
ENTREPRENEURSHIP IN CRISIS: THE DETERMINANTS OF SYRIAN STUDENTS' ENTREPRENEURIAL INTENTIONS

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Received 17 November 2017; accepted 2 December 2017

Abstract. This study aims at investigating the factors that affect the entrepreneurial intentions of university students in Syria. The impact of three groups of factors was investigated, demographic, personal, and external factors. The questionnaire survey method was applied. Data was collected from two major universities in Syria: Damascus University and Arab International University and two faculties: Business and Economics, and Informatics and Communication Engineering. We analyze 183 responses from the above-mentioned faculties to understand whether differences exist in entrepreneurial intentions between students from different universities and faculties. Also, we use ordinary least squares to uncover the determinants of entrepreneurial intentions for those students. The results show higher entrepreneurial intentions for Informatics and Communication Engineering and for male students. Moreover, self-efficacy, information and communication, institutional environment come to have positive and significant impacts on entrepreneurial intentions. We recommend that more polices should be directed towards developing female entrepreneurial intents. Also, entrepreneurship training courses should be offered to Informatics and Communication Engineering to enable them turn their intentions into projects. Furthermore, universities should consider establishing entrepreneurship centers, incubators and science parks that foster innovative ideas and support start-ups.

Keywords: entrepreneurial intentions self-efficacy, information and communication, institutional environment, business and economics, and informatics and communication engineering.

JEL Classification: I23, L26, O31.

1. Introduction

The current war in Syria had severe consequences on all economic and social aspects, and entrepreneurship is not an exception. According to recent figures published by the World Bank in 2017, the Syrian GDP declines by 63% in the period between 2011 and

2016. Moreover, unemployment rate rose from 8.6 percent in 2010 to the alarming 52.9 percent in 2015. In addition, 9 million Syrians of working age are not taking part in any economic value generation with 2.9 million unemployed and 6.1 million inactive.

Small to Medium Enterprises (SMEs) are one of the main leader engines to accelerate job creation and enhance the economic growth. In MENA countries, SMEs are major contributors to employment, representing between 80 percent and 90 percent of all formal sector enterprises according to the World Bank (2015). It is important to mention that creating SMEs requires enhancing employability and entrepreneurship competencies of university graduates. The above mentioned startling figures highlight the importance of understanding the determinants of entrepreneurial intentions especially in this war period.

Understanding the determinants of entrepreneurial intentions is essential at national, institutional, and also at the individual level to make better future plans related to introducing new entrepreneurial modules, opening new programs on entrepreneurship or establishing new entities to support entrepreneurship activities. In this vein, this study explores why students establish the intention to start up a business, especially in crisis contexts.

The research on entrepreneurship intentions in Syria is scarce with the exception of Medyanik and Al-Jawni (2017) who investigate the determinants of Syrian students' social entrepreneurial intentions. However, they use a simple correlation analysis and restrict their study to social science students without explicitly considering the current war conditions in their analysis. This study, however, aims to fill this gap by not restricting the investigation to social entrepreneurial intentions but to all entrepreneurship intentions. In addition, it clearly considers the current war conditions and their impact on students' entrepreneurial intentions in the analysis and covers Informatics and Telecommunication Engineering students in addition to Business and Economics students. Doing so, it implicitly considers the impact of students' entrepreneurial education on forming their entrepreneurial intentions.

We find that females have less entrepreneurial intentions than males. However, no significant differences are noticed in entrepreneurial intentions between students from public vs. private universities. Surprisingly, the results confirm higher entrepreneurial intentions for Informatics and Communication Engineering students compared to Business and Economics students. Also, we find that self-efficacy, information and communication, institutional environment have positive and significant impacts on entrepreneurial intentions.

The remaining parts of this paper is distributed as follows. Section one reviews the literature on models that explain the determinants of entrepreneurial intentions. The second section defines the examined variables and discusses their potential impact of forming entrepreneurial intentions. Section three highlights the sample and methodology applied in investigating the factors affecting entrepreneurial intentions. The fourth section outlines the research results and is followed by conclusions and recommendations.

