The Impact of BA Education over the Entrepreneurial Intentions of Jordanian Students: An Application of Theory of Planned Behavior.

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ABSTRACT

The purpose of this paper was to assess the effect of BA education over the entrepreneurial intentions of students in one Jordanian university. Applying Ajzen's (1991) theory of planned behavior (TPB), the paper proposed a framework linking BA education benefits (i.e. learning and resources utilization) to the antecedents of entrepreneurial intentions underlined in the TPB model (i.e. attitudes towards entrepreneurship, subjective norms and perceived behavioral control). To assess the proposed model and its associated hypotheses, several Statistical techniques were conducted on data collected from a sample of 564 students. Empirical results underlined a positive significant effect of learning over the three antecedents of entrepreneurial intentions. However, empirical results underlined the fact that resources utilization had a significant positive effect only over students' perceived behavioral control. Furthermore, empirical results indicated that there were no significant differences in students' entrepreneurial intentions according to their BA majors. Based on the paper's empirical findings, several conclusions were drawn. Furthermore, several practical implications were suggested, while limitations of this paper and future research avenues were addressed.

Keywords: entrepreneurship, entrepreneurial intentions, Theory of planned behavior (TPB), BA education, learning, resources utilization, entrepreneurial intentions questionnaire (EIQ).

INTRODUCTION

Entrepreneurship is an attitude that reflects an individual's motivation and capacity to identify an opportunity and pursue it, in order to produce new value or economic success (European Commission, 2003).The concept of entrepreneurship is usually associated with new business ventures starting by individuals with innovative ideas and small budgets, and expanding through time to become highly successful and productive organizations. The importance of entrepreneurship stems from its vital contribution to national economy through increasing economic efficiencies, brining innovation to market, creating new jobs and sustaining employment levels (Hindle and Rushworth, 2000; Shane and Venkataraman, 2000; Carree and Thurik, 2003, 2006; Beck wt al, 2005; Van Braag and Versloot, 2007; Wu and Wu, 2008). Hence, the challenge of moderate economic growth, together with persistently high levels of unemployment, stimulate expectations of entrepreneurship's potential as a source of economic growth and job creation (Carree and Thurik, 2003, 2006; Beck et al., 2005). Such challenges are typically associated with developing economies, one of which is Jordanian economy. With limited national resources and high unemployment levels, which are expected to increase considering Jordan's young population, Jordanian economy is in urgent need for young entrepreneurs welling to pursue new innovative, and profitable, ventures that contribute to its growth while reducing people's dependency on government to

Received on 9/8/2009 and Accepted for Publication on 14/2/2010.

provide secure jobs.

Appreciating such challenges, Jordan has witnessed considerable interest in the concept of entrepreneurship, especially during the last ten years. This interest was clearly manifested through his majesty King Abdullah II patronage of the first specialized conference on entrepreneurship in Jordan, ("Entrepreneurship Jordan" Conference/2004). Addressing conference participants, King Abdullah II underlined the need for encouraging what his majesty called "a new culture of entrepreneurship", whilst emphasizing the importance of such culture to the future of Jordan. In the same vine, her majesty queen Rania Al Abdallah established Queen Rania Center of Entrepreneurship (QRCE) in 2004 with a mission of supporting economic growth by providing an array of services in entrepreneurship development and technology commercialization (QRCE mission). Other governmental and international initiatives were also introduced to promote the concept and encourage people to engage in entrepreneurial endeavors (e.g. Queen Rania National Entrepreneurship Competition (QRNEC); Small Business Development Center (SBDC); Social Productivity Program (SPP); "Economic Empowerment of Women through Tourism" Project; "Women and Enterprise Development" Project; Jordan Micro Credit Company (JMCC); "Alriyadi" Project)

However, despite such interest on policy-maker level, empirical academic research on entrepreneurship in Jordan is still scarce, especially such research addressing the potential factors affecting entrepreneurial endeavors within the particular context of Jordan. Hence, the purpose of this paper is to study the entrepreneurial intentions of Jordanian university students applying the Theory of Planned Behavior (TPB). Whilst attempting to add more validity to TPB's application in the particular field of entrepreneurial intentions, the study's contribution lies in underlining the effect of BA education on Jordanian students' intentions of new venture creation. Understanding such effect could enable policy makers, higher education institutions and other interested parties, in providing a better platform for entrepreneurial endeavors.

The paper is organized under nine sections. Section two provides the theoretical background for the paper. Section three introduces the paper's objectives. Section four introduces the paper's proposed framework and associated hypotheses. Section five addresses the empirical study methodology and data analyses. Section six discusses empirical findings of the paper. Section seven introduces the paper's conclusions. Building on the paper's findings and conclusions, section eight considers some practical implications. Finally, section nine underlines the paper's limitations and suggestions for future research avenues.

THEORETICAL BACKGROUND:

Educational background and entrepreneurial intentions.

Despite providing ample evidence of its contribution to economic growth, scholars currently have limited understanding of factors and decision processes that lead an individual to become an entrepreneur (Markman et al., 2002). Addressing such challenge, social theorists argue that intentions toward a behavior would be the single best predictor of that behavior (Fishbein and Ajzen, 1975; Ajzen, 1991, 2001). In this sense, entrepreneurial intentions would be the first step in the evolving , and sometimes long process of venture creating, i.e. entrepreneurship (Lee and Wong, 2004). An "entrepreneurial intention" could be defined as a state of mind that people wish to create a new firm or a new driver inside existing organizations (Wu, and Wu, 2008).Hence, understanding the factors that influence and shape individuals' intentions of starting a business is

critical if programs and policies are to be developed to encourage entrepreneurial behavior (Kennedy et al., 2003).

Building on the above, Ample research has attempted to study the determining factors affecting individuals' entrepreneurial intentions (e.g. Kennedy at al, 2003; Klyver, 2007; Okonta and Pandya, 2007; Kickul et al., 2008; Fahed-Sreih et al., 2009; Gotsis and Kortezi, 2009; Shwarz et al., 2009). A considerable stream of that research was devoted to explore the association between individuals education and their entrepreneurial intentions. Table 1 presents a number of studies empirically examining the association between education and students entrepreneurial intentions in different countries.

Table 1. Research on the Relationship Between Education and Entrepreneurial Intentions.

Author(s)	Research Locale/Sample	Major Findings
Colvereid & Moen (1997)	Norwegian university graduates	Graduates with an entrepreneurship major are more likely to start new businesses and have stronger entrepreneurial intentions than other graduates.
Brice, JR (2004)	404 students of upper-level business undergraduates and Master of Business Administration (MBA) and professional-degree students from the College of Veterinary Medicine. Large southeastern university, U.S.	Students in higher education are more likely to form entrepreneurial intentions than others. Personality dimensions have different association with students entrepreneurial intentions.
Franke & Luthje (2004)	Comparison of entrepreneurial intentions of students at two German-speaking universities (the Vienna University of Economics and Business Administration and the University of Munich) with the corresponding results for Massachusetts Institute of Technology (MIT).	Findings reveal very distinct patterns of entrepreneurial spirit in these universities. The results also suggest that the lower level of founding intentions among students in Munich and Vienna may be attributed to their less distinctive entrepreneurship education.
Frank et al., (2005)	900 Austrian pupils at secondary-level schools.	entrepreneurial orientation as well as inclinations to start up a new business can indeed be influenced considerably, with potential targeted influences at the personality level, in the education process, and in the pupil's immediate and general environment.

Author(s)	Research Locale/Sample	Major Findings
Zhao et al., (2005)	MBA students across five universities, U.S.	Formal entrepreneurship learning (opportunity recognition, opportunity evaluation, starting a business, corporate entrepreneurship) is positively related entrepreneurial intentions through the mediating role of self efficacy.
Galloway et al., (2006)	128 students from different disciplines at Hariot-Watt University, UK.	Students in engineering and science disciplines have less entrepreneurial intentions than students in business/management disciplines.
Oosterbeek et al., (2007)	analyzes the impact of "Junior Achievement Student Mini-Company" program on a Dutch college students.	the program does not have the intended effects: students' self-assessed entrepreneurial skills remain unaffected and students' intentions to become an entrepreneur even decrease significantly.
Hamidi et al., (2008)	Participants in graduate entrepreneurship programs	Creativity and prior entrepreneurial experience of students are positively associated with entrepreneurial intentions.
Harris & Gibson (2008)	Graduate students enrolled in the Small Business Institute (SBI) program at multiple universities in USA.	SBI and other similar training/education programs provide the opportunity for direct entrepreneurial exposure. Their ability to impact attitudes toward entrepreneurship provides avenues for career opportunities.
Jones et al., (2008)	Students at the "Starting a New Enterprise" course in Poland.	Entrepreneurial education informs entrepreneurial intent and career aspirations.
Turker & Selcuk (2009)	Sample of 300 university students in Turkey	Educational structural and support factors affect the entrepreneurial intention of students

While not claiming to be exhaustive in nature, Table 1 provides evidence to the importance of relative entrepreneurial education to the development of entrepreneurial intentions, especially amongst university students. Recently, entrepreneurial intentions of university students have received considerable interest among researchers (Fayolle et al., 2006; Wu & Wu, 2008). This interest could be motivated by the fact that a university degree provides a unique opportunity for students to explore their career horizons, while, at the same time, providing them with necessary knowledge and skills to create their own businesses. Table 1 further echoes Fayolle et al'.s (2006) observation that entrepreneurial intentions are associated with higher education in general (e.g. Brice, JR; 2004; Galloway et al., 2006) and entrepreneurship education programs (EEP) in particular (e.g. Harris and Gibson, 2008; Jones et al., 2008).

