of enrolment and by number of completed study units. The AOU is a young university and has been expanding fast. This is clear from the increase of the percentage of responses as the enrolment year progresses. It is also clear from the number of units students have completed. As 37.9% of the respondent enrolled in the year of the survey, it would be expected that in the second term (the academic year is two terms), when the survey was conducted, they would not have completed too many units, 39.4% have completed less than 20 units. (The standard total number of units for graduation is 120).



**Table 13** Actual and adjusted responses and entrepreneurial desirability by branch, College and Gender, AOU 2016

Branch, College and Gender	Total responses	Adjusted responses	Percentage of YES answer (%)
Bahrain	305	323	83.0
Egypt	732	363	83.5
Jordan	1,422	660	74.1
Oman	187	414	79.7
Kuwait	905	1,808	78.5
Lebanon	389	533	75.6
KSA	2,383	2,241	77.9
Sudan	46	27	81.5
Overall	6369	6,369	78.2
Business studies	2,993	2,929	83.1
Education	769	591	69.4
Language studies	933	1,319	70.7
Computer studies and IT	1,674	1,530	78.7
Overall	6,369	6,369	78.2
Male	2,674	2,548	82.0
Female	3,695	3,821	75.7
Overall	6,369	6,369	78.2

Sudan branch was just starting. KSA, Jordan and Kuwait are the oldest

AOU has been established with the purpose of offering high education opportunity to those who have missed the opportunity in the past due to any reason and to those who cannot afford to pay private university fees and/or study full time. The flexible, blended learning system and the low fee level have helped attracting the targeted students. Table 6 reveals that over half of the respondents (55.4%) either worked in the past or are still working (37.6% of the respondents still working). Over half of those with work experience (52.8%) have worked for 3 or more years, as Table 7 indicates.

Some of those with work experience had/have their experience in own business, 1 in every 5 of all the respondents (Table 8) and 2 in 5 of respondents with work experience. Those with someone from the direct family who owned or currently own a business comprise 53.9% of all the respondents (Table 9).

The question posed to measure entrepreneurial desirability was ‘would you think of establishing your own business or in partnership with others in the future?’ The ‘Yes’ response, as Table 10 reflects, was very high: 78.3%. Only 3.5% answered negatively, and 18.2% were not sure (Table 10).

The wish to introduce EE has received overwhelming support, 92.4%. (Table 11). This means not only those who expressed a desire to establish a business in the future (which is 78.3%) are endorsing the idea of introducing EE, but also most of those who have not expressed a desire to be engaged in business in the future are also demanding it.

The respondents were divided in how they want EE to be organised; 45.3% want it outside their programme of study, 43.9% both as separately certified courses and as part of their programme, and the rest wish to have it within their programme of study.

As the distribution of responses received in the survey was not in line with the actual distribution of the registered students by the categories of gender, college and branch, adjusting the numbers was necessary to avoid over- or under-representation of any of the three main categories in the analysis. Table 13 displays the distribution of the actual and the adjusted figures. The last column refers to the percentage of the students who answered positively to the question meant to measure ED.

Some of the main conclusion of the survey are:

Female respondents are more in number than male respondents (the same hold for the number of registered students), more than half of the students have work experience, more than half have direct family involved in business, a large segment of the respondents think of establishing businesses in the future (more than 3 in 4), and more than 9 in 10 wish to see EE offered at the university.

These conclusions will be used in hypothesis setting and the plan of introducing EE.

## Objectives and hypothesis setting

### Objectives

The main objective of this research is to assess the scale of some of the factors that may influence ED in order to use the results to present a case for introducing EE, especially in higher education institutions where the student had no prior exposure to ED. In addition, analysis of the scale and the selected factors is used in pointing out some of the directions the EE programmes are to follow.

By presenting, discussing and assessing ED as antecedent of ESE, the paper also attempts to contribute to the growing EI literature.

### Hypothesis setting

This research aims at motivating and guiding action related to introducing EE at the AOU. Some factors that may be influencing student ED and may have impact on how EE is to be planned have been selected and assessed. They fall in two major spheres: (1) external, referring to the wider societal context, and (2) internal, pertinent to the personal experience and current educational status. Presenting and discussing some of the main external and internal factors form the bases for hypothesis setting. Why these are selected is explained as follows.

