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Dissertation

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**The Impact of Entrepreneurship Education on
Entrepreneurial Intention of The Algerian University
students**
**Case study : Tlemcen University; The Higher school of
Management and Graduate School of Applied Sciences**

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Abstract :

There is widespread consensus on the necessity of encouraging entrepreneurship to boost economic development. Recent research has focused on the impact of entrepreneurship education in explaining entrepreneurship intentions in particular. Thus, the purpose of this study is to contribute to a better understanding of the impact of entrepreneurship education and training on university students' entrepreneurial intention. Drawing on the theory of planned behaviour, we examine how the relationship between entrepreneurship education and subjective norms, perceived attitude, perceived self-efficacy, and, specifically in this study, perceived opportunity shapes students' entrepreneurial intention of students. To this end, A sample of 340 final-year undergraduates was studied using structural equation modeling. The results evaluated by the partial-least-structure (PLS) program reveal that entrepreneurship education has a direct impact on entrepreneurial intention of students , with a significant indirect effect mediated by subjective norms and perceived self-efficacy.

Key words: entrepreneurship , entrepreneurship education, entrepreneurial intention, theory of planned behaviour ,perceived self-efficacy, perceived attitude, subjective norms, perceived opportunity

الملخص :

لقد أصبح من المتفق عليه و على نطاق واسع ضرورة تشجيع ريادة الأعمال لتعزيز التنمية الاقتصادية. حيث ركزت الأبحاث الحديثة على تأثير تعليم ريادة الأعمال في بعث نوايا ريادة الأعمال على وجه الخصوص. وبالتالي ، فإن الغرض من خلال دراستنا هذه هو المساهمة في فهم أفضل لتأثير تعليم ريادة الأعمال والتدريب على النية المقاولاتية لدى طلاب الجامعة. بالاعتماد على نظرية السلوك المخطط ، ندرس الأثر المباشر لتعليم ريادة الأعمال على نية المقاولاتية لدى الطلاب ، و الأثر الغير مباشر من خلال عوامل نموذج نظرية السلوك المخطط ، الموقف المدرك ، المعايير الذاتية والكفاءة الذاتية المدركة ، بالإضافة الى الفرصة المدركة كعامل مستحدث على النموذج الاصلى. ولهذه الغاية ، تمت دراسة عينة من 340 طالبًا جامعيًا في السنة النهائية باستخدام نمذجة المعادلة الهيكلية. تكشف النتائج التي تم تقييمها من خلال طريقة المربعات الصغرى الجزئية (PLS) أن تعليم ريادة الأعمال له أثر مباشر على النية المقاولاتية، مع وجود أثر معنوي وسيط من خلال عاملي المعايير الشخصية والكفاءة الذاتية المدركة

الكلمات المفتاحية: المقاولاتية ، تعليم المقاولاتي ، النية المقاولاتية ، نظرية السلوك المخطط ، الكفاءة الذاتية المدركة ، ..
الموقف المدرك ، المعايير الذاتية ، الفرصة المدركة

Preface

Throughout the past three years, writing this dissertation has been a fascinating process and a personal experience. Many people helped with this process; without their support, I would not have been able to finish this dissertation. Therefore, I'd like to take the opportunity to express my gratitude:

I want to express my gratitude to my family, who have always been supportive and understanding of the time restraints that come with working on a dissertation. Above all, I want to express my gratitude to my parents and my lovely wife, who have always stood by me in good and difficult times and created an atmosphere of love and care that facilitated the working process.

I want to express my sincere thanks to my supervisor, Pr. Amal Hassaine-Kazi Tani for being approachable, friendly, and providing sincere and well-intentioned feedback. Thank you for your cooperation during the last years. In this context, I am particularly grateful to Pr.Samir Maliki who took the time to discuss the topic and provide feedback.

Finally, This dissertation has benefited greatly from numerous discussions and feedback sessions with friends and colleagues of mine. So I express my great thanks to them all.

