



University and Entrepreneurship: An Empirical Investigation in the Tunisian Context

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ABSTRACT

Higher education in Tunisia is currently confronted with the explosion of students' number. This significant growth represents an important challenge to take up: Improving the quality of education and its relevance to the labour market and promote entrepreneurial culture and firm creation. In this context, we investigate the entrepreneurial intentions of final-year university students in the Tunisian economy by applying the theory of planned behavior (TPB). The objectives of the study were to test whether the TPB can help explain the entrepreneurial intentions of university students; to determine whether students will have intentions to start a business and to identify the key determinants of each antecedent of entrepreneurial intention. Data was analyzed by means of the SPSS using descriptive statistics, hierarchical multiple regression analysis and principal components analysis. In line with the TPB, the attitude towards becoming an entrepreneur, perceived behavioural control and subjective norms were statistically significantly associated with entrepreneurial intention. Most of the Tunisian students indicated that they intended to start businesses as soon as they had completed their studies. Furthermore, some key determinants of each antecedent of entrepreneurial intention had been proposed as entrepreneurship educators to the Tunisian authorities to improve entrepreneurship and the creation of firms.

Keywords: Entrepreneurship, University Students, Theory of Planned Behavior, Principal Component Analysis, Multiple Regression Analysis

JEL Classification: M130

1. INTRODUCTION

Within the current knowledge based economy, the university has been considered as a key contributor to wealth generation and economic development. It acts as both "a human capital provider and a seed-bed for new firms" and innovation (Dooley and Kirk, 2007). Many studies have been conducted to identify the main mechanisms implemented by universities to contribute to regional development. Two approaches are being mobilized: The triple helix model of university, industry, government relations (Etzkowitz and Leydesdorff, 1999; Etzkowitz, 2001) and the literature on university engagement (Holland, 1999; Chatterton and Goddard, 2000). The triple helix of university-industry-government relationships have mainly focused on the entrepreneurial role of universities as "regional innovation organisers" (Etzkowitz, 2001; Mayer, 2006), and a key drivers of economic development through a range of boundary-spanning and knowledge capitalisation mechanisms. The university engagement literature, while acknowledging the importance of academic entrepreneurial activities in enabling technology transfer

and economic growth, points to a broader, developmental role performed by universities through adapting their traditional roles in teaching and research to better support regional knowledge needs (Gunasekara, 2006a; 2006b)

Higher education in Tunisia is currently confronted with the explosion of students' number (more than 60 million graduate students each year). This significant growth represents an important challenge to take up: Improving the quality of education and its relevance to the labour market and promote entrepreneurial culture and firm creation. In this context, Tunisian authorities are continuing to take steps to improve the role of university in social-economic development. Some knowledge capitalization and hybrid, boundary-spanning mechanisms are implemented, among which we can cite:

- Encouraging the mobility of researchers between research centers and production firms, (full or partial time)
- Setting-up of technopark in most Tunisian governorates in order to provide the appropriate environment for the transfer and diffusion of the technological know-how

- Setting-up of incubators and business incubators as a receiving platform for providing the counselling, support and initial accommodation to young researchers
- LMD reforms (License, Master, Doctorate) with an aim of modernizing the system of university diplomas and to harmonize the courses of formation on the level of the higher education with the international standards and systems.

In order to study the contribution of Tunisian university to the social-economic development, we adopted an empirical approach which consists in verifying if these universities prepare their students for future entrepreneurial careers. This study follows the cognitive approach through the application of an entrepreneurial intention model, to verify if entrepreneurial measures taken by the Governments of Tunisia arise a concern about the capacity of universities to produce students who may select entrepreneurship as their possible future occupation. In other words, the main objective of this study is to examine, based on the theory of planned behavior (TPB), whether Tunisian university student have the intention to start their own businesses, and to explore in more depth the factors influencing their entrepreneurial behavior.