However, while table 1 provides empirical evidence of the positive relationship between university education and entrepreneurial intentions. It should be underlined

that such relationship is not always positive or straightforward. For example, Uhlaner and Thurik (2004) found that a higher level of education in a country is accompanied by a lower rate of nascent and young entrepreneurship. Furthermore, and in a cross Atlantic study, Blanchflower (2004) declared that education was positively correlated with self-employment in the US but negatively in Europe. In addition, and using Eurobarometer data, Grilo and Irigoyen (2005) reported a U-shaped relationship for 2000, while Grilo and Thurik (2005) found that this relation was negative up to the inter-mediate education level and non-existent for higher levels. Such contradictions in findings underline the argument that whether university education influences entrepreneurial perceptions and intentions requires further research (Collins et al., 2004; Parker, 2005), especially since it represents a context specific phenomenon which might be affected by cultural and individual differences.

The Theory of Planned Behavior: Explaining the Relationship between Education and Entrepreneurial Intentions.

The Theory of Planed Behavior (TPB) is one of the most applied theories in studying individuals intentions towards a behavior. Introduced by Ajzen (1991), TPB suggests that any behavior that requires a certain amount of planning can be predicted by the intention to adopt that behavior. It is a theory that may be applied to nearly all voluntary behaviors and it provides quite good results in very diverse fields, including the choice of professional career (Kolvereid, 1996; Ajzen, 2001). In the TPB model, three variables precede the formation of intention, which itself predicts behavior (Audet, 2004). As shown in figure 1, the three independent variables preceding intention are ; *(1) Attitude Towards The Behavior,* which is a reflection of beliefs and opinions held by an individual about the behavior. *(2) Subjective Norm,* which refers to the degree to which the behavior will comply with the wishes of important others. *(3) Perceived Behavioral Control,* which is defined as a person's perception of his/her ability to perform the specific behavior (Wu & Wu, 2008). The more favorable the attitude and subjective norm with respect to the behavior, and the greater the perceived behavioral control, the stronger the intention to perform the behavior should be (Autio et al., 1997).

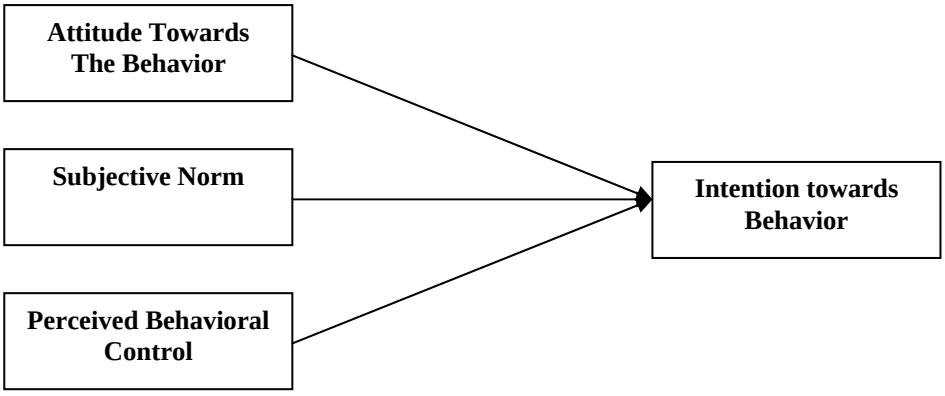

Figure 1. Ajzen's (1991) TPB Model.

TPB has witnessed considerable implementation in studying individuals' entrepreneurial intentions in different contexts (e.g. Krueger, 1993; Kolvereid, 1996; Krueger et al; 2000; Fayolle et al., 2006). It was also applied by several

researchers to explore the relationship between different demographic variables (e.g. age. Gender, family and interest groups, work experience) and entrepreneurial intentions of university students (e.g. Linan-Alcalde and Rodriguez-Cohard,2004; Linan and Chen, 2006; Van Gelderen et al., 2008). However, very few researches using the TPB model have been done concerning the relationship between educational background and entrepreneurial intention (WU & Wu, 2008). The following paragraphs discuss three major studies contributing to this particular domain;

- The study of Fayolle, Gailly and Lassas-Clerc (2006)

Emphasizing the need for a common framework to evaluate different Entrepreneurship Education Programs (EEP), Fayolle et al., (2006) suggested that limiting the evaluation of EEP's to their impact in terms of new venture and job creations can be misleading and short-sighted, as the impact on participants of those programs can be complex and in some cases visible after some delay. Hence, Fayolle et al., (2006) proposed that the evaluation of any EEP should be based upon its ability to ignite entrepreneurial intentions of those attending it. Referring to the existence of a number of intentional models that have been used to try to explain the emergence of entrepreneurial behavior, Fayolle et al., (2006) developed and empirically tested a framework based on the TPB model. Their decision to adopt the TPB model was based on two observations. The first was related to recent empirical attention devoted to the application of TPB in the field of entrepreneurship research, and the validity of TPB model, due to repeated application and empirical testing. The second was related to the fact that the TPB model remains open to the influence of "exogenous variables" that may play a role in the development of beliefs and attitudes (Fayolle et al., 2006). Fayolle et al'.s (2006) proposed framework suggested that, as an exogenous variable, EEPs influence participants' attitudes towards entrepreneurship, their subjective norms and their perceived behavioral control, hence influencing their entrepreneurial intentions.

In their framework, Fayolle et al., (2006) suggested that any EEP has four major characteristics; institutional setting and audience, type of EEP and its objectives, EEP contents and, finally, "teaching and training" methods and approaches. They suggested that those characteristics can be related to the EEP itself (whether or not the student attend a program) or to some specific dimensions related to its design and implementation. To test their proposed framework Fayolle et al., (2006) conducted a small experiment on a group of 20 students having attended an elective one-day course of entrepreneurship in a French engineering school. To measure the impact of EEP, the students were addressed before and after the EEP, two multi-item Likert-scale closed questionnaires (in French) aimed at measuring changes in their attitudes, perceptions and intentions. Those questionnaires, translated from the questionnaires developed and validated by Kolvereid (1996), provided measures of attitudes towards the behavior, subjective norms, perceived behavioral control and intention before and after the EEP (Fayolle, et al., 2006. p. 713).

Empirical results of the experiment showed that the framework presented by Fayolle et al., (2006) allowed for the implementation of TPB-based approach to assess EEP and that measurable and actionable impact can be identified using this framework even in small-scale experiments. The results further suggested that the approach adopted by Fayolle et al., (2006) can be implemented in a wide range of context and settings in order to assess, compare and/or improve EEP in a systematic and rigorous manner.

- The study of Souitaris, Zebinati and AL-Laham (2007)

Souitaris et al., (2007) applied TPB to test the effect of entrepreneurship programs on entrepreneurial attitudes and intentions of science and engineering students in two universities (London and Gernoble). Declaring that

entrepreneurship programs had not been empirically linked with change in attitude and intention towards self employment, Souitaris et al., (2007) based their decision to apply TPB on previous empirical results in entrepreneurship research which broadly confirmed the theory's predictions regarding the relationship between attitudes (attitude towards self-employment, subjective norm and perceived behavioral control) and intention towards self-employment (Kolvereid, 1996; Krueger at al, 2000; Luthje and Franke, 2003). Souitaris et al., (2007) proposed that entrepreneurship education programs had three types of benefits to students: learning, inspiration and incubation resources. Applying a pretest-post-test quasi experimental design, where data was collected before and after an entrepreneurship program. Souitaris et al., (2007) used the TPB model to assess the effects of entrepreneurship program benefits on students' self employment intentions; i.e. entrepreneurial intentions. As in Fayolle et al'.s (2006) study, TPB variables were empirically measured using the questionnaire developed and validated by Kolvereid (1996). Souitaris et al'.s findings illustrated that entrepreneurship programs are a source of trigger-events, which inspire students through arousing their emotions and mindsets, hence raising entrepreneurial attitudes and intentions. Finally, and appreciating the special and focused nature of entrepreneurship programs, Souitaris et al., (2007) called for research designs based on a number of programs with varying levels of entrepreneurship knowledge offerings, i.e. non-entrepreneurship focused programs. They further invited researchers for longitudinal testing of TPB.