General Introduction

General Introduction

Entrepreneurship is increasingly seen as one of the strategic levers for the creation of jobs and wealth at the nation level. Today, entrepreneurship has become a real challenge for several countries because of its essential role in economic development. Entrepreneurship, in recent decades, has aroused growing interest in both political and academic circles (Capron & Mitchell, 2009). Thus, no longer needs to demonstrate the contribution of entrepreneurs to the economy (Gasse, 2003). The field of entrepreneurship, still developing field of research, is considered to be interdisciplinary and multidisciplinary (Davidsson, 1989).

The entrepreneurship literature has made considerable efforts to explain how and why new businesses emerge, contributing both theoretically and empirically to our understanding of the early stages of the entrepreneurial process. (Schlaegel & Koenig, 2014). Also, helps researchers and theorists in comprehending the phenomenon associated with it (Krueger Jr et al., 2000), , Meanwhile, this growing literature has confirmed that intention frequently is the first step in the long process of forming a business (Tiago et al., 2014). As Ajzen, 1991 points out, entrepreneurship can be viewed as a multi-step process (Ruhle et al., 2010). In fact, every planned behaviour begins with an intention (Krueger, 2009). As Krueger et al., 2000 acknowledged, that intention models have a lot of power when it comes to forecasting behaviour, and they've been applied in a lot of different fields.

Meanwhile, amongst those models, the planned behaviour theory model (Ajzen, 1991) and the entrepreneurial event model (Shapero & Sokol, 1982), are the most important models. Thus, many studies that try to predict entrepreneurial intention have used them to predict entrepreneurial intention, especially among university students. (Chen et al., 2015). Since the majority of people who start their own business are between the ages of 25 and 44 . Therefore, recent research has focused on young people, particularly university students (e.g., Alexander & Honig 2016; Ambad & Damit, 2016; Botsaris & Vamvaka, 2016; Espiritu-Olmos & Sastre-Castillo, 2015; Raposo, Ferreira, Paço, & Rodrigues, 2008; Sánchez, 2009) or in the secondary school (e.g., Paço, Ferreira, Rodrigues, & Dinis, 2008; Rodrigues, Dinis, Paço, & Ferreira, 2008). Furthermore, some of them have attempted to explore the relationship between entrepreneurship education, entrepreneurial intention (Kuratko, 2005; Rodrigues et al., 2012). In order to gain further insights, this study extend the scope of previous studies to investigate the effect of entrepreneurship education and the consequences of such education on students' entrepreneurial behaviour and intentions. This extension is in line with the recommendations of both (Lee & Wong, 2006) and (Souitaris et al., 2007), who

suggested that future research should focus on the influence of education towards entrepreneurial intentions and attitudes.

Study's problematic

Previous research has proposed and investigated the influence of several new factors on entrepreneurial intention in order to enlarge our understanding of entrepreneurial behaviour among university students. Some studies, such as those of (Denanyoh et al., 2015; Lüthje & Franke, 2003; Presbitero & Quita, 2017; Pruett et al., 2009; Stephen et al., 2005; Turker & Selcuk, 2009), focused on environmental variables(Dutta et al., 2015; Espiritu-Olmos & Sastre-Castillo, 2015). While, some of them became more interested in the influence of entrepreneurial education and training on students' entrepreneurial intentions (Karimi et al., 2016b; Adelaja & Minai, 2018; Nabi et al., 2016 ; Shah et al., 2020; Hongyi Sun, Choi Tung Lo, Bo Liang, 2016; Hussain & Norashidah, 2015a; Ambad & Damit, 2016; Kütting et al., 2014). All of these research works assist us to investigate the impact that have entrepreneurship education on the entrepreneurial intention of university students

In Algeria, and over the last decade, the Algerian government has undertaken many initiatives to assist young people in establishing their own businesses, and this was through various support agencies such as ANADE, ANGEM, CNAC, ..., and yet many institutions delivering various entrepreneurial training programs (Dif et al., 2018), but despite this, the number of start-ups that had been created is still modest relative to the potential of this country, and most of them fade in their earliest stages (Zemirli & Hammache, 2018). To date, Scholars have identified a number of factors (e.g. subjective norms, perceived behaviour control, self-control....) that influence people's entrepreneurial intentions, including their attributes and dispositions. While entrepreneurship education appears to be a crucial antecedent among these factors, these latter could potentially have an impact on the relationship between entrepreneurship education and entrepreneurial intention. (Mei et al., 2020; Wardana et al., 2020).