2. Literature review

The evolution of the models that try to explain the entrepreneurship phenomenon can be traced back to the pioneering work of Shapero (1982) who proposes the Entrepreneurial Event Model (EEM). He argues that three variables only determine entrepreneurial intentions, namely, desirability, feasibility and entrepreneur's tendency to act. Ajzen (1991) builds a model based on the Theory of Planned Behavior (TPB) and suggests three different groups of variables that formulate entrepreneurial intentions. Those groups are person's attitudes towards his/her behavior, subjective norms, and behavioral control variables.

In the same year, Robinson *et al.* (1991) propose Entrepreneurial Attitude Orientation (EAO) model. They construct an EAO scale that predicts entrepreneur's attitude using four variables (achievement, self-esteem, personal control, and innovation) and three different reactions (cognitive, conative, or affective). Then, Krueger and Carsrud (1993) generate the Basic Intention Model (BIM) that attributes entrepreneurial intentions to both attitudes and behavior. One year later, Krueger and Brazeal propose Entrepreneurial Potential Model (EPM) that is built on the previous contributions of Shapero (1982). Krueger and Brazeal (1994) argue that desirability, feasibility, propensity to act explain entrepreneurial intentions. Several empirical articles have used this model and previous models such as (Crant 1996; Walstad, Kourilsky 1998; Veciana *et al.* 2005; Guerrero *et al.* 2008).

Davidsson (1995a) suggests a model that combines a number of economic and psychological variables in a set of general attitudes and domain attitudes (ability, necessity, opportunity, values and attitudes) to determine entrepreneurial intentions. Those variables are comparable to perceived self-efficacy variables included in previous models of BIM and EPM. Davidsson (1995b) empirically examines this model and finds that attitudes act as mediators for the influence of personal background variables. Lühje and Franke (2003) later suggest a modified structural model of the TPB that considers personal traits and contextual factors.

A more recent strand in entrepreneurial intentions research consider socio-cultural variables as important determinant of entrepreneurial intentions. This strand of research is based on Shapero and Sokol (1982), Aldrich and Zimmer (1986), Hyde (1998), Scherer *et al.* (1989) and Kolvereid's (1996) models which try to identify factors encouraging entrepreneurial initiative, and which claim that social or environmental factors can explain entrepreneurial behavior. These factors are formal, such as laws and rules, or informal, such as ideas, beliefs, attitudes, social values and codes of conduct (Thornton *et al.* 2011).

Krueger (2009) integrates the TPB model and EEM into a single model called Krueger's Entrepreneurial Intentions (KEI) Model. This model combines desirability, feasibility and propensity to act from the EEM with social norms and self-efficacy from TPB model in addition to collective efficacy. Esfandiar *et al.* (2017) develop KEI model to explicitly distinguishes between entrepreneurial goal intention and entrepreneurial implementation intention.

The model (Fig. 1), we test in this paper, is based on a combination of Davidsson's model and a number of socio-cultural factors suggested in the literature to affect entrepreneurial

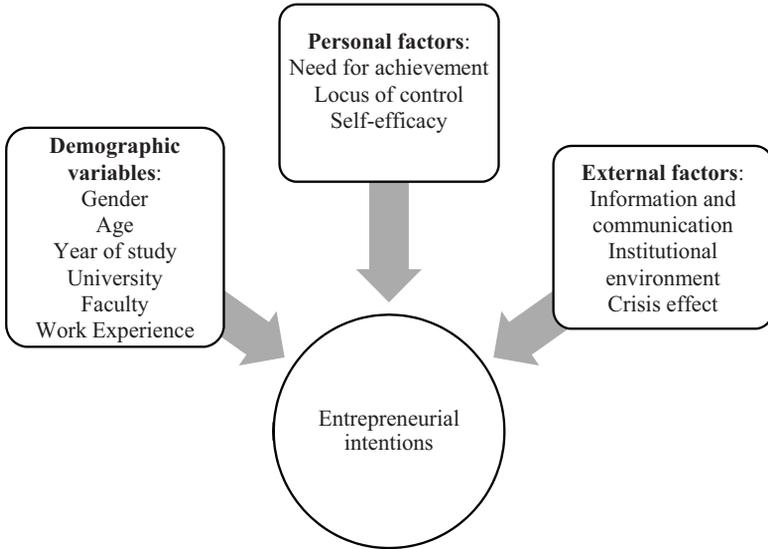


Fig. 1. The study model (created by authors)

intentions. Those factors are need for achievement, locus of control, self-efficacy, information and communication and institutional environment. We add to those factors another factor that is specific to the Syrian content to capture the current war condition called crisis effect.