Entrepreneurial intention is defined as “a state of mind directing a person’s attention and action towards self-employment as opposed to organizational employment” (Souitaris et al., 2007). A strong intention for self-employment is the first step in the process of setting up a business (Liñán and Chen, 2006) and the most frequently studied factor of enterprise creation. Then, entrepreneurship can be considered as an intentionally planned behaviour (Krueger et al. 2000; Souitaris et al. 2007; Liñán et al. 2013) and entrepreneurial intentions typically precede entrepreneurial action (Shook et al. 2003; Ajzen, 2005; Kolvereid and Isaksen, 2006; Krueger et al. 2000; Schlaegel and Koenig 2013; Shapero and Sokol, 1982; Douglas, 2013). Thus, observing intentions towards the entrepreneurial has been used in several studies to predict entrepreneurial behavior and the results obtained show in general a significant relationship between these two parameters (Bird, 1988; Lee et al., 2011; Liñán et al. 2011, Pendiuc and Lis 2013; Davidsson, 1995; Boissin et al. 2007; Krueger and Carsrud, 1993; Fayolle and Gailly, 2004; Krueger et al. 2000; Kolvereid and Isaksen, 2006; Liñán and Fayolle, 2015).

The research objectives of this study were:

- To test whether the TPB could help explain the entrepreneurial intention of final-year university students in the Tunisia country
- To assess whether these students will have the intention to start their own businesses in the future
- To identify the key determinants of each antecedent of entrepreneurial intention.

This paper is organized as follows. The second Section reviews previous contributions and presents the theoretical entrepreneurial intention model adopted. Section three introduces the research model and hypotheses used throughout this paper. Section four describes the data collection and sample characteristics. Data analysis and the results are presented in the five sections. Finally, section six presents our conclusions.

2. THEORETICAL BACKGROUND

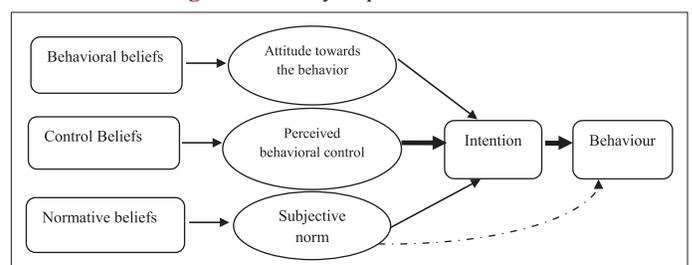
During recent years, an increasing number of studies have used the TPB as the theoretical framework when studying entrepreneurial intention (Shapero and Sokol, 1982; Bird 1988; Krueger and Carsrud, 1993; Davidsson, 1995; Kolvereid and Moen, 1997; Kautonen et al., 2012; Malebana, 2014; Kuttim, et al. 2014, Fayolle and Liñán, 2014, Pingying et al. 2015). This theory is derived from the theory of reasoned action (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980) which was used to forecast behaviors that were not under complete voluntary control. The TPB indicates that people are expected to transform their intention into action, provided there is an adequate degree of actual control over the behavior. Thus, individuals engage in an activity (such as starting a business) as a deliberate action which is reflected on their intention to this behavior (Ajzen, 1991). According to this theory, person’s attitude towards behavior, subjective norm, and perceived behavioral control are the significant factors that determine his intentions. These three components are claimed to capture “how hard people are willing to try and of how much an effort they are planning to exert, in order to perform the behavior” (Ajzen, 1991. p. 181). The TPB has been considered as an antecedent of entrepreneurial behavior (Ferreira et al., 2012) and has been adopted in many studies since it may be applied to almost voluntary behaviors (Ajzen, 2001; Kolvereid, 1996a). Figure 1 present the three conceptually independent antecedents of intention as formulated by (Ajzen and Fishbein, 1980; Ajzen, 1991).

2.1. The Attitude Towards Behavior

It is conceptualized as the degree to which a person has a favorable appraisal of the behavior, and attitude towards entrepreneurship behavior refers to the difference between the concepts of a personal desire to become self-employed and the desire to work as an employee (Souitaris et al. 2007). Individuals’ perceptions on ability to perform specific tasks increase the likelihood of attitude converting into intention and subsequent behavior (Ajzen, 1991).