Despite the fact that entrepreneurship education were explored in many studies (e.g., Donckels 1991; Crant 1996; Robinson and Sexton 1994; Gorman et al. 1997; Zhao et al. 2005), there have been very few empirical investigations of its impact on perceptions of entrepreneurship and Entrepreneurship Intention (Krueger and Brazeal 1994; Peterman and Kennedy 2003). Although, the effect of general education has been explored, (Byabashaija & Katono, 2011) but only a few research have looked into entrepreneurial education, notably at university. In other words, additional research into the impact of entrepreneurship education

on entrepreneurial intent is required. (Byabashaija & Katono, 2011). On this background, this research work evaluates previous research and approaches in order to address the main research question:

What impact do entrepreneurship education and training have on entrepreneurial intention of university students and its antecedents?

This study raises a set of questions that will be examined in order to effectively address the study's problem. The following are the questions:

- *Would there be a direct and positive association between entrepreneurship training and entrepreneurial intention? or more even an indirect impact?*
- *What is the most appropriate model to predict university students' entrepreneurial intentions in the context of our research?*
- *Would the factors in our research work model have a direct impact on entrepreneurial intention?*

We suggest the following main hypotheses in light of the above-mentioned questions:

- *Entrepreneurial education influences university students' entrepreneurial intention both directly and indirectly.*
- *The factors of the study's entrepreneurial intention model have a direct effect on entrepreneurial intention.*

The main purpose of this research work is to explore university students' entrepreneurial intention, and the essence is to comprehend the entrepreneurial education, but also its impact on students' intentions to start their own businesses, as it's the appropriate predictor of entrepreneurial action (Arrighetti et al., 2016). We also aim to use this research to review the numerous approaches and models that have been used to address the concerns of entrepreneurial intention, in order to determine which model is the most effective in predicting students' entrepreneurial intention. By examining a number of previous literature and highlighting the most significant developments in models relevant with the assessment of entrepreneurial intention, as well as the inclusion of entrepreneurial education as an independent variable in the conceptual model. This is on the theoretical side; but, on the practical side, we will try to confirm those relationships by applying appropriate modelling framework for the topic at hand.

The current study was designed basically on a set of steps along with the deductive hypothetical method, in which a theoretical explanation of the entrepreneurial intention models and study factors, such as entrepreneurial intention, entrepreneurial education, and factors of the entrepreneurial intention model that will be selected. In addition, and based on earlier studies, a set of quantitative hypotheses were developed, and these hypotheses were tested to produce a set of results that could be generalized to the study population. Thus, a questionnaire was distributed for this purpose, and data was collected and analysed using advanced statistical methods.

Study Structure: The research was broken down into three chapters in order to examine this topic and answer the problematic posed:

The theoretical framework of the entrepreneurship and the different theories related to the entrepreneurial behaviour and entrepreneurial education as well the entrepreneurial intention approach was the focus of first chapter.

In the second chapter, we attempted to review relevant previous studies in order to construct a theoretical model that would be most appropriate for our research., in addition as part of this chapter we delivered ,according to the selected developed conceptual model, furthermore, as part of this chapter, we presented pertinent hypotheses based on the constructed conceptual model in the order to find better answers to the main study's problematic .

While, In the third chapter, the appropriate methodology for such practical study was established to assess the robustness of the research work 's conceptual model as well as the test of hypotheses validity , and finally the discussion of results.

**CHAPTER I: Theoretical
framework of the study**

1 Introduction:

The purpose of this study is to determine the impact of entrepreneurial education on entrepreneurial intention, and in order to do so, we must first determine outcomes by reviewing the literature in this chapter, while in the second chapter, analyse what has been done as studies and research on the influence of entrepreneurship education and training on entrepreneurial intention, with its various aspects. then construct a theoretical model and develop hypotheses in the third chapter. Whereas, The first chapter explores the theoretical grounds for entrepreneurship and the entrepreneur by explaining the many theoretical aspects that underlie both. Through the literature review on entrepreneurship, we explore the importance of entrepreneurial intention, entrepreneurial education, as well as the major conceptual models that support it.