3. Variables' definition

Need for achievement. The first factor that we examine whether it affects entrepreneurial intentions is the motivation for achievement. It refers to performance comparison between the individual and his/her internal standards. This factor is among the most used psychological variables in entrepreneurship research (McClelland 1961; Wärneryd 1988; Davidsson 1989, 1991). The general conclusion from empirical research is that achievement motivation positively affects entrepreneurial intentions, yet it is not the major determinant. However, Kristiansen and Indarti (2004) find that the need for achievement has no impact on entrepreneurial intentions.

Locus of control. Another personality factor that is expected to affect entrepreneurial intentions is locus of control. It reflects how much an individual feels he/she has control over his/her life. Rotter (1966) indicates that people have internal locus of control if they think they master their own fate and they are able to reach their desired outcomes. Green *et al.* (1996) define locus of control as the degree at which individual attributes his/her success or failure to his/her personal initiatives. Hence, acquiring such trait should result in better planning, self-motivation and not to wait others to tell what to do. A number of studies show that locus of control predicts entrepreneurial intentions (Bygrave 1989; Robinson *et al.* 1991). However, Kristiansen and Indarti (2004) find no impact for locus of control on entrepreneurial intentions.

Self-efficacy. Self-efficacy represents individual's belief in his/her ability to do a certain task (Bandura 1977). Self-efficacy is at the core of Ajzen's (1991) TPB model as it represents the perceived feasibility of conducting a specific behavior. Self-efficacy is also in the center of Shapero's (1982) EEM where entrepreneurial intentions are derived from feasibility (self-efficacy), desirability, and propensity to act upon opportunities. Boyd and Vozikis (1994) propose that self-efficacy is an important mediator in determining both the strength of entrepreneurial intentions and their likelihood to turn into actions. Kristiansen and Indarti (2004) and Peng *et al.* (2012) document a positive and significant impact of self-efficacy on entrepreneurial intention.

Information and communication. We mean by information and communication the set of contextual factors that affect entrepreneurial intentions. Those factors are access to capital, information access and social networks. Limited access to capital can be seen as restriction to individuals' perception of entrepreneurial opportunities which might negatively affect their entrepreneurial intentions. This is a major concern not only for individuals in developing countries, with weak credit and venture capital institutions, but also in developed economies with high entry barriers. Social networks reduce uncertainty and transaction costs and increase access to business ideas. Kristiansen and Indarti (2004) argue that contextual factors, including the availability of business information, are important to initiate a new enterprise.

Institutional environment. More attention has been paid recently to the impact of institutional factors on entrepreneurial intentions. The contribution of institutions as referred to "rules of the game" to entrepreneurial activities and long term economic development has been studied extensively theoretically and empirically (Van de Ven 1993; Stephen *et al.* 2005). Stephen *et al.* (2005) argue that environmental formal variables such as legal rules and government support measures and procedures (number and complexity) are critical in start-up decisions.

Crisis effect. Crisis could be of conflicting impact of entrepreneurial intentions. On the one hand, crisis motivates individuals to defend their financial and social status through supporting their entrepreneurial intentions. On the other hand, crisis may limit the available financial resources and harm their psychological and mental conditions.