More recently, a number of studies have investigated how attitude toward entrepreneurship affect the intention of starting a business. Attitudes are based on the total set of the person’s salient beliefs and the evaluations associated with those beliefs have direct and positive effect on entrepreneurial intentions (Kolvereid and Tkachev, 1999; Shariff and Saud 2009; Krueger et al. 2000; Paço et al. 2011). Hence, education and training should focus both on changing personal attitudes and technical knowledge about business because the effects could be more

Figure 1: Theory of planned behavior



Source: Adapted from Ajzen (1987, 1991)

significant to the process of business creation and to overcome the perceived barriers to entrepreneurship (Paço et al. 2011; Kolvereid and Moen, 1997). Attitude can be also developed and strengthened through information related to environmental factors. External information cues (availability of resources) and internal (individuals “perception on their capability and task-specific knowledge”) can enhance entrepreneurial self-efficacy and in turns, strengthen their attitude toward entrepreneurship (Estay et al. 2013; Liñán et al. 2013). In general, the empirical tests of the TPB suggest that when individuals believe that they are personally capable of doing so when the act would result in the achievement of these entrepreneurial outcomes. So, entrepreneurial outcomes play a significant role in the intention to start and grow a business (Renko et al. 2012; Edelman et al. 2010).

2.2. The Perceived Behavioral Control

It reflects to the perception of the easiness or difficulty in the fulfillment of the behavior of interest (Liñán and Chen, 2006). It includes two components (Ajzen, 1991). The first one reflects the availability of resources needed to engage in the behaviour) i.e., access to money, time, and other resources). The second component reflects the focal person’s self-confidence in the ability to conduct the behavior. Sometimes, research adopt a different approach in which perceived behavioral control includes beliefs about whether factors that will affect the difficulty of the behavior, perceived power of these factors and number of factors. These three elements determine individuals’ perceptions of their capability to act entrepreneurially. According to Townsend et al. (2010), perceived ability exerts a greater effect on the motivation to start a business than perceived outcomes. Similarly, Ajzen (2012, 2011, 2005), noted that perceived behavioural control is determined by control beliefs concerning the availability of factors (market opportunities, resources, role models, social support from others and entrepreneurial support) that can facilitate or impede performance of the behavior. It has also been found that individuals who possess the necessary knowledge and skills to start a business and who know other people who are entrepreneurs are more likely to identify business opportunities (Geissler and Zanger, 2013; Ramos-Rodriguez et al., 2010).

The TPB has received broad support in empirical studies and its basic assumption is that the more favourable the attitude and subject norm with respect to the behavior, and the greater the perceived behavioural control, the stronger the intention to perform the behavior should be.

2.3. The Subjective Norm

It refers to the perceived social pressure to perform the behavior. The opinion of significant others (i.e., opinions of individuals’ parents, friends, partners or other important role, etc.) about whether a person will choose to follow a career as an entrepreneur seems to affect the formation of entrepreneurial intention (Ajzen, 2001; Solesvik, 2013; Liñán and Chen, 2006). Fishbein and Ajzen (1975) describes subjective norm as “perceived social pressure to engage or not to engage in behaviour.” When social valuation of entrepreneurship is positive, it contribute to the formation of positive attitudes towards entrepreneurship. Individuals are more likely to hold positive attitudes towards entrepreneurship when

their decision to engage in it is approved by significant others in their environments and when entrepreneurship is positively valued by those close to them (Liñán et al. 2013; Liñán et al. 2011; Uygun and Kasimoglu, 2013; Liñán, 2008).