- The study of Wu and Wu (2008).

Acknowledging the numerous approaches available for studying entrepreneurial intentions, Wu and Wu (2008) declared that TPB was a valuable tool for understanding the process of new venture creation regardless of cultural differences. They adopted West and Hore's (1989) argument that the potential impacts of higher education on students include three aspects: the first is about their personal development, including changes in attitudes and values; the second is to do with changes in their abilities; and the third with possible social impacts. Such aspects were deemed consistent with the components of the TPB model by Wu and Wu (2008). The framework developed by Wu and Wu (2008) was tested on a sample of 180 students of Tongji University in Shanghai , China. Structural equation modeling was used to assess the impact of educational background over entrepreneurial intentions through the antecedents of entrepreneurial intentions included in the TPB model (i.e. personal attitude, subjective norms and perceived behavioral control). Wu and Wu (2008) applied the Entrepreneurial Intention Questionnaire (EIQ) developed by Linan and Chen (2006) to measure TPB components, while educational background was divided into four major components; educational level (diploma, undergraduate, postgraduate), academic major (entrepreneurship related majors, non- entrepreneurship related majors, engineering), academic achievement (high, low) and entrepreneurship education.

The main result of their study suggested that the diversity of educational background offered plausible explanations to the difference of entrepreneurial intentions of Chinese students. Furthermore, Wu and Wu (2008) declared that students who had entrepreneurship education showed a greater intention to start-up businesses than those who hadn't. Interestingly, though, and with regard to academic majors, the results of their study indicated that "engineering" students had the highest tendency to start-up business than those with entrepreneurship related and non-entrepreneurship related majors. Such result was contradicting with earlier work by Guerrero et al., (2006) who found that students in entrepreneurship related majors had the highest tendency to start-up businesses. Based on their findings, Wu and Wu (2008) suggested

redesigning curriculums and courses to help students in non-entrepreneurship related majors develop knowledge and skills required to start and run business. Finally, and addressing the lack of standardization of educational background in previous literature, Wu and Wu (2008) suggested that future research could be oriented to redefine the variables that compose the educational background construct.

Careful study of the above research underlines the following observations:

1. The application of the TPB model to test the effect of educational background over entrepreneurial intentions has sound justification. The model was able to provide valuable associations and results in different contexts and with different educational programs and backgrounds. Yet, further empirical examination of the model in different contexts and cultures might add to its validity, or highlight some of its limitations.

2. The operationalization of educational "background" or "program" has varied amongst studies due to differences in contexts and nature of programs investigated. This issue was considered worthy of consideration and special focus in future research (Wu and Wu, 2008). Yet, the nature of educational background, or program, remains a context specific concept which differs between different countries with relatively different cultures.

3. TPB variables were measured quantitatively using previously developed questionnaires. While the questionnaire developed by Kolvereid (1996) has been successfully applied by Fayolle et al., (2006) and Souitaris et al., (2007). Wu and Wu (2008) successfully adopted the EIQ developed by Linan and Chen (2006). The EIQ is a relatively new measurement instrument and needs further empirical testing to prove its validity.

Paper objectives:

The main purpose of this paper is to underline the effect of university BA education over the entrepreneurial intentions of Jordanian students. In addition to its main purpose, and in relation to observations of previous research, the paper has a number of objectives:

1. To further contribute to the validity of the TPB model as a useful measurement instrument of entrepreneurial intentions.

2. To provide an operationalization of "BA education benefits" suitable to the specific context of Jordanian university education.

3. To further contribute to the validity of the EIQ through applying it in a different culture, an issue underlined by Linan and Chen (2006) as a recommendation for future research.

Paper Framework and Hypotheses:

Building on previous research, figure 2 presents the paper's proposed framework. Having underlined the rationale for using the TPB model to assess the impact of education over entrepreneurial intentions (Fayolle et al., 2006; Souitaris et al., 2007; Wu and Wu, 2008), and appreciating the empirically sound relationships of the model, the framework proposes the following hypotheses:

H1: Personal attitude towards entrepreneurship positively affect Jordanian students' entrepreneurial intentions.

H2: Subjective norms positively affect Jordanian students' entrepreneurial intentions.

H3: Perceived behavioral control positively affects Jordanian students' entrepreneurial intentions.

In addition to its effect over Jordanian students' entrepreneurial intentions, figure 2 proposes that Jordanian students' "subjective norms" affect both their "attitudes towards entrepreneurship" and their "perceived behavioral control". Such effect was examined empirically in previous research (i.e. Linan

and Chen, 2006), and is based upon the argument that the families, friends and colleagues of Jordanian students affect their beliefs and opinions towards entrepreneurship, in addition to affecting Jordanian students' perceptions of their abilities to establish new entrepreneurial projects. Hence:

H4: Subjective norms of Jordanian students positively affect their attitudes towards entrepreneurship.

H5: Subjective norms of Jordanian students positively affect their perceived behavioral control.

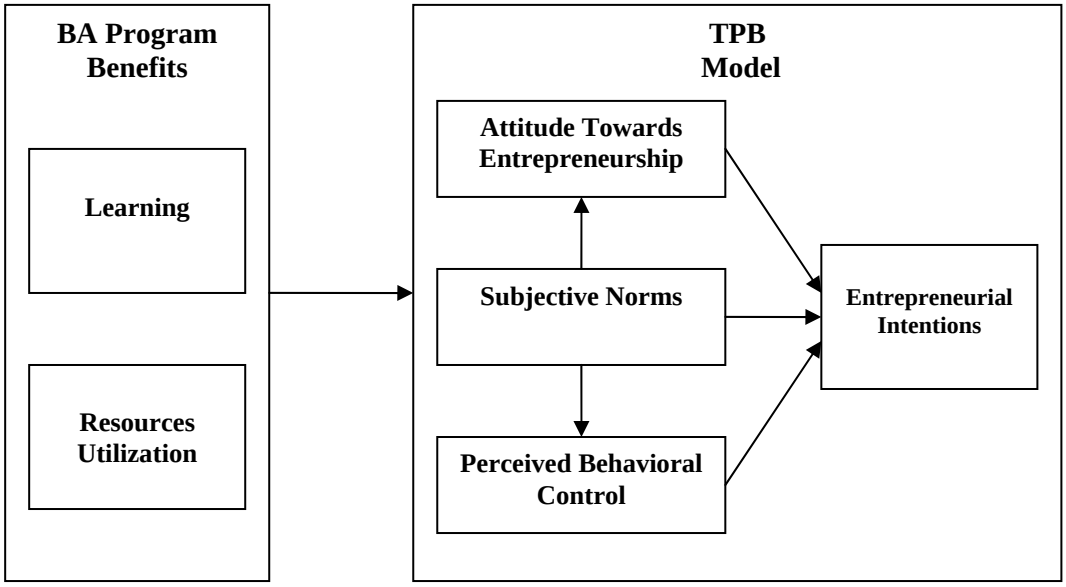

Figure 2. Study's Proposed Framework

Notwithstanding the fact that the TPB model remains open to the influence of exogenous factors (Fayolle et al., 2006), the framework suggests that BA education affects Jordanian students entrepreneurial intentions through the benefits it provides to them. BA education in general has two major benefits to students; the first one is learning which refers to education-derived knowledge students seek from enrolling in a BA program. The second benefit is the opportunity to utilize the resources available in universities, which can enhance students' horizons and add to their knowledge about the majors they study. While learning was considered as an entrepreneurship program benefit in Souitaris et al., (2007) framework, Fayolle et al'.s (2006) framework considered it as one of the characteristics of entrepreneurship education programs.

With regard to "resources utilization", it was also included in Souitaris et al., (2007) framework under the term "incubation resources". On the other hand, Fayolle et al., (2006) used the term "institutional setting" to describe it in their framework. While Fayolle et al'.s (2006) and Souitaris et al'.s (2007) frameworks contained other variables, "learning" and "resources utilization" were deemed suitable for assessment in the context of Jordanian universities since they overcome the fact that Jordanian universities do not provide entrepreneurship focused majors, while at the same time serving the paper's purpose and objectives.

Learning and Students' Entrepreneurial Intentions:

Learning represents the education-derived knowledge students seek from enrolling in a BA program. It is the most sought after, and anticipated, benefit of education in general, and BA education in particular. Shepherd and DeTienne (2005) suggested that prior knowledge, which might be derived from experience or education, was associated with the identification of a greater number of entrepreneurial opportunities and with ones that are more innovative. Furthermore, Souitaris et al., (2007) suggested that knowledge, and in particular education-derived knowledge, leads to more and better opportunity-identification ability and, consequently, a raise in entrepreneurial attitudes and intentions of students. In the context of this paper, and in accordance with Shepherd and DeTienne (2005) and Souitaris et al'.s (2007) suggestions, it is anticipated that BA programs provide students with a number of insights which constitute learning as a benefit. Firstly, they introduce students to the idea of, and the motivation behind, own venture creation. Secondly, they develop students' managerial and communication skills necessary to establish new businesses. Thirdly, and perhaps more importantly, they broaden students' horizons to explore and identify new business opportunities in the market. Hence, it is anticipated that learning derived from BA programs should have a positive effect over students' entrepreneurial intentions:

H6: Learning derived from BA programs has a positive significant effect over Jordanian students' entrepreneurial intentions.