#### The wider societal context

The wider societal context comprises complex sets of relationships and factors at the economic, social, cultural, environmental and political levels. In each of these levels, many factors would be influencing entrepreneurship and entrepreneurial

desirability, not uncommonly in conflicting directions, and these could be very different from a country to another.

Two main socioeconomic factors that characterise all countries covered in the survey are high level of unemployment, especially among youth, and female discrimination in the economy and in society.

**Employment situation** The employment situation in the country is considered one of the most important socioeconomic factors that may impact student ED. Perceived gloomy labour market situation may stimulate the students seeking self-employment after graduation. This hypothesis is not tested empirically from the survey data but is argued for on the basis of other evidence (see the Results below).

Hence, the first hypothesis will be:

**H1** *Perceived unfavourable employment situation has a positive impact on student entrepreneurial desirability.*

**Women situation** Women generally, and young graduates particularly, face much higher unemployment rate than their male counterparts. While this should drive in the direction of H1 above, women generally, and specially Arab Muslim women, are discriminated against also in the business sector, and they face social and cultural challenges in becoming entrepreneurs (see for example, Tlaiss, 2015; Abou-Moghli & Al-Abdallah, 2019). The second hypothesis is then:

**H2** *Female students are expected to show a lower level of entrepreneurial desirability than male students.*

## Internal factors

Internal factors are assessed from two perspectives: personal experience and current educational status. Factors selected and assessed under this area derive directly from the main conclusion of the survey mentioned above.

**Personal experience** These include whether the respondent has any member of the direct family who owned or currently owning a businesses, whether the respondent on his/her own or in partnership with others owned in the past or currently is owning a business, and whether the respondent has ever been wage-employed. Shapero and Sokol (1982) and Krueger (1993) posit that desirability and feasibility are impacted upon by the individual's exposure to entrepreneurship. Citing others, Wu and Lingfei (2008) maintain that family background and self-employment experience impact on EI through their effect on attitudes and perceived behavioural control. It can be added, even if only wage-employed, an individual would be more exposed to business experience than those who have never been employed.

On the basis of the above, three hypotheses have been formulated:

**H3** *Having a member of the direct family involved in business has a positive impact on student entrepreneurial desirability.*

**H4** *Students who owned or currently own a business enjoy a higher level of entrepreneurial desirability.*

**H5** *Students with work experience exhibit a higher level of entrepreneurial desirability.*

### **Current educational status**

Álvarez-Huerta et al. (2019) have tested differences in the level of ESE among students with different academic major. Wu and Lingfei (2008) have referred to two research works which had reached opposite results concerning the impact of management studies, as academic major, on entrepreneurial intent.

This paper tests two hypotheses in relation to the educational status of the students in AOU, and these are seniority and college of affiliation. It is assumed here that the more advanced the students in their study the more they may be aware of the gloomy situation of the labour market, and hence, develop more interest in entrepreneurship. At the same time, being exposed to management studies as an academic major, it is hypothesised, may increase the level of entrepreneurial desirability.

Two hypotheses arise from the above:

**H6** *Students close to graduation show a higher level of entrepreneurial desirability.*

**H7** *Students in Business Studies have higher desirability to becoming entrepreneurs.*

## **Results**

Except the first hypothesis, which is examined on the basis of a different evidence a, the other six hypotheses are tested using the *t* test for equality of proportions for differences.

### **H1 perceived unfavourable wage-employment prospect has a positive impact on student entrepreneurial desirability.**

The high rate of ED, this paper argues, could partially be a reflection of a perceived unfavourable wage-employment prospect. This has not been tested empirically but the hypothesis is considered to hold on the bases of the below.