1.1 Entrepreneurship as a concept and classification

Entrepreneurship is a multidimensional phenomenon that pervades many specialties, making it one of the most difficult concept to define (Schaper & Volery, 2007). Where The term "entrepreneurship" dates back to 1732, when it was introduced by Irish economist Richard Cantillon to describe people who are "ready to engage in forms of arbitrage involving the financial risk of a new venture" (Minniti & Lévesque, 2008). In the sixteenth century, it was used to refer to military leaders, and later in the seventeenth century, it was used to refer to engineering jobs, but Richard Cantillon was the first to use it to refer to economic jobs (Hitt et al., 2001). According to Joseph A. Schumpeter, entrepreneurship is essentially a creative activity that relies around doing things which aren't routinely done. While Gurrieri et al., 2014 defined as *“a dynamic process that considers opportunities as essential to develop a new project, as opportunities to produce new products and services through their identification, evaluation, and exploitation,”*.

In general, an entrepreneur is “the person who organizes, manages, and assumes the risks of a company or organization” in general (Wolf, 1980: 378). While this description may appear to be appropriate, several academics acknowledge that entrepreneurship as a field still needs clear boundaries and a conceptual framework (Bruyat & Julien, 2001; Busenitz et al., 2003; Shane & Venkataraman, 2000). Therefore, Shane et al., 2003 propose three major research questions: "(1) why, when, and how opportunities for the creation of goods and services emerge; (2) why, when, and how some people discover and exploit these opportunities while others do not; and (3) why, when, and how different modes of action are used to exploit entrepreneurial opportunities". Thus, discussing entrepreneurship may be summarized as a two-level approach to the processes that lead to becoming self-employed as well as the individual.