The relationship between subjective norms and the intention to start a business has been studied by several investigators. Some of them found that subjective norm is significant in predicting entrepreneurial intention (Kolvereid, 1996a; Kolvereid and Tkachev, 1999; Kolveried and Isaksen, 2006; Yordanova and Tarrazon, 2010; Uygun and Kasimoglu, 2013). Therefore, entrepreneurial activity can be facilitated or hindered by certain sociocultural practices, values and norms (Krueger et al. 2013). The social environment impacts on entrepreneurial activity by contributing to the formation of positive attitudes towards entrepreneurship and enhanced perceived behavioural control which in turn influence entrepreneurial intention (Krueger and Brazeal, 1994). On the contrary, further researchers found that social norms to exert the weakest influence on intention among the three antecedent of TPB (Ajzen 1991; Krueger et al. 2000; Autio et al. 1997; Armitage and Conner, 2001; Liñán, 2004; Liñán and Chen, 2009).

3. RESEARCH MODEL AND HYPOTHESES

This paper’s hypotheses were defined according to the model of the TPB (Ajzen, 1987, 1991), adapting them to the variables of interest and context study. Figure 1 describes the conceptual model that was tested to verify the hypotheses presented in the Table 1.

4. DATA COLLECTION AND SAMPLE CHARACTERISTICS

The data was obtained from final-year Tunisian students in the University of Gafsa (located in the southeast of Tunisia). The survey population consists of 400 undergraduate students. 25% of them are from the Higher Institute of Business Administration, 13% from the Higher Institute of Applied Science and Technology and 62% from the Faculty of Sciences. The gender composition of the sample was 48.6% male and 51.4% female.

The instrument for data collection was designed based on structured and validated questionnaire that was designed and tested by Boissin et al. (2009). The initial version of the questionnaire is that of Liñán and Chen (2006, 2009). It has been validated in both developed and developing countries. The questionnaire as illustrated in the first column of the Tables 2-4, consisted of questions that were based on the five-point Likert scale (1=Strongly disagree and 5=Strongly agree). Likert scale type questions were used for entrepreneurial intention (three items), the attitude towards becoming an entrepreneur (13 items), perceived behavioural control (14 items) and subjective norms (four items). The methodological approach chosen for this study is the quantitative research, which involved a self-administered survey filled out both online and personally. The data collection was conducted during the first semester of the academic year 2015-2016.

According to the measure proposed by Kolvereid, (1996), the present research assumes that a student has either the choice to become self-employed or organizationally employed. An index was created by the score obtained for three separate items (Cronbach's alpha=0.86): (1) After your studies, what is the probability that you create your company ("very unlikely" to "very likely"), (2) following your education, what is the probability that you pursue a career employee in an existing organization ("very unlikely" to "very likely"), (3) at the end of your studies, if you can choose between creating your business and be an employee, what would you prefer? (from "be employed" to "create your business"). A high score indicates that students have a strong desire to become self-employed and a low score a desire to become organizationally employed.

5. DATA ANALYSIS AND RESULTS

Data analyzes are performed in two stages (Table 1): Test base hypothesis (BH) then H1, H2 and H3. For the validation of H1, the intention was regressed on the attitude towards becoming an entrepreneur, the perceived behavioural control and the subjective norms. H1, H2 and H3 tests required factor analysis using principal components solution with varimax rotation. During this process, all items that had a factor loading below 0.50 were excluded and only those with higher cross loadings were included.

5.1. Analyzes of Student's Entrepreneurial Intention Level and its Influencing Factors (Test of BH)

The most encouraging finding of this study is that 60% of respondents indicated that students have intention to start their own

businesses at some point in the future. This signals that a vibrant entrepreneurial class is in the making, bringing vigor and strength to the Tunisian economy for years to come, and consequently they are a potential pool of entrepreneurs who need various kinds of support to translate their intentions into action by starting new businesses that would create jobs.

The test of the BH was performed by the multiple regression technique. Table 2 presents the analysis of variance. In line with the theory of planned behaviour, the attitude towards becoming an entrepreneur, perceived behavioural control and subjective norms were statistically significantly associated with entrepreneurial intention ($F [3, 400] = 192; P < 0.01$). All the three antecedents of entrepreneurial intention were statistically significant and accounted for 60% of variance in entrepreneurial intention. The attitude towards becoming an entrepreneur explained the most variance in entrepreneurial intention (67%), followed by subjective norms (11.4%) and perceived behavioural control explained the least variance in entrepreneurial intention (9.3%).