Unemployment rate among the youth in the Arab Countries is higher than the average and is the highest among all world Regions. In 2020, unemployment in the Arab countries is estimated at 23.0%, 19.8% of male and 42.1% of female youth, compared with the World average of 13.7%, 14.0% of male and 13.1% of female youth (ILO, 2020, p. 33). In the Arab countries, unemployment increases with

**Table 14** Unemployment rate among economically active graduates and percentage of entrepreneurial desirability among students of AOU in 2016

Branch	Unemployment (%)	Entrepreneurial desirability (%)
Bahrain	43.2	83.0
Egypt	37.0	83.5
Jordan	29.0	74.1
Oman	49.6	79.7
Kuwait	26.3	80.3
Lebanon	22.8	75.6
KSA	28.5	77.9
Overall	30.5	78.2

*Source* Relevance of AOU graduates and programmes to labour market needs (2016), unpublished report presented to AOU University Senate, 2016, Kuwait

**Table 15** *T* test for equality of proportions for differences in yes responses regarding gender

Gender	Percentage	Percentage difference	Standard error difference	<i>t</i>	<i>df</i>	Significance level-two tailed
Male	82.0%	6.6%	1.0%	6.4	6367	0.0000
Female	75.4%					

*df* Degree of freedom

schooling; the highest educated face higher levels of unemployment. While no average figure is given, some national data demonstrate this clearly (see Ahmed, 2012; Mottoghi, 2014). A survey conducted in 2016 reveals that AOU graduates stand high rate of unemployment (Table 14).

The unemployment rate range was 22.8%–49.7% in the countries shown in Table 14 and the entrepreneurial desirability range was 74.1%–83.5%. There is no positive linear correlation. The responding students did not know the data shown above but obviously the high unemployment rate among graduates was known to them through other means.

**H2 Female students are expected to show a lower level of entrepreneurial desirability than male students.**

Table 15 displays *t* test result of the difference of the means of the male and the female students who answered ‘Yes’ to the question whether they intend to establish own business or in partnership with others in the future (82.0% of male and 75.4% of female respondents). The *t* value is 6.4, *df* is 6367, and *p* is less than 0.01. The difference in the means is statistically significant. Male students have more desire to establish their own business or in partnership with others in the future than female students. The hypothesis is retained.

**Table 16** *T* test for equality of proportions for differences in yes responses regarding whether a member of the direct family owned or currently own business

Response	Percentage	Percentage difference	Std. error difference	<i>t</i>	<i>df</i>	sig-two tailed
Yes	78.8%	1.3%	1.0%	1.25	6367	0.2113
No	77.5%					

**Table 17** *T* test for equality of proportions for differences in yes responses regarding owning a business alone or in partnership with others

Response	Percentage	Percentage difference	Std. Error difference	<i>t</i>	<i>df</i>	Sig-two tailed
Yes	89.3%	14.0%	1.0%	13.40	6367	0.0000
No	75.3%					

### **H3 Having a member of the direct family involved in business has a positive impact on student entrepreneurial desirability.**

Respondents were asked whether a member of the direct family (father, mother, brother, sister, husband or wife) is/was involved in a business venture (Table 16). No significant difference is shown between those respondents with direct relatives who owned or currently owning business and the rest of the respondents in their desirability to establish a business in the future (78.8% vs. 77.5%), whereas  $t = 1.25$ ,  $df = 6367$ , and  $p$  value  $> 0.05$ . Hence, H3 is rejected.

### **H4 students who owned or currently own a business enjoy a higher level of entrepreneurial desirability.**

Respondents whose employment is/was in self-employment sector compose 20.8% of the total responses received. As Table 17 shows, the group of the respondents who had or currently have their own business or in partnership with others show higher entrepreneurial desirability than those who had no business experience (89.3% vs. 75.3%). Since  $t = 13.40$ ,  $df = 6367$ , and  $p$  value  $< 0.01$ , H4 is retained.

### **H5 students with work experience exhibit a higher level of entrepreneurial desirability.**

More than half of all respondents (53.9%) have work experience (37.6% are currently working and 16.3% stopped). It is to be noted that this proportion also includes those who are/were self-employed.

The students who have worked experience before enrolling in AOU show higher level of desirability to establish own business or in partnership with others

in the future than the students who have not worked before (82.1% vs. 73.6%, see Table 18). As the difference between the two means is statistically significant ( $t = 8.141$ ,  $df = 6367$ ,  $p$  value  $< 0.01$ ),  $H_5$  is retained.