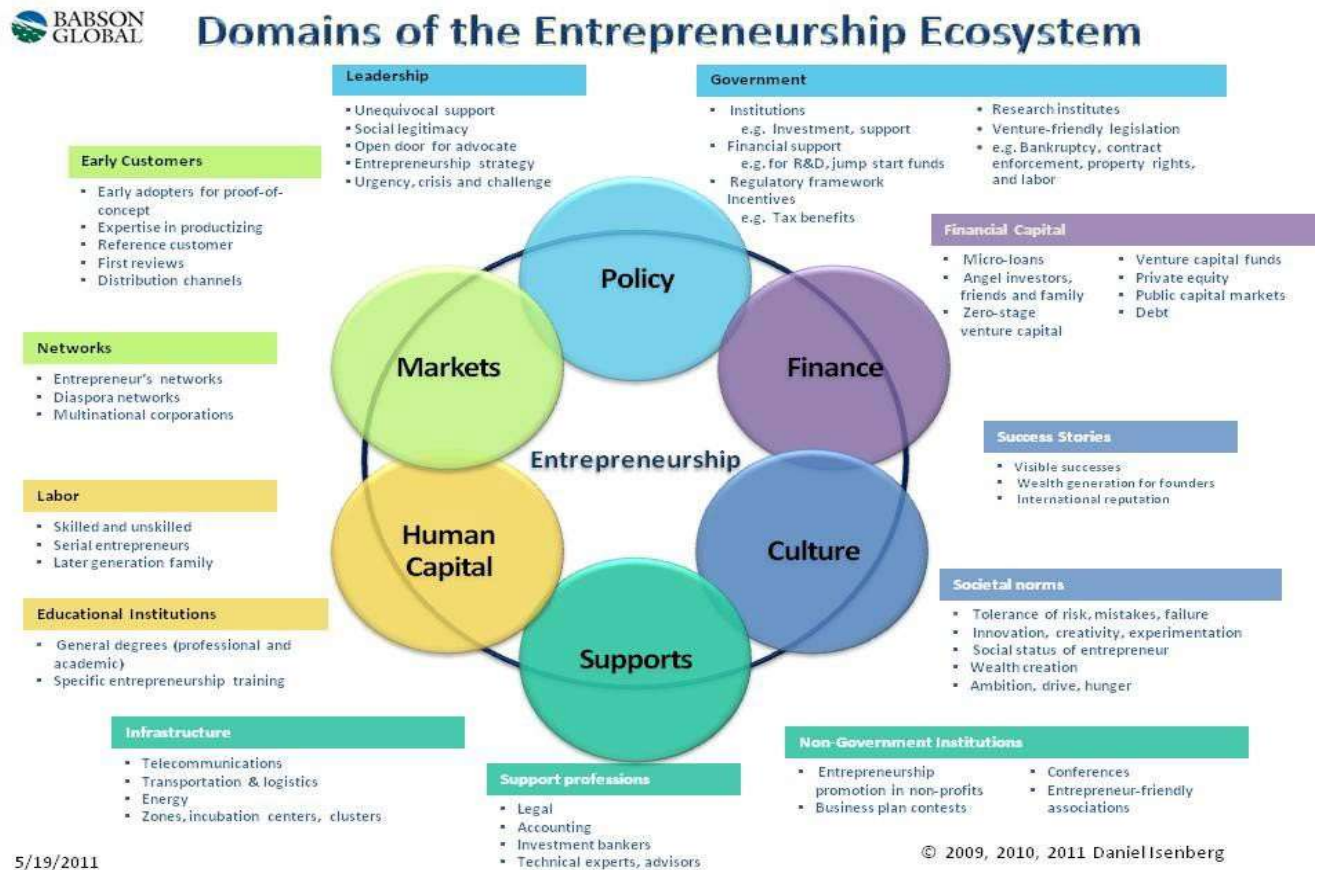
Several research, mostly in management science, have investigated into the status of entrepreneur. Depending on the economic and social context, the definition of an entrepreneur is continually changing. Baumol, 1993 suggested a distinction between two types of entrepreneurs: the entrepreneur-manager of a business (a more classic presentation of the entrepreneur) and the entrepreneur-innovator. Both quantitative and qualitative research would be unable to capture and describe the behavioural and performance components of entrepreneurial activity, according to him. The economic behaviour of entrepreneurs, on the other hand, will be of interest to another line of entrepreneurship research, that of

behaviourists. Supporters of this method (Emin & Philippart, 2015) hope to refocus attention on the entrepreneur as a participant in the entrepreneurial process.

McClelland, 1987 defines the entrepreneur as someone who exercises control over a production that is only for personal consumption. Following McClelland, research in entrepreneurship will focus on the profile and personality of entrepreneurs. It was the birth of the School of Character Traits. While the Years of work experience, previous training, family, religious education, culture, and other factors, according to Filion, 1997, contribute to trait variance. The role of the event and the process of this action, on the other hand, is not taken into account while defining these characteristics. The entrepreneur can also be characterized as a person who attempts to create something new, organizes production, takes risks, and handles the enterprise's lack of economic progress (Havinal, 2009). Filion, 1997 also defines an entrepreneur as a person who can set and achieve objectives. Therefore, the entrepreneur is not only the one who created his own opportunity, but also the one who is continuing to do so, or even transforming it, and participating in the development of Small and medium-sized enterprises (SMEs) and to the whole ecosystem related to it too. He will stay an entrepreneur as long as he has his project as the main focus.

SMEs and entrepreneurs are an important part of all modern economies. They are a major source of employment and income, and they're also engines of innovation and growth (Organization for Economic Co-operation and Development [OECD], 2009). According to Moore, 1993, the entrepreneurial ecosystem is the result of a complex entrepreneurial process. whilst the Entrepreneurship can be stimulated when the needs of entrepreneurs find support at different levels. Such an environment then fosters innovation and the growth of new businesses, as well as interaction between various actors. According to Isenberg, 2011, this entrepreneurial ecosystem is characterized based on six interconnected domains: policy, finance, market, culture, human capital, and support (Figure 1). However, access to financial components remains one of the most significant barriers to the creation, competitiveness, and growth of SMEs, particularly among the most innovative of them (OCDE, 2009). Furthermore, the search for funding is the primary reason that entrepreneurs address various organizations, regardless of where they are in their process (Maripier & Yvon, 2007).