According to the theory of planned behavior, external factors exert their direct influence only on the antecedents of intention (Linan and Chen, 2006). Hence the effect of learning over Jordanian students' entrepreneurial intentions is anticipated to take place through its effect over entrepreneurial intentions' antecedents underlined in the TPB model (i.e. attitudes towards entrepreneurship, subjective norms and perceived behavioral control):

H6a: Learning derived from BA programs has a positive significant effect over Jordanian students' attitudes towards entrepreneurship.

H6b: Learning derived from BA programs has a positive significant effect over Jordanian students' subjective norms with regard to entrepreneurship.

H6c: Learning derived from BA programs has a positive significant effect over Jordanian students' perceived behavioral control with regard to entrepreneurship.

Resources utilization and Students' Entrepreneurial Intentions::

Through attending BA programs, students can utilize a number of human, technological and knowledge-related resources available in universities. As Souitiras et al., (2007) explain, students can relate to a group of entrepreneurial-minded classmates in order to build a team, they can get advice from lecturers. Furthermore, and due to their university association, students can get access to technology with commercial potential (e.g. Internet), access research resources (e.g. market research and library databases) and use universities' physical place for meetings. The influence of available resources over students' entrepreneurial intentions was acknowledged by both Fayolle et al., (2006) and Souitaris et al., (2007). Considering it as a program content, and referring to it as institutional setting, Fayolle (2006) referred to previous literature emphasizing the importance of internal culture, entrepreneurship dedicated structures, resources and mechanisms towards entrepreneurial intentions. On the other hand, and building on previous research in

entrepreneurship (i.e. Schumpter, 1934; Stevenson and Jarillo, 1990), Souitaris et al., (2007) described entrepreneurs as resource-starved individuals welling to take control of available resources in their pursuit to take advantage of an opportunity. Souitaris et al., (2007) suggested that the benefit of utilizing the free resources provided as part of an entrepreneurship program would tempt students to start a business and therefore raise their entrepreneurial attitudes and intentions.

In association with Souitaris et al'.s (2007) suggestion, the study proposes that the utilization of free resources provided by Jordanian universities as part of BA programs would positively affect students' entrepreneurial intentions. Hence:

H7: The utilization of resources available in a university has a positive significant effect over Jordanian students' entrepreneurial intentions.

As proposed earlier, the relationship between the benefit of "resources utilization" and entrepreneurial intention is anticipated to take place through the influence "resources utilization" has over the antecedents of entrepreneurial intentions underlined in the TPB model. Hence;

H7a: The utilization of resources available in a university has a positive significant effect over Jordanian students' attitudes towards entrepreneurship.

H7b: The utilization of resources available in a university has a positive significant effect over Jordanian students' subjective norms with regard to entrepreneurship.

H7c: The utilization of resources available in a university has a positive significant effect over Jordanian students' perceived behavioral control with regard to entrepreneurship.

Finally, and in relation to the paper's proposed framework, previous empirical findings have underlined that differences in BA majors/disciplines have caused differences in students levels of entrepreneurial intentions (Kolvereid and Moen, 1997; Galloway et al., 2006; Wu and Wu, 2008). Such findings are worthy of consideration, especially with samples consisting of students from different majors, since they underline variances in entrepreneurship focus between different majors. Furthermore, such findings are of great relevance to this paper since that there is no entrepreneurship focused BA majors provided by Jordanian universities. Hence, and in relation to the specific context of Jordan:

H8: There are significant differences in Jordanian students' entrepreneurial intentions according to their majors.

Consistent with earlier suggestions, and hypotheses, its is anticipated that differences in Jordanian students entrepreneurial intentions according to their majors will be caused by differences in the antecedents of students' entrepreneurial intentions. Hence:

H8a: There are significant differences in Jordanian students' attitudes towards entrepreneurship according to their majors.

H8b: There are significant differences in Jordanian students' subjective norms according to their majors.

H8c: There are significant differences in Jordanian students' perceived behavioral control according to their majors.

METHODOLOGY:

Constructs Operationalization and Measurement:

Constructs addressed by this study, figure 2, were measured quantitatively through a questionnaire instrument. Previously developed measurement scales were applied to measure the constructs examined in the questionnaire. Since they were translated to Arabic, two

focus groups, consisting of business and engineering students, were formed to assess and refine measurement scales adopted. Such endeavor has resulted in some modifications to the terms used in the final questionnaire. Content validity of the questionnaire was also assessed by a number of academics which proved to be very useful and added further refinement to the questionnaire. All items in the questionnaire were measured using a 5-point Likert scale. Table 2 shows the measured constructs, their operational definitions, the source(s) of measurement scales and the number of items measuring each construct.

Entrepreneurial intention model:

Entrepreneurial intention and its drivers were assessed using the Entrepreneurial Intentions Questionnaire (EIQ) developed by Linan and Chen (2006). EIQ was tested by Linan and Chen (2006) on a two-country sample of Taiwanese and Spanish students. Furthermore, Wu and Wu (2008) applied EIQ to assess the relationship between educational background and entrepreneurial intentions of Chinese students. While the validity and reliability of EIQ were satisfactory in both studies, Linan and Chen (2006) recommended further examination and refinement of EIQ in different contexts. According to the TPB model, an entrepreneurial intention has three major drivers; attitude towards entrepreneurship, subjective norms and perceived behavioral control. In this study, attitude towards entrepreneurship was defined as a "reflection of the beliefs and opinions held by Jordanian students towards creating their own firms". 5 items adopted from the EIQ were used to measure this construct. With regard to subjective norms, they were defined as "the degree to which Jordanian students' decision to establish their own firms complied with the wishes of significant others, i.e. family, friends and colleagues". 3 items adopted from the EIQ were used to measure this construct. As for perceived behavioral control, it was defined as Jordanian students' perceptions of their ability to establish their own firm. 6 items derived from the EIQ were used to measure this construct. Finally, entrepreneurial intentions were defined as "Jordanian students' wish to create their own firm" (Wu and Wu, 2008).6 items derived from the EIQ were used to measure this construct.

Exogenous factors:

Figure 2 underlines two exogenous factors affecting the antecedents of Jordanian students' entrepreneurial intentions:

Learning:

Leaning was defined as "education derived knowledge which could enable Jordanian students of establishing their own firms". According to Wu and Wu (2008), Johannisson (1991) identified five learning levels which could be derived from an entrepreneurship program; the know-why (attitudes, values, a motivations of entrepreneurs), the know-how (abilities of entrepreneurs), the know-who (short and long-term social skills of entrepreneurs), the know-when (entrepreneurial intuition) and the know-what (entrepreneurial knowledge). Based on Johannisson's (1991) classification of learning derived from entrepreneurship programs, Souitaris et al., (2007) developed a perceptual scale of 5 items to measure learning. Those items were applied by this study to measure learning derived from BA programs.

Resources Utilization:

This construct was defined as "the extent to which Jordanian students use available resources in university in a way that enables them of establishing their own firms". Fayolle et al., (2006) and Souitaris et al., (2007) underlined a wide variety of resources universities settings can provide for students in order to use and benefit from in their entrepreneurial endeavors. In the context of this study, four major resources were chosen based on their availability in all Jordanian universities;

faculty members, university library, colleagues and Internet. 4 items underlining such resources were used to measure the resources utilization construct.