**H6 students close to graduation show a higher level of entrepreneurial desirability.**

This hypothesis is meant to test whether progressing in university education has any significance on ED. One group of students who have completed about two-thirds of their programme requirement (80 units or above) was tested against the rest. No significant difference is shown between those who completed 80 units or above and the other students (79.1% vs. 78.8%) in the level of desirability to establish own business or in partnership with others in the future (Table 19). As  $t = 1.011$ ,  $df = 6367$ , and  $p$  value  $> 0.05$ ,  $H_6$  is rejected.

**H7 students in business studies are more desirable to becoming entrepreneurs.**

The effect of having business studies as the academic major on ED was tested (Table 20). Students who follow this major were grouped against the students of the three other colleges. The respondents from the Business College exhibit higher level of desirability to establish own business or in partnership with others in the future

**Table 18** *T* test for equality of proportions for differences in yes responses regarding work experience

Response	Percentage	Percentage difference	Std. error difference	<i>t</i>	<i>df</i>	sig-two tailed
Yes	82.1%	8.5%	1.0%	8.141	6367	0.0000
No	73.6%					

**Table 19** *T* test for equality of proportions for differences in yes responses regarding study units completed

Study units completed	Percentage	Percentage difference	Std. error difference	<i>t</i>	<i>df</i>	sig-two tailed
80 or above	79.1%	1.3%	1.2%	1.011	6367	0.3121
Others	78.8%					

**Table 20** *T* test for equality of proportions for differences in yes responses regarding college of enrolment

College	Percentage	Percentage difference	Std. error difference	<i>t</i>	<i>df</i>	Sig-two tailed
Business	83.1%	9.1%	1.0%	8.92	6367	0.0000
others	74.0%					

than the rest from other colleges (83.1% vs. 74.0). Since  $t=8.92$ ,  $df=6367$ , and  $p$  value  $<0.01$ ,  $H_7$  is retained.

## Discussion

### Assessing factors influencing entrepreneurial desirability: summary of results

Pertinent to its purpose, this paper has opted to discuss and test some factors that may influence entrepreneurial desirability among the students at the University. Results are summarised in Fig. 1.

The survey revealed a strong level of ED among the students distributed by all three categories (country, college and gender). Four out of every five said they would consider establishing a business in the future. This may not have been motivated only by perceived future entrepreneurial opportunities but could partially be a reflection of perceived gloomy labour market situation in all countries.

Advanced students and those who come from families with business experience do not show higher ED than the others.

Students with business and other work experience, enrolled in a management academic major, and/or who are males show higher level of ED. However, the percentage gap between them and the others is not high (see Tables 15, 17, 18, 20).

Personal traits leading to the desirability to establish an enterprise in the future have not been investigated in this study and may remain a task for a future research

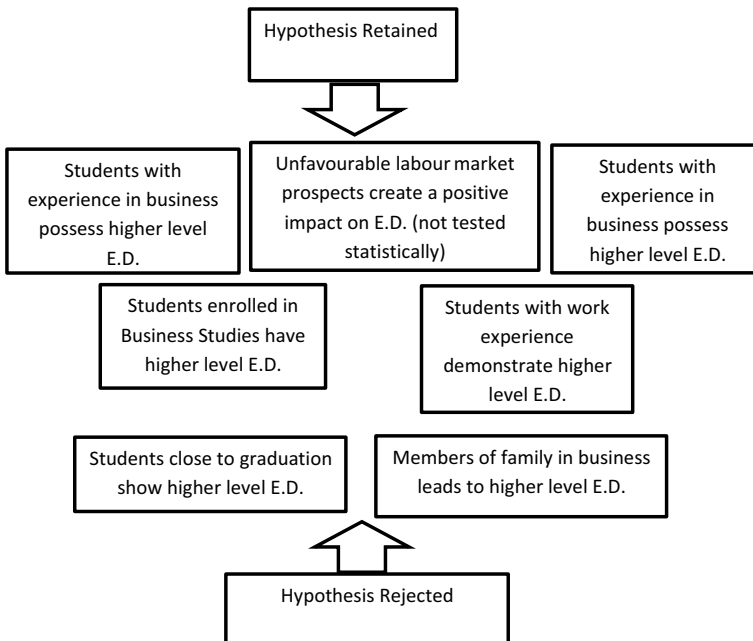


Fig. 1 Hypotheses retained vs. hypotheses rejected



for another purpose. For the purpose of this study, such investigation was not necessary.