Figure 1: Domains of The Entrepreneurship Ecosystem

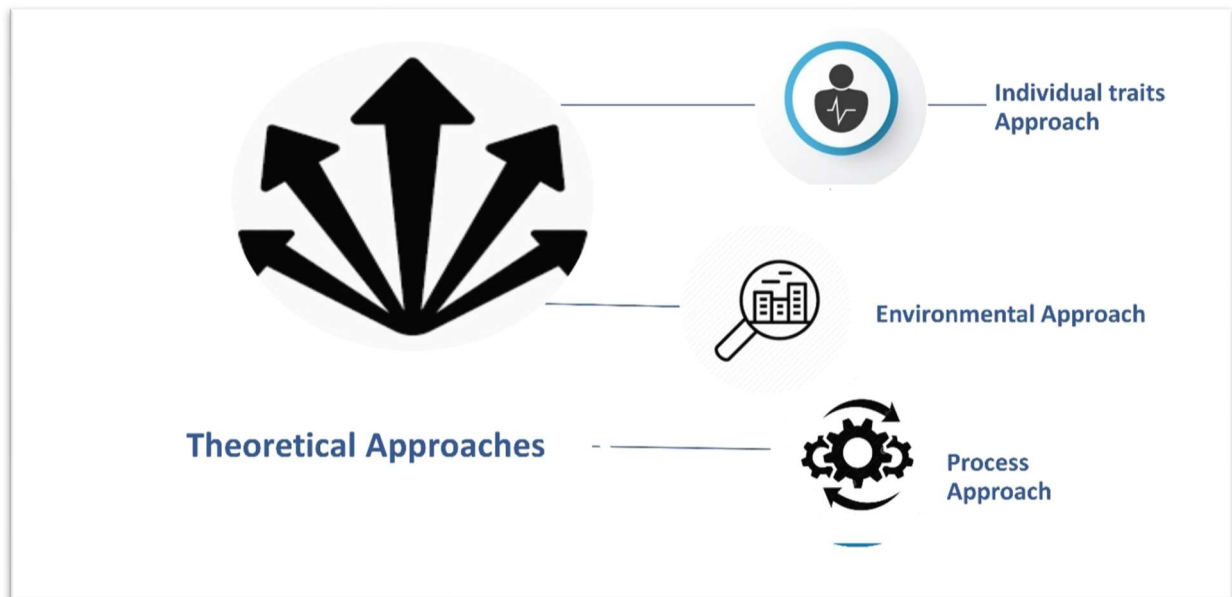


Source: D.Idsenberg (2011)

2 Contributions of Theoretical approaches to entrepreneurship

Entrepreneurship is a field of study that has taken on a multidisciplinary character as a result of the various schools of thought that have grown interested in it. Entrepreneurship is a research subject that relates to the study of economic and social phenomena. It is based on the required knowledge, relevant skills, and common behaviour (Alain Fayolle & Gailly, 2004). Economic studies focused on the roles of the entrepreneur in the growth of the economic system provide the historical grounds for entrepreneurship. Multiple perspectives of research have been used in the subsequent approaches. Various approaches have emerged during the last half-century, ranging from the study of the genesis of the creative process to the evolution of success factors or entrepreneurial growth. These dominant approaches may be categorized into three main streams (Alain Fayolle & Gailly, 2004) when it comes to the phenomena of business creation: the approach based on individual traits, the environmental approach, and the process-based approach. Each of these trends will be the focus of a presentation as well as a detailed assessment of the phenomena at hand.