Thus and according to different statistical criteria mentioned in Table 3, the first hypothesis, based on basic assumption of the TPB, can be accepted. This hypothesis states that the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person's intention to start a business.

Although the hypothesis (BH) is confirmed in its entirety, it is clear that:

- Attitude towards becoming an entrepreneur appeal to better determine the formation of entrepreneurial spirit among Tunisian students ($\beta = 0.67$). This is consistent with several

Table 1: Structure of research hypotheses

First step	BH		
	The more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be the student's intention to start a business		
	Research aim: Test whether the TPB can help explain the entrepreneurial intentions of Tunisian university students and identify the relative contribution of the three conceptually independent antecedents of entrepreneurial intention to the explanation of intention for self-employment		
Second step	H1	H2	H3
	The attitude towards becoming an entrepreneur is determined by a set of professional beliefs	The social norm is determined by a set of beliefs which impacts on entrepreneurial activity	The perceived behavioral control is determined by a set of self-efficacy beliefs
	Research aim: This hypothesis allows us to extract the main factors that determine the attitude towards becoming an entrepreneur and identify the relative contribution of each factor to the explanation of this attitude	Research aim: This hypothesis allows us to extract the main factors that determine the social norm beliefs and identify the relative contribution of each factor to the explanation of these beliefs	Research aim: This hypothesis allows us to extract the main factors that determine the perceived behavioral control and identify the relative contribution of each factor to the explanation of this behavior

BH: Base hypothesis, TPB: Theory of planned behavior

Table 2: Multiple regression model for the relationship between the antecedents of entrepreneurial intention and entrepreneurial intention

Explanatory variables	Non-standardized coefficients		Standardized coefficients	t	Significant	R ²	F
	B	Standard error	Beta				
Constant	-0.133	0.075		-1.78	0.076	0.77	192
Attitude towards becoming an entrepreneur	0.645	0.037	0.670	17.53	0.000		
Subjective norms	0.180	0.055	0.114	3.28	0.001		
Perceived behavioural control	0.097	0.040	0.093	2.43	0.016		

empirical studies such as Autio et al. (1997), Krueger et al. (2000) and Kennedy et al. (2003).

- Contrary to the results of some researchers (Ajzen 1991; Krueger et al. 2000; Autio et al. 1997; Armitage and Conner, 2001; Liñán, 2004; Liñán and Chen, 2009), subjective norm exert a significant and positive influence on entrepreneurial intention.

5.2. Analyses of the Conceptually Independent Antecedents of Entrepreneurial Intention and their Influencing Factors (Test of H1, H2 and H3)

To analyze the conceptually independent antecedents of entrepreneurial intention and their influencing factors, we applied the principal component analysis (PCA) to reduce the amount of information by combining the various determinants measured at a limited number of factors. Then, for each variable measuring entrepreneurial intention, it was regressed on its factors identified by the analysis factor.

5.2.1. Verification of the first hypothesis (Test of H1)

Factor analysis by using principal components solution with varimax rotation was applied in order to identify the factor structures of the attitude towards becoming an entrepreneur. Cronbach's alpha coefficient of reliability showed a high internal consistency of 0.89 and implied that the scale is reliable. The component extraction yielded 6 components with Eigenvalues higher than 1, with a cumulative explanatory power of 67.9% of the total variance. The first factor, called "being independent" has three items related to the decision-making power and autonomy. The second factor, called "achieve personal fulfillment at work," is also composed of three items that reflect a desire to have a job for personal fulfillment. The third factor (a stable work situation) describes the financial and temporal security. The fourth factor (realize its dreams) concerns the search for interesting work and the realization of his dreams. The fifth factor, named "having a satisfying extra-professional life" refers to the importance of free time and financial security in professional careers. The last factor obtained (have a high reward), it consists of a single item and covers the expected downgrade of working life.