Table 2: Constructs Operational Definitions and Measurement Items.

construct	Operational definition	measurement items	Source(s)
Attitude towards entrepreneurship	Jordanian students' beliefs and opinions towards establishing own firm.	AT1. Own firm advantages vs. disadvantages AT2. Attraction of "new firm" idea AT3. Desire to establish new firm AT4. personal satisfaction with own firm AT5. Own firm as a career option	Linan and Chen (2007)
Subjective norms	The degree to which Jordanian students' decision to establish own firm complies with wishes of their significant others	Sn1. Close family Sn2. Friends Sn3. Colleagues	Linan and Chen (2007)
Perceived behavioral control	Jordanian students' perceptions of their ability to establish own firm	PC1. Ability to establish new firm PC2. Readiness to establish new firm PC3. Ability to keep own firm working PC4. Knowledge of necessary details to establish new firm PC5. Knowledge of how to establish new firm PC6. Probability of new firm future success	Linan and Chen (2007)

construct	Operational definition	measurement items	Source(s)
Entrepreneurial intentions	Jordanian students' wish to create their own new firm	EI1. Willingness to do anything to establish new firm EI2. New firm as a professional goal EI3. Willingness to do anything to establish and run own firm EI4. Determination to establish new firm in future EI5. Serious thinking of new firm creation EI6. Intention to establish own firm in the future	Linan and Chen (2007
Leaning	Education- derived knowledge which enables Jordanian students to establish their own firms	L1. Understanding firm owners motivations L2. Understanding requirements to establish own firm L3. Enforcement of own firm management capabilities L4. Enforcement of networking capabilities L5. Enforcement of opportunities recognition capabilities	Johannisson (1991), Fayolle et al., (2006), Souitaris et al., (2007),
Resources utilization	The extent to which Jordanian students use resources available in university in a way that enables them of establishing their own firms	RU1. Academic staff RU2. University library RU3. Colleagues RU4. Internet	Fayolle et al., (2006), Souitaris et al., (2007)

Sample and Data Collection:

The study adopted a judgmental sampling technique. Data were collected using a questionnaire survey administered personally and evenly to 640 students studying both business and engineering related majors in Mu'tah University, a Jordanian university located to the south of Jordan. While consistent with previous empirical research (i.e. Wu and Wu, 2008), the purpose of choosing business and engineering students as units of analysis was to underline any differences in students' entrepreneurial antecedents caused by differences in their academic majors. One important criteria of students selection was their predicted year of graduation. Business students in the sample were in their third and

fourth years, while engineering students were in their fourth and fifth years. The argument behind such criteria was that students in those years should be considering their career options more seriously since they are nearing graduation (Linan and Chen, 2006). Due to the personal method of their distribution and collection, all 640 administered questionnaires were returned. However, only 564 students provided usable survey responses. Detailed descriptive statistics relating to the respondents' characteristics are shown in Table 3.

Table 3. Respondents characteristics

Characteristic	Frequency	Percentage
Academic Major		
Business related	283	50.2%
Engineering related	281	48.8%
Total	564	100%
Gender		
Male	350	62.1%
Female	214	37.9
Total	564	100%
Age		
18-22	474	84%
23-25	82	14.5%
26-above	8	1.4%
Total	564	100%

Data Analysis:

Empirical analysis has attempted to achieve three objectives:

1. Assessing the validity and reliability of constructs measured by this study, especially those adopted from EIQ.

2. Assessing the validity of the TPB model in the specific context of Jordanian students' entrepreneurial intentions.

3. Testing the proposed framework and its associated hypotheses in relation to the influence of exogenous factors (i.e. BA program benefits) over the antecedents of students' entrepreneurial intentions.

The following sections provide detailed empirical analyses conducted to achieve the above objectives.

Construct validity and Reliability:

Construct validity.

With the exception of items measuring demographic variables, all the items included in this paper's questionnaire were derived from pervious literature. 20 items were derived from Linnan and Chen's (2006) EIQ to measure respondents' entrepreneurial intents. EIQ was developed to capture the constructs underlined by Ajzen's (1991) theory of planned behavior (TPB) and its associated model. Applied in the entrepreneurship context, the TPB model includes four major constructs, figure 2, three of those constructs represent the antecedents of an entrepreneurial intention (attitude towards entrepreneurship, subjective norms and perceived behavioral control) while the forth represents entrepreneurial intention itself (Fayolle et al., 2006; Linan and Chen, 2006; Soutiaris et al., 007). The paper's questionnaire also included 5 items derived from Johannisson (1991) and Souitaris et al'.s (2007) work to capture the "learning" construct. Furthermore, 4 items were derived from Johannisson (1991), Fayolle et all (2006) and Souitaris et al'.s (2007) research to capture the "resources utilization" construct. Applied in a relatively new context, the questionnaire needed to establish validity and reliability, especially when considering that EIQ derived items were relatively new and needed further validation (Linnan and Chen, 2006).

Having established content validity of the questionnaire, in section 5.1, the first step in data analysis was to assess its construct validity. According

to Hair et al., (2003), exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are used to assess construct validity. EFA is performed to operationalize all of the model's constructs and to test the extent to which the items measuring each construct are tapping the same construct. In accordance with Hair et al., (2003) and Field (2000) suggestions, four commonly used assumptions to assess EFA were followed; (1) sampling adequacy (Kaiser-Meyer-Olkin measure greater than 0.5) (2) the minimum Eigen value for each factor to be one (3) considering the sample size, factor loading of 0.40 for each item was considered as the threshold for retaining items to ensure greater confidence and (4) Varimax Rotation was used since it is a good general approach that simplifies the interpretations of factors.

Applying the Statistical Package for Social Sciences (SPSS) to run EFA on the sample, results were generally satisfactory. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was higher than 0.5 for all EFA tests. Such results indicated that factor analysis was an adequate instrument to use in assessing the questionnaire's construct validity. As table 4 shows, most of the questionnaire items loaded on their intended constructs. Such results were consistent with previous literature on TPB, EIQ, learning and resources utilization. However, item number 1 of "subjective norms" (close family) didn't load on any construct, indicating a weak loading. Pallant (2001) suggests that, based on theory, the contents of variables are up to the researcher to propose possible interpretations. Hence, a possible explanation to the weak loading of item number 1 measuring "subjective norms" is that, during their university study, Jordanian students are affected by their peers of similar age, i.e. friends and colleagues, more than their own families when deciding upon their future career options. Nevertheless, in order to achieve robust empirical results, item number 1 of "subjective norms" was deleted.

Confirmatory factor analysis (CFA) represents a more rigorous test of unidimensionality (Garver and Mentzer, 1999, p40). Hence, it was utilized to confirm and refine the unidimensionality of measurement items that resulted from EFA. To assess the CFA, several measures of models' goodness-of-fit were followed (Chau, 1997, p. 318): Chi-square ($P \geq 0.05$); goodness-of-fit index ($GFI \geq 0.90$); adjusted goodness-of-fit index ($AGFI \geq 0.80$); normed fit index ($NFI \geq 0.90$); non-normed fit index ($NNFI \geq 0.90$); comparative fit index ($CFI \geq 0.90$); and root mean square error of approximation ($RMSEA < 0.10$). Factor loadings are the correlations of the variables with the factor, the weighted combination of variables which best explains the variance. Higher values (e.g. more than 0.40) making the variable representative of the factor (Hair et al., 2003, p. 106).

EQS6 program was run on the sample to assess the questionnaire's CFA. Such endeavor has resulted in deleting five other items of the questionnaire for errors caused by weak factors loadings, which negatively affected the tested models' goodness-of-fit. The deleted items were; item number 1 measuring "attitude towards entrepreneurship", items number 1 and 2 measuring "perceived behavioral control", item number 1 measuring "entrepreneurial intentions" and item number 3 measuring "resources utilization". Table 5 shows the measurement models of the study's constructs and a summary of each model goodness-of-fit. All the goodness of fit measurement models in the table were satisfactory, thus, confirming EFA findings and indicating construct validity of the questionnaire after deleting weak items.

Table 4. Exploratory Factor Analysis for Model Constructs.

Model Constructs	EFA Results					
	F1	F2	F3	F4	F5	F6
Attitudes Towards Entrepreneurship						
AT1. Own firm advantages vs. disadvantages	0.410					
AT2. Attraction of "new firm" idea	0.720					
AT3. Desire to establish new firm	0.722					
AT4. Personal satisfaction with own firm	0.698					
AT5. Own firm as career option	0.576					
Subjective Norms						
SN1. Close family						
SN2. Friends		0.828				
SN3. colleagues		0.795				
Perceived Behavioral Control						
PC1. Ability to establish new firm			0.618			
PC2. Readiness to establish new firm			0.719			
PC3. Ability to keep own firm working			0.601			
PC4. Knowledge of necessary details to establish new firm			0.738			
PC5. Knowledge of how to establish new firm			0.713			
PC6. Probability of new firm future success			0.565			
KMO	0.794					
Entrepreneurial Intentions						
EI1. Willingness to do anything to establish new firm				0.603		
EI2. New firm as a professional goal				0.750		
EI3. Willingness to anything to establish and run own firm				0.771		
EI4. Determination to establish new firm in future				0.788		
EI5. Serious thinking of new firm creation				0.661		
EI6. Intention to establish own firm in the future				0.775		
KMO	0.856					
Learning						
L1. Understanding firm owners motivations					0.720	
L2. Understanding requirements to establish own firm					0.783	

L3. Enforcement of own firm management capabilities					0.789	
L4. Enforcement of networking capabilities					0.736	
L5. Enforcement of opportunities recognition capabilities					0.780	
KMO	0.823					
Resources Utilization						
RU1. Academic staff						0.692
RU2. University library						0.740
RU3. Colleagues						0.650
RU4. Internet						0.694
MKO	0.699					

Table 5. Confirmatory Factor Analysis for Model Constructs/ Business Sample.