4. Methodology

This study aims at investigating the factors that might affect the entrepreneurial intentions of university students in Syria. In order to achieve the study purpose, a questionnaire survey method was applied. The questionnaire consists of a cover letter to explain the purpose of the study and to assure the privacy of answers. Then, an introductory section was displayed to explore the students' profiles (i.e. gender, age, year of study, university, faculty, and work experience). After the introductory section, the body of the questionnaire came, which contained the scales targeting the purpose of the study. The scales of the following factors were developed by Kristiansen (Kristiansen, Indarti 2004): need for achievement, locus of control, self-efficacy, and information and

communication. However, the institutional environment scale was developed based on the Global Competitiveness Report. The crisis effect scale was developed by the authors. Finally, the entrepreneurial intentions item was adopted from Block *et al.* (2013). The questionnaire was originally in English language. Though, to assure students' accurate understanding of the items, the items were translated into Arabic by one of the authors and reviewed by the other. Responses were assessed on a 5-point Likert scale.

Questionnaires were distributed online through the Facebook groups of the Syrian universities. The responses reached 215, mainly from Damascus University and Arab International University. Thus, the few responses that came from other universities and faculties were not included in the analyses. The remaining cases were 183. The profile of the respondents is presented in Table 1. The data was treated through SPSS version 20.

Table 1. Students' profile (created by authors)

Variable	Frequency	%
<i>Gender</i>		
Female	95	51.9
Male	88	48.1
<i>Age</i>		
Less than 20	20	10.7
20–25	139	76.3
More than 25	24	13.0
<i>Year of study</i>		
1	5	2.5
2	31	16.7
3	37	20.2
4	93	51.5
5	17	9.1
<i>University</i>		
Damascus University	108	50.0
Arab International University	75	34.8
<i>Faculty</i>		
Business and Economics	141	77.1
Informatics and Communication Engineering	42	20.0
<i>Work Experience</i>		
None	101	55.6
Public or government sector	11	6.1
Private sector	48	26.2
Business owner	23	12.1

Table 2. Exploratory factor analysis and reliability test (created by authors)

Construct	Item	Factor loading						Eigenvalue	Cronbach's alpha
		F1	F2	F3	F4	F5	F6		
Need for achievement								1.895	0.614
	I will do very well in fairly difficult tasks relating to my study and my work.	.640							
	I will try hard to improve on past work performance.	.653							
	I will seek added responsibilities in jobs assigned to me.	.601							
	Crisis motivates me for further achievement.	.453							
Locus of control	Attentiveness and hard work usually lead to success.		.605					1.814	0.648
	If I do not succeed on a task, I do not give up.		.797						
	I do not really believe in luck.		.764						
	I am fairly managing my financial situation.		.658						
	I am a good time-manager.		.805						
	In general, I am able to keep a self and a life balance during the crisis period.		.495						
Self-efficacy	I have leadership skills that are needed to be an entrepreneur.			.719				2.409	0.757
	I have mental maturity to start to be an entrepreneur.			.826					
	My personal competence is able to commercialize.			.740					
	I have the experience to run a business.			.609					
Information and Communication								2.663	0.759
	I have access to capital to start to be an entrepreneur.				.538				

End of Table 2

Construct	Item	Factor loading						Eigenvalue	Cronbach's alpha
		F1	F2	F3	F4	F5	F6		
	I have good social networks (e.g., relatives, friends, etc.) from whom I can benefit when I decide to be an entrepreneur.				.789				
	I have access to supporting information (information about markets and sources of inputs, technological solutions, design, government rules and regulations, etc.) to start to be an entrepreneur.				.736				
	The required labor for my business is available.				.639				
	I have access to business incubators that can support me in my business.				.537				
Institutional Environment	I do not find difficulties (bureaucracy) in the procedures of registering and running companies.					.724		1.801	0.607
	I do not have problems related to the infrastructure (e.g. internet connection, electricity, transportation, etc.)					.734			
	I think that taxes are within an acceptable range.					.676			
Crisis Effect	My financial situation has been affected dramatically by the crises.							2.457	0.762
	My psychological situation has been affected dramatically by the crises.							.798	
	My social situation has been affected dramatically by the crises.							.741	
	Crisis restricts resources that are necessary to start up business.							.766	
<p>Note: Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser normalization.</p>									