Table 3 shows the results provided by the principal components analysis. Also, it provides the main statistical criteria given by the multiple regression between the attitude towards becoming an entrepreneur and the six factors identified by the PCA (statistical significance and explanatory and predictive power of the model).

According to above table, there are three factors which are positively correlated to the attitude towards entrepreneurship behavior: "Self-reliance" (with a predictive power of 50% of the expected change), "working to achieve personal fulfillment" (predictive power equal to 48% of the expected change) and "realize his dreams" (predictive power = 17.2%). The other factors are negatively correlated with attitude towards entrepreneurship behavior. Consequently, we can conclude that the hypothesis (H1) is verified: The attitude towards becoming an entrepreneur is determined by a set of professional beliefs (six factors previously yielded by PCA).

5.2.2. Verification of the second hypothesis (test of H2)

To check H2, we estimate a multiple regression model where subjective norm is the dependant variable and the independent variables are opinions of individuals' parents towards entrepreneurship, opinions of friends towards entrepreneurship, opinions of teachers towards entrepreneurship and opinions of others person (considered as important for the student) towards entrepreneurship.

Table 4 presents the analysis of variance. The four independent variables were statistically significantly associated with subjective norm ($F [479.18, 400] = 192; P < 0.01$) and accounted for 83% of variance in dependant variable. It's clear that the opinion of the family explained the most variance in subjective norm (40%), followed by the opinion of teachers (33%). According to the results previously identified, the third hypothesis can be accepted. So, the social environment impacts on entrepreneurial activity by contributing to the formation of positive attitudes towards entrepreneurship and enhanced perceived behavioural control which in turn influence entrepreneurial intention. According to analysis by the CPA, we have retained the four determinants of normative beliefs which are indicated in the first culm of Table 4.

Table 3: Multiple regressions between the attitude towards becoming an entrepreneur and its factors identified by the PCA

Items	Communalities extraction	Factor loading	Components yielded by PCA	Regression between the attitude towards becoming an entrepreneur and its factors identified by the PCA		
				Beta	Adjusted R ²	F
Enjoy working with people	0.580	0.621	Self-reliance	0.500****	0.174	14.980
Being your own boss	0.611	0.745				
Need for power	0.706	0.810				
Being autonomous in his work	0.675	0.742	Working to achieve	0.479****		
Desire to create	0.582	0.684	personal fulfillment			
meeting challenges	0.700	0.743				
Having job security	0.648	0.664	Having a stable job	-0.35****		
Having a non-stressful job	0.721	0.824	situation			
Have an interesting job	0.595	0.537	Realize his dreams	0.172***		
Realize his dreams	0.774	0.854				
Have free time for leisure, family, friends .	0.795	0.835	Having a satisfying	-0.287***		
Having a fixed income	0.609	0.625	extra-professional life			
Prefer compensation based on its contribution	0.824	0.865	Have a high reward	-0.112**		

****($P < 0.001$), ***($P < 0.05$), **($P < 0.1$). PCA: Principal component analysis

5.2.3. Verification of the third hypothesis (test of H3)

In order to reveal the factor structure of perceived behavioral control, factor analysis using principal components solution with varimax rotation was used for all the 14 items of the measurement instrument. During this process, all items that had a factor loading below 0.50 were excluded and only those with higher cross loadings were included. In the end, all these items were kept. Cronbach's alpha coefficient of reliability showed a high internal consistency of 0.85 and implied that the scale is reliable. The PCA revealed five factors that explain nearly 79% of the total variance. These factors are given in the fifth column of Table 5.