Model Constructs	CFA Results					
	F1	**F2**	**F3**	**F4**	**F5**	**F6**
Attitudes Towards Entrepreneurship						
AT2. Attraction of "new firm" idea	0.68					
AT3. Desire to establish new firm	0.59*					
AT4. Personal satisfaction with own firm	0.54*					
AT5. Own firm as career option	0.49*					
Subjective Norms						
SN2. Friends		0.73				
SN3. Colleagues		0.65*				
Perceived Behavioral Control						
PC3. Ability to keep own firm working			0.60			
PC4. Knowledge of necessary details to establish new firm			0.63*			
PC5. Knowledge of how to establish new firm			0.67*			
PC6. Probability of new firm future success			0.64*			
Model goodness of fit: Chi-square= 89.41 P= 0.000 GFI= 0.969 AGFI= 0.946 NFI= 0.915 CFI= 0.943 NNFI= 0.919 RMSEA= 0.06						
Entrepreneurial Intentions						
EI2. New firm as a professional goal				0.65		
EI3. Willingness to do anything to establish and run own firm				0.70*		
EI4. Determination to establish new firm in future				0.76*		

Model Constructs	CFA Results					
	F1	F2	F3	F4	F5	F6
EI5. Serious thinking of new firm creation				0.60*		
EI6. Intention to establish own firm in the future				0.73*		
Model goodness of fit: Chi-square= 14.398 P= 0.000 GFI= 0.989 AGFI= 0.968 NFI= 0.984 CFI= 0.99 NNFI= 0.979 RMSEA= 0.058						
Learning						
L1. Understanding firm owners motivations					0.62	
L2. Understanding requirements to establish own firm					0.70*	
L3. Enforcement of own firm management capabilities					0.74*	
L4. Enforcement of networking capabilities					0.59*	
L5. Enforcement of opportunities recognition capabilities					0.68*	
Model goodness of fit: Normed Fit index= 1**						
Resources Utilization						
RU1. Academic staff						0.60
RU2. University library						0.66*
RU4. Internet						0.48*
Model goodness of fit: Normed Fit index= 1**						

* The parameters without (*) in all table contents are specified as starting values "specified as fixed" . a starting value is needed for each of the parameters' constructs to be estimated because the fitting algorithm involves iterative estimation, starting from a suitable approximation to the required results and proceeding to their 'optimum' values (Dunn et al., 1994, pp. 23-24).

** when Normed Fit Index equals (1), this suggests a perfect fit of the model.

Reliability:

Having established construct validity, the refined constructs of the study's questionnaire were finally tested for reliability. Reliability was assessed through examining the Cronbach's Alpha coefficient of the questionnaire constructs (Hair et al., 2003). While the Cronbach's Alpha coefficients should range from zero to one, table 6 shows that reliability coefficients for all constructs were above the cut off point of 60% used in this paper. The reliability coefficients for all the constructs ranged from 0.6025 to 0.8192. Noticeably, constructs with Cronpach's Alpha close to 60% consisted of small numbers of items, which might have caused such low results. Hence, the paper's questionnaire and constructs were all of reasonable satisfactory reliability.

Table 6. Reliability Coefficients for the study's constructs

construct	Number of items	Reliability Coefficients
Attitude towards Entrepreneurship	4	0.6536
Subjective Norms	2	0.6448
Perceived Behavioral Control	5	0.7448
Entrepreneurial Intentions	5	0.8161
Learning	5	0.8192
Resources Utilization	3	0.6025

Empirical Analysis of The Study's Proposed Framework:

Consistent with previous empirical research on the application of TPB in the entrepreneurial context (Linan and Chen, 2006; Souitaris et al., 2007; Wu and Wu, 2008), the study's framework was analyzed through three stages. In accordance with Ajzen's (1991) theory of planned behavior, stage one of analysis was designed to assess the hypothesized relationships between entrepreneurial intentions model's constructs. Stage two was designed to assess the direct simultaneous influence of exogenous constructs (i.e. learning, resources utilization) on the antecedents of entrepreneurial intentions. Stage three aimed at examining the existence of any differences in respondents' entrepreneurial antecedents according to their academic majors. Stage one of analysis was conducted through structural equation modeling, stage two was conducted through multiple-regression analysis, while stage three was conducted using Oneway Anova test. Such stages of analysis were consistent with analysis procedures undertaken in previous research (Linan-Alcalde and Rodriguez-Cohard, 2004; Linan and Chen, 2006; Souitaris et al., 2007; Wu and Wu, 2008).

Stage One: Entrepreneurial Intentions Model Analysis:

The analysis procedure to test the study's hypotheses with regard to the entrepreneurial intentions model required evaluating the model's goodness-of-fit to confirm if the hypothesized model was similar to the observed data. Hence, EQS6 program was run to assess the entrepreneurial intentions model and its associated hypotheses. In addition to goodness-of-fit measures, underlined earlier in confirmatory factor analysis, the significance of the parameter estimates was evaluated through constants, beta coefficients, the calculated t-values for each coefficient and the coefficient of determination. One structural path model was run to examine the proposed entrepreneurial intentions model.

Figure 3 shows the entrepreneurial intentions model. The Normed fit index was one for the model indicating a perfect fit. As underlined by figure 3, while both respondents' "attitude towards entrepreneurship" and "perceived behavioral control" had a significant positive effect over their entrepreneurial intentions(Beta values were 0.38 and 0.37 respectively). Respondents' "subjective norms" had a positive, non significant, effect (Beta value was 0.00). Such result was consistent with previous empirical findings (i.e. Linan and Chen, 2006; Wu and Wu, 2008), which further underlines previous remarks identifying "subjective norms" as the weakest link in the TPB model (Linan and Chen, 2006). Hence, and in the context of the study's sample, both H1 and H3 were accepted, while H2 was rejected.

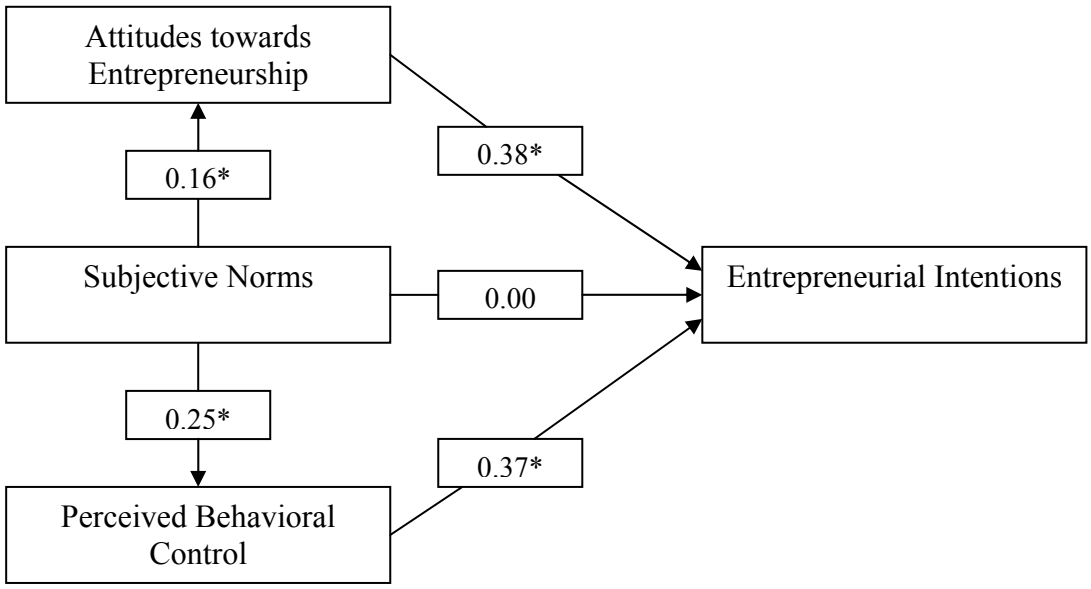

Figure 3. The relationships between entrepreneurial intentions model constructs.

Notes: Normed fit index = 1. The sign (*) indicates that T- Value exceeds 1.96, hence, the proposed relationship is accepted.

Despite failing to exert a significant effect over respondents' entrepreneurial intentions, figure 3 underlines that "subjective norms" had a positive significant effect over both respondents' "attitude towards entrepreneurship" and their "perceived behavioral control" (Beta values were 0.16 and 0.25 respectively). While consistent with previous empirical findings (i.e. Linan and Chen, 2006), such results underline that respondents' friends and colleagues affect their opinions towards entrepreneurship, in addition to their perceptions of their capabilities in establishing their own firms. Hence, both H4 and H5 were accepted. Table 7 shows the structural path model results for all five hypotheses.

Table 7. Structural Path Model Results.