### **Broad planning of entrepreneurship education**

The students have strongly supported the idea of introducing EE in the University; 92.4% said ‘yes’. Most of the students who have not answered positively to whether they think of establishing a business in the future (21.7% of all respondents) still agree to the introduction of EE.

ED is called for to transform ED into ESE. And as has been mentioned earlier, EE may raise entrepreneurial self-efficacy leading to entrepreneurial intention or may make the person unsure that he/she wants to engage in an entrepreneurial activity.

On the basis of the above, the following emerge as possible direction of EE at AOU.

As Table 8 has informed demonstrates, 20.8% of the respondents are either current (co-)owners of business or were previously so. This category may not require awareness about entrepreneurship with the aim of choosing it as a career, as they have already done so, but they need extra knowledge and skills to start new businesses or improve performance of their existing enterprises. Their requirement is different from the rest who require EE to firstly raise their awareness, develop their mindsets and motivate them to choose entrepreneurship as a career (the move from ED to ESE) and then, at a higher level, impart knowledge and skills necessary to develop the capability of starting and managing a venture (the move from ESE to EI).

The majority of the students are divided between a segment that prefers EE to be offered and certified outside their major programmes (945.3%) and those who want it at least in part to be taught within their programmes (43.9%). A small segment prefers EE to be organised within their study programmes (10.8%). It is worth noting that the relative standard deviation of these three preferences by branch, gender and college is small (Table 21), which means there may be no need to have separate educational plans/arrangements for the constituents of the three categories.

The arrangement that can fit the three preferences can be as follows.

It may be important for AOU (and may be for all higher education institutions) to offer a course within the preparatory courses of all academic programmes on entrepreneurship; introducing the notion and explaining the mindset, knowledge and skills that the entrepreneurs crave and briefly outlining the other various relevant courses that the university offers. This can be the only compulsory course on entrepreneurship. Other courses are to be planned at various levels and presented as electives. Students can select these electives as part of their academic programmes and/or opt for having them as separately certified courses, or when satisfying a certain number of study units, as certified short programmes. Such certification could be beneficial when applying for financing a venture (showing capacity to manage) and for some other jobs.

Suggesting structures, content and methods of teaching the courses that aim at developing and strengthening ESE and EI, and that meet the needs of the continuing

**Table 21** Relative standard deviation of student preference for provision of entrepreneurship education

Should such training be provided:	Branch (%)	Gender (%)	College (%)
1. Within your courses of studies?	3.4	3.0	3.4
2. As separate training only for those who wish to receive it, and who can earn certificates of completion?	5.2	0.1	2.2
3. Both within the courses and as additional separate advanced certified training?	5.1	3.1	4.1

entrepreneurs among the students of AOU, lie outside the scope of this paper and are dealt with in another work.

## Concluding notes

### Why to assess entrepreneurial desirability and why to focus on entrepreneurial self-efficacy?

As the study of entrepreneurial intent and EE among students of higher education has been growing in the literature, this paper has attempted to demonstrate the importance of assessing entrepreneurial desirability among the students and of asking their opinion (more specifically the opinion of those who show a desire to study entrepreneurship) on how they want EE to be organised. Assessing ED, it is suggested, is to precede offering EE to any new group of higher education students.

It can be assumed that in the countries that do not offer EE at the general education level, most of the students entering higher education would have little knowledge of entrepreneurship. It is hence suggested that EE is to focus mainly on constructing elements of ESE. A small segment of university students is expected to develop during or immediately after their studies into nascent entrepreneurs. These may need dedicated training offered to them, but only to them, by the university. However, the rest of the students, regardless of whether some of them develop own ventures later or not, will benefit from education geared towards developing ESE, which would also strengthen self-efficacy generally, and provide knowledge and skills intrapreneur workers, who are increasingly in demand, would require. With such aim, EE should be based on high level of innovation in content and methods and thinking out of the box of management studies.

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