The first factor (perform the feasibility study) refers to a set of tasks relating to the collection of information needed to ensure the viability of the proposed project. The second factor (team spirit) refers to the profile of a leader that the student-

entrepreneur must have to keep an effective management team allowing to create a more efficient and capable business. The second factor (team spirit) refers to the profile of a leader allowing to have an effective management team, leading to create a more efficient and capable business. The third factor (personal involvement in the business project), it refers to someone's ability to invest in a project. This means knowing devote time and energy to the project. The fourth factor (project financing), presents the problem how to access to finance, which is a key driver in the business creation, survival and growth of innovative new ventures. Actually lack of finance in Tunisia typically prevents new ventures from investing in innovative projects and represents a critical problem for young Tunisian entrepreneurs. The last factor (benefit from domestic reform initiatives and entrepreneurial support structures in Tunisia), reflects the confidence of students in the entrepreneurial services

Table 4: Multiple regression between the subjective norm and the essential determinants of perceived social pressure

Explanatory variables	Non-standardized coefficients		Standardized coefficients	t	Significant	R ²	F
	B	Standard error	Beta				
Constant	0.050	0.037		1.330	0.184	0.83	479.2
Opinions of individuals' parents towards entrepreneurship	0.289	0.018	0.395	16.07	0.000		
Opinions of friends towards entrepreneurship	0.176	0.018	0.236	9.619	0.000		
Opinions of teachers towards entrepreneurship	0.277	0.020	0.330	13.87	0.000		
Opinions of others person towards entrepreneurship	0.230	0.020	0.278	11.41	0.000		

Table 5: Multiple regressions between the perceived behavioral control and its factors identified by the PCA

Principal components analysis used for assessing the validity of empirical measures for perceived behavioral control	Regression between the perceived behavioral control and the five factors identified by the PCA					
	Communalities extraction	Factor loading	Components yielded by PCA	Beta	Adjusted R ²	F
Identifying opportunities and shaping them into business concepts	0.755	0.745	Perform the feasibility study	1.147****	71.9%	205.7
Project risk estimation	0.754	0.776				
Estimating project costs	0.809	0.806				
Identify relevant information about markets and customers	0.818	0.787				
Complete the formalities before starting its business	0.759	0.567	Team spirit	0.620****		
Doing the business planning process	0.743	0.553				
Find people and organizations that can advise you on managing your business	0.707	0.651				
Finding competent people to work with you	0.797	0.837	Personal involvement in the business project	0.724****		
Ability to manage men	0.686	0.707				
Capable to devote his full time and attention to his work	0.773	0.688				
Prepare your business plan	0.799	0.776	Project financing	0.211****		
Obtain bank financing	0.862	0.778				
Identify/understand/evaluate one's competitors	0.839	0.671	Benefit from domestic reform initiatives and entrepreneurial support structures in Tunisia	0.354****		
Benefit of SME financing mechanisms highlighted by the Tunisian government to stimulate entrepreneurship in the various economic sectors	0.863	0.820				

****(P<0.001)

offered by Tunisian government, including the role played by the university in the development of entrepreneurship.

A correlation analysis was conducted to determine the relationship between perceived behavioral control and the five factors identified by the PCA. As shown in Table 5, there is positive and significant relationship between perceived behavioral control and the five components yielded by the Factor Analysis ($F [5, 400] = 205.5$; $P < 0.01$). All the antecedents of perceived behavioral control were statistically significant and accounted for 72% of variation expressed in the input data. This result does not reject hypothesis 3 and thus the perceived behavioral control is determined by a set of self-efficacy beliefs.

Additional questions were asked to assess students in a more precise the role of university in the promotion of entrepreneurial culture and entrepreneurship. These questions are as follows:

- Have you pursued courses in entrepreneurship and business creation?
- Do you consider training in entrepreneurship and business creation that you have received is favorable to engage in business creation?
- Do you think the courses offered at the university develop entrepreneurship among students?

For the first question, 76% of selected students had pursued entrepreneurship courses. 88% of selected students consider that entrepreneurship education in university focuses on the development of skills and promote a favorable culture to engage in business creation. Concerning the last question, only 60% of students assume that courses offered at the university develop entrepreneurship among students. These results highlight two important points. First, the high percentage of students who intend to start their own business in the future can be largely explained by the role played by the Tunisian university especially through suitable entrepreneurship education. Second, these universities must adapt their traditional roles in teaching and improve their educational pedagogy to develop entrepreneurship among students.