Hypothesis Number	Variables in the Path Model	Beta	T-Value	Sig. T	Hypothesis Testing Result
H1	Attitude towards Entrepreneurship > Entrepreneurial Intentions	0.380	10.768	0.046	**Accepted**
H2	Subjective Norms > Entrepreneurial Intentions	0.004	0.103	0.037	**Rejected**
H3	Perceived Behavioral Control > entrepreneurial intentions	0.367	10.169	0.036	**Accepted**

Hypothesis Number	Variables in the Path Model	Beta	T-Value	Sig. T	Hypothesis Testing Result
H4	Subjective Norms > Attitude towards Entrepreneurship	0.160	3.844	0.033	**Accepted**
H5	Subjective Norms > Perceived Behavioral Control	0.253	6.210	0.043	**Accepted**
R-Squared Results for Dependent Variables					
Entrepreneurial Intentions	0.359				
Attitude towards Entrepreneurship	0.026				
Perceived Behavioral Control	0.064				

*** T value should exceed 1.96 for the proposed relationship to be accepted.**

**** Sig. T should be less than .05 for the proposed relationship to be accepted.**

Stage Two: Exogenous Factors and Antecedents to Entrepreneurial Intentions:

According to theory, external variables will exert their direct influence only on the antecedents of intention (Linan and Chen, 2006). Therefore, and in accordance with the study's proposed framework, three multiple-regression tests were run to assess the effect of "learning" and "resources utilization" over the three antecedents of respondents' entrepreneurial intentions. Table 8 shows the results of the three tests.

Table 8. multiple regression Results for the Effect of "Learning" and "Resources Utilization" over the Three Antecedents of Respondents' Entrepreneurial Intentions

Multiple Regression results for the effect of "learning" and "resources utilization" over respondents' "attitudes towards entrepreneurship"							
Independent variables	**R-Squared**	**Beta**	**T-Value**	**Sig.**	**F**	**Sig.**	**Hypothesis Result**
Learning	.057	.256	5.798	.000	16.865	.000	**H6a Accepted**
Resources Utilization		-.082	-1.849	.065			**H7a Rejected**
Multiple Regression results for the effect of "learning" and "resources utilization" over respondents' "subjective norms"							
Independent variables	**R-Squared**	**Beta**	**T-Value**	**Sig.**	**F**	**Sig.**	**Hypothesis Result**
Learning	.018	.135	2.999	.003	5.106	.006	**H6b Accepted**
Resources Utilization		-.004	-.094	.925			**H7b Rejected**

Multiple Regression results for the effect of "learning" and "resources utilization" over respondents' "perceived behavioral control"							
Independent variables	**R-Squared**	**Beta**	**T-Value**	**Sig.**	**F**	**Sig.**	**Hypothesis Result**
Learning	.110	.329	7.665	.000	34.526	.000	**H6c Accepted**
Resources Utilization		.005	.122	.903			**H7c Rejected**

*** T value should exceed 1.96 for the proposed relationship to be accepted.**

**** Sig. T should be less than .05 for the proposed relationship to be accepted.**

With regard to their effect over respondents' "attitudes towards entrepreneurship", table 8 shows that "learning" exerted a positive significant effect over respondents' attitudes (Beta= .256) while "resources utilization had a negative non-significant effect over the same antecedent (Beta = -1.849). Accordingly, H6a was accepted while H7a was rejected. Table 8 further underlines that "learning" also exerted a positive significant effect over respondents' "subjective norms" (Beta= .135), while "resources utilization" had a negative non-significant effect over the same antecedent (Beta= -.004). Hence, H6b was accepted while H7b was rejected. Finally, table 8 shows that "learning" had a positive significant effect over respondents' "perceived behavioral control" (Beta= .329), while "resources utilization" had a negative non-significant effect over the same antecedent (Beta= .005). Therefore, H6c was accepted while H7c was rejected.

Empirical results have established a significant positive effect of learning derived from BA education over all three antecedents of entrepreneurial intentions. Learning had the highest effect over students' "perceived behavioral control" (Beta = 0.329). While the second highest effect of learning was over students' "attitudes towards entrepreneurship" (Beta = 0.256), "subjective norms" received the lowest effect of learning (Beta = 0.135). Hence, while contradicting with previous empirical findings (i.e. Souitaris et al., 2007), the results of this paper underline the importance of learning in (1) forming respondents' perceptions about their own entrepreneurial capabilities and (2) directing their attitudes towards entrepreneurship, both of which are significant antecedents to respondents' entrepreneurial intentions. The results also show that respondents' feel that the opinions of their significant others, i.e. friends and colleagues, in relation to respondents' entrepreneurial endeavors are affected by learning those significant others derive from BA education. The above empirical results mean that H6 was accepted.

On the other hand, and consistent with previous empirical findings (i.e. Fayolle et al., 2006; Souitaris et al., 2007), "resources utilization" failed to exert any significant effect over the three antecedents of respondents' entrepreneurial intentions. Accordingly, H7 was rejected. Confirmatory factor analysis, table 4, has underlined three major resources available for respondents, i.e. teaching staff, university library and the Internet. The above results indicate that respondents don not feel their utilization of such resources affects their attitudes towards entrepreneurship. Furthermore, respondents feel that their friends and colleagues are not affected by the utilization of such resources in a way that affects their support to respondents' entrepreneurial endeavors. Alarmingly, respondents' don't not feel that

using university resources adds significantly to their capabilities in establishing own firms. Such results should be considered carefully by the university due to the huge investments in such resources, which should be used effectively in broadening students' horizons and developing their knowledge and skills.

Stage Three: Respondents' Majors and Variance in Entrepreneurial Intentions' Antecedents:

One Way Analysis of Variance-ANOVA was employed to examine if there were any differences in respondents' entrepreneurial antecedents according to their academic majors. Table 9 shows that there were no significant differences (according to F-Values and their Sig.) in respondents' entrepreneurial antecedents due to their academic majors. Hence, H8a, H8b and H8c were all rejected, which means that H8 was, consequently rejected.

Such results are of major importance since they underline the fact that, being arguably the closest to the entrepreneurship concept, business related majors have no significant effect over respondents' future intentions to become entrepreneurs.

Table 9. One Way ANOVE Results for Differences in Entrepreneurial Antecedents According to Respondents' Majors.

Entrepreneurial antecedent	F - Value	Sig.	Hypothesis Result
Attitude Towards Entrepreneurship	1.906	0.150	**H8a. Rejected**
Subjective Norms	2.839	0.059	**H8b. Rejected**
Perceived Behavioral Control	1.501	0.224	**H8c. Rejected**

Discussion of Results:

The following subsections discuss the paper's empirical results in relation to its purpose and objectives.

EIQ validity as a measurement instrument of TPB model:

Despite the fact that EFA and CFA analyses have resulted in deleting some items of the EIQ instrument for weak loadings. Such deletion might have been due to the fact that the instrument was translated to Arabic, or could be due to sample characteristics. Nevertheless, EQI has shown satisfactory validity as an instrument. Such result was also achieved by Wu and Wu (2008) who examined EIQ validity on a sample of Chinese students. Furthermore, EQI achieved adequate reliability in the context of this paper. While two of the four constructs measured by EIQ had Beta coefficients close to 60%, i.e. "attitudes towards entrepreneurship" and "subjective norms". Both constructs had the lowest number of items measuring them. Hence, the EIQ was deemed to have achieved adequate validity and reliability in the context of this paper.

TPB application in the "entrepreneurial intentions" context:

Empirical results of path analysis run on the TPB model suggest a perfect fit. Such result underlines the suitability of the model to assess the multi-dependent nature of entrepreneurial intention in the context of Jordan. However, and with regard to the effect of the three antecedents over entrepreneurial intentions, "subjective norms" failed to exert a significant effect over students' entrepreneurial intentions. Such result was consistent with empirical findings of previous research (i.e. Kreuger et al., 2000; Linan and Chen, 2006; Wu and Wu, 2008), which further underlines Linan and Chen (2006) remarks identifying "subjective norms" as the weakest link in the TPB model. In the context of this paper, the fact that "subjective norms" had no direct significant effect over students' entrepreneurial intentions suggests that students form their entrepreneurial intentions independent of any direct

influence of their friends and colleagues. Nevertheless, those friends and colleagues might affect students' entrepreneurial intentions indirectly through their effect over students' "attitudes towards entrepreneurship" and "perceived behavioral control". The acceptance of both H4 and H5 supports such argument.

In relation to other antecedents, both "attitudes towards entrepreneurship" and "perceived behavioral control" had relatively the same effect over students' entrepreneurial intentions (Beta value for "attitudes towards entrepreneurship" = .38, Beta value for "perceived behavioral control" = .37), with attitudes being slightly more influential over intentions. Previous empirical research has underlined a considerably stronger effect of "attitudes towards entrepreneurship" over entrepreneurial intentions than the effect of "perceived behavioral control" (i.e. Linan and Chen, 2006; Wu and Wu, 2008). Hence, in the context of this paper, the relatively similar effect of both "attitudes towards entrepreneurship" and "perceived behavioral control" could be caused by students' tendency to form their attitudes towards entrepreneurship subjectively in relation to their perceptions about their own entrepreneurial capabilities, while students in previous research formed their attitudes towards entrepreneurship in a more objective manner regardless of their own entrepreneurial capabilities.