To explore and assess the dimensionality of the scales in the questionnaire, two analyses were conducted. Firstly, an exploratory factor analysis was utilized using the principal component analysis method and the varimax rotation (Table 2). Each item that had a minus factor loading or a loading that is lower than 0.3 was deleted. The procedure ended up with six factors with Eigen values and factor loadings that exceeded 1 and 0.3, respectively, which satisfied the minimum values suggested by Creswell (2012). Moreover, the minimum number of items for each factor came to be 3, which responded to the criteria of defining a factor (Brown 2015). Consequently, the authors named the factors based on the meaning of their items. Secondly, the authors applied Cronbach’s alpha to measure the internal consistency of the generated factors. The values exceeded 0.6 for all of the factors, which satisfied the minimum suggested by DeVellis (2012).

5. Results

In order to investigate the significant contributions of the demographic variables to the entrepreneurial intentions, t-test and ANOVA were applied. First, independent sample t-test was applied for gender, university, and faculty. Second, ANOVA was utilized for the variables of age, year of study, and work experience.

Table 3 shows a significant impact of gender on entrepreneurial intentions. Males have the average entrepreneurial intentions of 4.08 compared to 3.60 for females although it is only at 10 percent level of significance. This result gets along with Yildirim *et al.* (2016) who find lower entrepreneurial intent for females compared to males in two Turkish universities and for two similar faculties to those examined by our research. Mazzarol *et al.* (1999) also find that males were generally more likely to be founders of new businesses than females. It is also consistent with Kolvereid (1996) who illustrates that females had significantly less entrepreneurial intention than males in a Scandinavian context, also Haus *et al.* (2013) find that men have higher average entrepreneurial intentions than women.

Table 3. T-test for assessing the impact of gender, university, and faculty on entrepreneurial intentions (created by authors)

Construct	t	Df	Sig.
Gender	-2.683	213	0.078**
University	2.380	180	0.445
Faculty	-2.520	197	0.008*

*** indicates significance at 0.05 and 0.10 respectively

However, Table 3 illustrates that there are no significant differences in entrepreneurial intentions between students from private and public universities. Nevertheless, there is a significant impact for faculty on the entrepreneurial intentions, with the means of 4.29 and 3.72 for the faculty of Informatics and Communication Engineering and the

faculty of Business and Economics, respectively. This result indicates that managerial skills usually taught to Business and Economics students have less impact on forming entrepreneurial intentions compared to technical skills taught to Informatics and Communication Engineering students.

Table 4. ANOVA for assessing the impact of age, year of study, and work experience on entrepreneurial intentions (created by authors)

Construct	F	Df	Sig.
Age	1.163	2	0.315
Year of study	0.963	4	0.429
Work Experience	5.976	3	0.001*

*significant at 0.05

Table 4 shows no significant impacts for age and year of study on entrepreneurial intentions. However, there is a significant impact for work experience on entrepreneurial intentions. The means were 4.62, 4.07, 3.59, and 3.38 for the groups of business owner, private sector employee, not worker, and public or government sector employee, respectively.

Thereafter, a multiple regression analysis was run to investigate the impact of the six extracted factors: need for achievement, locus of control, self-efficacy, information and communication, institutional environment, and crisis effect on entrepreneurial intentions. Table 5 below illustrates the results from running this multiple regression.

Table 5. Direct effects' coefficients (created by authors)

The relationship	Estimate	P-value
Entrepreneurial Intentions <--- Need for achievement	0.055	0.707
Entrepreneurial Intentions <--- Locus of control	0.127	0.440
Entrepreneurial Intentions <--- Self-efficacy	0.416	0.000*
Entrepreneurial Intentions <--- Information and Communication	0.441	0.000*
Entrepreneurial Intentions <--- Institutional Environment	0.186	0.053**
Entrepreneurial Intentions <--- Crisis Effect	0.026	0.763

*** indicates significance at 0.05 and 0.10 respectively

Table 5 shows insignificant impacts for the need for achievement and locus of control on the entrepreneurial intentions of Syrian students. This result is consistent with Kristiansen and Indarti (2004) for both Norwegian and Indonesian students. However, there are significant and positive impacts for self-efficacy and information and communication on the entrepreneurial intentions, with a greater impact for information and communication. This also consistent with Kristiansen and Indarti (2004), Peng *et al.*

(2012) and Esfandiar *et al.* (2017) who document a positive and significant impact of self-efficacy on entrepreneurial intention.