6. CONCLUSION

Entrepreneurship has been recognized as a key contributor to wealth generation and economic development. In that sense, universities can play a central role in nurturing entrepreneurship through knowledge creation and knowledge dissemination, as well as hands-on support for young entrepreneurs. Consequently, academic discussions and policy initiatives assume that universities face a challenging dual role as incubators of entrepreneurial awareness and competences, as well as role models for promoting and implementing an improved entrepreneurial culture.

Using the data from Tunisian context, the purpose of this study was to investigate the entrepreneurial intentions based on the theory of planned behaviour. The results confirms many previous findings presented in the literature review and support for the usability of this theory to analyzing and predicting entrepreneurial intentions (Ajzen, 2005; Souitaris et al. 2007; Basu and Virick, 2008; Gird and Bagraim, 2008; Engle et al., 2010; Müller, 2011; Angriawan

et al. 2012; Otuya et al. 2013, Malebana, 2014, Tarek, 2016). The results show that, attitude towards becoming an entrepreneur; perceived behavioural control and subjective norms are all significant predictors of entrepreneurial intention. Attitude towards becoming an entrepreneur appeal to better determine the formation of entrepreneurial spirit among Tunisian students. This means that efforts to improve entrepreneurial activity rates in Tunisia should begin with making entrepreneurship a desirable career option followed by various interventions that can increase the personal capability of starting a business. It had been also found that subjective norm exert a significant and positive influence on entrepreneurial intention, contrary to the results of some researchers (Ajzen, 1991; Krueger et al. 2000; Autio et al. 1997; Armitage and Conner, 2001; Liñán, 2004; Liñán and Chen, 2009).

Factor analysis by using principal components solution was applied in order to identify the factor structures of each conceptually independent antecedent of entrepreneurial intention. The objective of this factor analysis is first to identify key determinants of each antecedent of entrepreneurial intention and then focus on those factors identified in order to propose areas of actions to the Tunisian authorities to improve entrepreneurship and the creation of firms. For Attitude towards becoming an entrepreneur, the empirical measures obtained are self-reliance, working to achieve personal fulfillment, a stable job situation, dream realization, having a satisfying extra-professional life and obtaining a high reward. principal components analysis used for assessing the validity of empirical measures for perceived behavioral control are perform the feasibility study, Team spirit, personal involvement in the business project, project financing and advantages of domestic reform initiatives and entrepreneurial support structures in Tunisia. Concerning the subjective norm, the social environment impacts on entrepreneurial activity through four determinants: Opinions of individuals' parents, opinions of friends, opinions of teachers and opinions of others person (considered as important for student). These factors contribute to the formation of positive attitudes towards entrepreneurship and enhanced perceived behavioural control which in turn influence entrepreneurial intention.

According to this study, the theory of planned behaviour could be valuable in designing and evaluating the impact of education programmes on the entrepreneurial intentions of students for universities in Tunisia. For example, in entrepreneurship education programmes the theory of planned behaviour can be used to assess the impact of these programmes on changing the antecedents of entrepreneurial intention and ultimately entrepreneurial behaviour. Therefore, this study can be important for the government and university policy makers to understand how to develop and nurture potential entrepreneurs even while they are still students. Furthermore, entrepreneurial support programmes can be designed to change the mindsets, attitudes and intentions of those who have not thought about entrepreneurship as a viable career. In fact, it's an idea that has been widely tested by match studies which had find that participation in programmes motivating business creation substantially increases the perception of the viability of a business start-up (Fayolle and Gailly, 2004). They should be directed to the needs of those who have made up their minds to start their own ventures, which are according to this study equal to 60%. In this

case, support programmes should make it possible for one to start a business (Martin et al. 2013).

Tunisian universities can promote their strategic role in regional development through three pillars: Before university (promotion of entrepreneurial culture in scholar environment), in university (promotion of entrepreneurial culture and firm creation) and after university (accompanying university graduates' projects and research results commercialization). By adapting this approach, they can provide a basic scientific knowledge for industrial innovation and contribute to the social-economic development.

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