With regard to the predictive capability of the TPB model, R-squared for the model was 0.359. Such result meant that the antecedents of "attitudes towards entrepreneurship", "subjective norms" and "perceived behavioral control" explained approximately 36% of variation in students entrepreneurial intentions. The resulting R-squared in this paper was higher than its counter parts in some studies (e.g. Gird and Bagraim, 2008), but lower when compared to some other studies (e.g. Linan and Chen, 2006). Such variation in the model's predictability between studies might be caused by differences in the contexts under which the model was applied. Furthermore, the resulting R-squared underlines the fact that students' entrepreneurial intentions in this paper could be influenced by other factors in addition to the three antecedents of the TPB model.

The effect of "Learning" and "Resources Utilization" over students' entrepreneurial intentions:

Empirical results indicate that learning derived from BA education has a considerable effect over respondents' perceptions of their ability to establish their own firms. In other words, respondents feel that Learning provides them with necessary knowledge and skills to establish and successfully run their own firms. The results also underline that learning derived from BA education does not only affect respondents' perceptions of their entrepreneurial abilities, but it also affects their attitudes towards entrepreneurship in a positive way. Furthermore, respondents feel that learning has a significant effect over their significant others', i.e. friends and colleagues, support for respondents' entrepreneurial intentions. Such results mean that the support of respondents' friends and colleagues to their entrepreneurial endeavors is based on education derived learning those friends and colleagues have.

In contrast, students' utilization of resources provided by the university has no effect over their attitudes towards entrepreneurship nor their perceptions of their abilities to become entrepreneurs. Furthermore, the fact that students' friends and colleague use the same resources does not affect them in a way that influence student's attitudes towards entrepreneurship, nor their perceptions of their own capabilities to become entrepreneurs.

Variation in students' entrepreneurial intentions according to their majors:

According to empirical results of One Way Analysis

of Variance, there was no variation in the three antecedents of entrepreneurial intentions according to students' majors. While contradicting with previous empirical findings (i.e. Galloway et al., 2006; Wu and Wu, 2008; Turker and Selcuk, 2009), the results underline the fact that students' entrepreneurial intentions are not affected by their chosen majors. Such results also contradict with this paper's prediction that students studying business related majors should possess higher entrepreneurial intentions since they should be exposed more to the "entrepreneurship" concept and the benefits of, and necessary skills for managing, own firms.

CONCLUSIONS:

Building on previous discussion of empirical results, a number of conclusions can be drawn. Firstly, the relationships established among the TPB model's constructs seem to confirm the validity of the model to study entrepreneurial intentions of students in Jordan. The fact that the model remains open to the influence of exogenous factors makes it a suitable method to further study the entrepreneurial phenomenon in Jordan, and the influence of different factors over it. Secondly, and in relation to the application of EQI as a measurement instrument of the TPB model's constructs, validity and reliability measures suggest that EQI may be an adequate instrument to measure entrepreneurial intentions, and their antecedents, in different contexts and cultures. However, the instrument might need some refinement to improve its reliability in particular. Thirdly, and with regard to the relationships between TPB model constructs, entrepreneurial intentions of Jordanian students seem to be directly influenced by their attitudes towards entrepreneurship and their perceptions of their own entrepreneurial capabilities. The influence of students' significant others over their entrepreneurial intentions seems to take a non-direct approach through its effect over students' attitudes and perceptions.

Fourthly, while being considered as the major anticipated benefit derived from BA education, learning affects students' entrepreneurial intentions through its direct effect over students' perceptions of their entrepreneurial capabilities and their attitudes towards entrepreneurship. The fact that the highest effect of learning was over students' perceptions of their entrepreneurial capabilities should be considered carefully, especially when it seems that students' attitudes towards entrepreneurship are formed subjectively according to their perceptions of their own capabilities. Learning also affects students' significant others opinions with regard to students' entrepreneurial intentions. While a direct influence of significant others' opinions over students' entrepreneurial intentions was not established in this paper, it can be suggested that significant others' opinions affect students' attitudes and perceptions, which in turn affect their entrepreneurial intentions. Fifthly, and with regard to students utilization of resources available in university, their use of university library, internet and academic staff seems to have no effect over students' entrepreneurial intentions. Finally, students academic majors seem to have no significant effect over their entrepreneurial intentions. The fact that students study business or engineering related majors has no influence over their entrepreneurial intentions

Practical Implications:

This paper has established a positive influence of learning derived from BA education over Jordanian students' entrepreneurial intentions. In the context of this paper, learning mostly affects students' perceptions of their entrepreneurial capabilities. Furthermore, learning shapes students attitudes towards entrepreneurship in a positive way. Study plans of the university should

acknowledge this fact through focusing more on improving students' managerial and communication skills. Such improvement can take two approaches. The first approach should focus on developing students' theoretical knowledge of the "entrepreneurship concept", its development, its importance and its associated values. The second approach should focus on developing students' practical capabilities in leading and managing projects successfully. Achieving such task requires major revision of current plans to focus more on "entrepreneurship" and to include practical simulation and training. Such requirements are lacking in the university's current plans.

In its current study plans, the university offers one module broadly addressing the concept of entrepreneurship entitled "small business management". The module is directed to students in business related majors. Empirical findings of this paper suggest that such effort does not distinguish the entrepreneurial intentions of students studying business related majors from those studying other majors, i.e. engineering related majors. Hence, the concept of entrepreneurship should be addressed more extensively in the study plans of business related majors through specifically designed modules. Furthermore, the emphases on promoting entrepreneurship should not be restricted to students in business related majors, students in other majors should also learn about it through entrepreneurship focused modules or courses. Finally, empirical findings of this paper show that university resources (i.e. library, internet, academic staff) have a limited role to play in forming entrepreneurial intentions of students. Such resources, especially teaching staff, should be directed to increase students' exposure to entrepreneurship, as a concept and application. Entrepreneurship focused seminars, conferences and workshops are some of the methods academic resources can be applied to promote the concept. Furthermore, students should be directed and encouraged to use the university's library and internet facilities for academic purposes more often, which could enhance the chances of their exposure to the entrepreneurship concept.

Limitations and future research:

The findings, conclusions and implications of this paper should be addressed with a number of limitations in perspective. Firstly, the paper's sample consisted of students studying in one Jordanian university, hence, the paper's findings cannot be generalized to all Jordanian universities. Secondly, the focus of this paper was on two benefits of BA education, other benefits might have been overlooked. Thirdly, students' demographics and backgrounds were not addressed by this paper, such variables might have a role to play in shaping students' entrepreneurial intentions.

Building on the above, future research should attempt to examine the paper's model on a sample of students from all Jordanian universities. Such endeavor could yield more generalizable findings suitable for higher education policy makers. Furthermore, future research should attempt to develop the paper's model to include other benefits or characteristics associated with BA education. Research should also attempt to examine the influence of individuals' characteristics, backgrounds and demographics over their entrepreneurial intentions. Finally, future research could attempt to further assess the validity of the TPB model in different research locales in Jordan, in addition, further application and refinement of the EIQ could be a fruitful area of research.

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أثر الدراسة الجامعية لمرحلة البكالوريوس على الميول الريادية لطلبة الجامعات الأردنية: تطبيق على نظرية السلوك المخطط

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ملخـص

هدفت هذه الدراسة إلى اختبار أثر الدراسة الجامعية لمرحلة البكالوريوس على الميول الريادية لطلبة إحدى الجامعات الأردنية. قامت الدراسة بتطوير نموذج يربط بين منافع الدراسة الجامعية لمرحلة البكالوريوس (التعلم و استخدام الموارد) و بين محددات الميول الريادية (الموقف تجاه الريادة، المعايير غير الموضوعية و التصورات حول القدرات على القيام بالسلوك الريادي) بناءا على نظرية السلوك المخطط ل Ajzen (1991). استخدمت الدراسة عددا من الاختبارات الإحصائية على عينة الدراسة المكونة من 564 طالبا و طالبة. أشارت النتائج الإحصائية إلى وجود تأثير ذو دلالة إحصائية للتعلم على المحددات الثلاثة للميول الريادية، في حين أن استخدام الموارد لم يملك أي تأثير ذو دلالة إحصائية إلا على تصورات الطلبة حول قدرتهم على القيام بالسلوك الريادي. كذلك أشارت النتائج الإحصائية إلى عدم وجود أي فروق في الميول الريادية للطلبة بناءا على تخصصاتهم الدراسية. على ضوء النتائج الإحصائية، خلصت الدراسة إلى عدد من الاستنتاجات والتوصيات. أخيرا، و بناءا على محدداتها، تقترح الدراسة بضعة مجالات للأبحاث المستقبلية.

الكلمات الدالة: الريادة، الميول الريادية، نظرية السلوك المخطط، الدراسة الجامعية لمرحلة البكالوريوس، التعلم، استخدام الموارد، استبانه تقييم الميول الريادية.

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تاريخ استلام البحث 2009/8/9، وتاريخ قبوله 2010/2/14.