Institutional environment is only significant at 10 percent level of significance. This gets along with the argument of Stephen *et al.* (2005) that environmental formal variables such as legal rules and government support measures and procedures (number and complexity) are critical in start-up decision. The crisis effect seems insignificant determinant of entrepreneurial intentions. Crisis neither motivates students to establish their entrepreneurial intentions nor harm their entrepreneurial intentions.

6. Conclusions and recommendations

This paper illustrates the state of entrepreneurial intentions among a sample of Syrian students in two major universities; Damascus University (public) and Arab International University (private). It explores the differences in entrepreneurial intentions among students from different faculties at those universities. The results clearly indicate superiority in entrepreneurial intentions for Informatics and Communication Engineering students with no significant difference in entrepreneurial intentions between universities.

The lower entrepreneurial intentions among females compared to males is a source of concern. It may reflect the result of social context (e.g., traditions and norms) that determine gender roles as suggested by Welter (2011) more than a result of discrimination in market access (Sullivan, Meek 2012). However, investigating the causes of such differences in the Syrian context deserves further investigation.

This research clearly indicates the importance of self-efficacy on forming entrepreneurial intentions. The self-confidence of acquiring the necessary skills and competencies to start-up ventures seem to be crucial determinants in forming entrepreneurial intentions. Hence, providing students with training on job-market skills and providing them with traineeship as part of their study programs would enhance their entrepreneurial intentions.

Information and communication and institutional environment affect students' entrepreneurial intentions. This is expected given the lack of financial resources in Syria during the crisis and the difficulty in obtaining information. Having social networks, easy access to funds and information reduce uncertainty and provide students with the required assurance to form their entrepreneurial intentions.

This research has a number of implications on individual, institutional and national levels. First, Informatics and Communication Engineering students should develop their entrepreneurial skills to turn their intentions into enterprises. This can be achieved through following formal and informal training on different entrepreneurial skills. Second, students from both faculties are advised to form teams to share and mix ideas and complement their skills. Hence, universities could organize entrepreneurial activities that mix students from different genders and disciplines in major events such as start-up weekends. Third, establishing university-attached incubators and science parks would

provide students with excellent venues to develop their ideas and strengthen their relations with funding bodies and industry which are expected to enhance students' entrepreneurial intentions. Forth, the Syrian government should make more efforts to reduce bureaucracy and taxes and improve infrastructure to enhance students' entrepreneurial intentions.

Three caveats can be mentioned here. First, this research does not distinguish, while examining the impact of investigated factors, between faculties or universities. In other words, students from different faculties and universities may differently be affected by attributes and contexts. Second, although we attempt to disentangle the impact of Syrian war in forming entrepreneurial intentions from other factors, we should admit that it may still be implicit in other factors. Third, other important variables that affect the forming of entrepreneurial intentions may be at work but not considered in the paper.

We suggest the following possible venues of future research. First of all, a careful analysis of the factors that affect the formation and development of entrepreneurial intentions for each faculty could be performed to consider the special attributes of each discipline. Then, given that entrepreneurial intentions are formed from the interaction of internal and external factors, an examination of how the Syrian war affects not only the individual factors but also the interaction between those factors could reveal interesting remarks. Next, the investigation of the impact of entrepreneurial education on forming entrepreneurial intentions is also a gap and an interesting topic that deserves further research in the Syrian context.

Acknowledgments

Authors are thankful to the respondents who devoted their time generously to fill out the questionnaires. Our appreciation is also extended to the editor and two anonymous reviewers of Business, Management and Education. We are also thankful for Dr. Kinaz Al Aytouni for the valuable comments and suggestions which helped us to improve the questionnaire.

Disclosure statement

The authors declare that they do not have any competing financial, professional, or personal interests from other parties.

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