Figure 2: The Principal Theoretical approaches in entrepreneurship



Source: Developed by the researcher

An individual-centred approach, commonly known as the trait approach (Stevenson & Jarillo, 1990). It entails determining the personality traits and features that define the entrepreneur's personality. The basic premise of this school of thought is that entrepreneurs have personality qualities, personal features, and a value system that incline them to entrepreneurial behaviour and set them apart from other people (non-entrepreneurs) (Greenberger & Sexton, 1988; Shaver & Scott, 1992). Indeed, the earliest authors who were intrigued in the phenomena of business creation wondered why some people opt to create their own business while others do not in comparable circumstances. According to research, the impacts of personality traits identify persons predisposed to be entrepreneurs by the presence of psychological characteristics that distinguish them from non-entrepreneurial individuals. Thus, the desire for achievement, independence and autonomy, innovation (Schere, 1982), or risk-taking (Brockhaus Sr, 1980), to mention a few of the most commonly cited attributes, are traits and attitudes associated to entrepreneurs. These dominants enable certain persons to form intentions and make business decisions (Frank et al., 2007). Followers of the entrepreneurial psychological trait stream have raised traits that have fuelled the discussion over entrepreneurial instinct. In other words, it is a matter of whether some persons who would be typical entrepreneurs are born with entrepreneurial qualities (Brockhaus Sr, 1980). While some scientists are on board (Cunningham & Lischeron, 1991), the decision is not unanimous. Despite a huge literature devoted to the psychological features of entrepreneurs, new personality traits of these entrepreneurs can still be identified, but it is impossible to define a typical entrepreneur profile (Low and Mac Millan, 1988; Bull and Williard, 1993).

There are as many differences between entrepreneurs as between entrepreneurs and non-entrepreneurs. Many individuals, who may have most of these psychological characteristics, have never opted for a career as an entrepreneur. As Audet, 2001 specifies, "the approach based on personality traits would be likely to explain in retrospect the career choice of those who decided to go into business". It is about predicting with precision the choices to come ". Furthermore, it is important to consider the theory of personality itself from a critical perspective. It is more specifically concerned with the study of personality trait stability through time as well as the limitations of methodologies for assessing psychological traits (Frank et al., 2007). Several studies have found that specific demographic rather than psychological characteristics predispose people to start a business. However, these approaches obscure the effects of the circumstances of the creation process on the constitution of personality traits. The environment in which people operate, with all its specificities and events it accumulates, can restrict the behaviour of individuals.

2.1 Environmental Approaches

The impact of the environment on the creation of a business is one of the most important factors that determine whether or not a company goes on to succeed. To convey its situational attractions, the environment can act at different levels. Various publications offer explanations of the impact of macro socio-economic (general) and micro sociological (immediate) factors on business creation. Researchers have been able to analyse the impact of general variables on the process of business formation from the perspective of regional policies (Gibb, 1993) or market conditions (Gibb, 1993; Marchesnay & Julien, 1996). In this regard, the role of socioeconomic actors such as universities (Smilor et al., 1990), governmental authorities, or institutional frameworks appears to have a significant impact on the success of business start-up initiatives (Van de Ven & Poole, 1995). By focusing on the study of the entrepreneur, some researchers (Bowen & Hisrich, 1986; Filion, 1991; Ostgaard & Birley, 1996; Guyot & Van Rompaey, 2002) demonstrated the importance of the socio-cultural environment, the family context, the professional environment, and the network of personal relations. Shapero & Sokol, 1982 and Starr & Fondas, 1992 provide variables that are dependent on the group to which individuals belong, such as prior experiences and learning, as catalysts of the process leading to the choice to start a business. Indeed, this school of thinking has supported inquiries into the role of the value system in entrepreneurial activity by academics from various disciplines (anthropologists, psychologists, and sociologists).

However, the most major criticism levied at this study is that its findings do not explain why people working in similar contexts and conditions react differently to the decision to become an entrepreneur. Indeed, this approach stresses the impacts of the socio-cultural environment, but it also emphasises approaches that establish the relationship between the conditions and context of entrepreneurial activity and the entrepreneur's behaviour. In other words, it implies that promoting the appropriate context, well-categorized, through well-determined actors, with a singular and unique way of doing things, is sufficient to foster entrepreneurship. These findings have prompted further reflection on entrepreneurial processes.

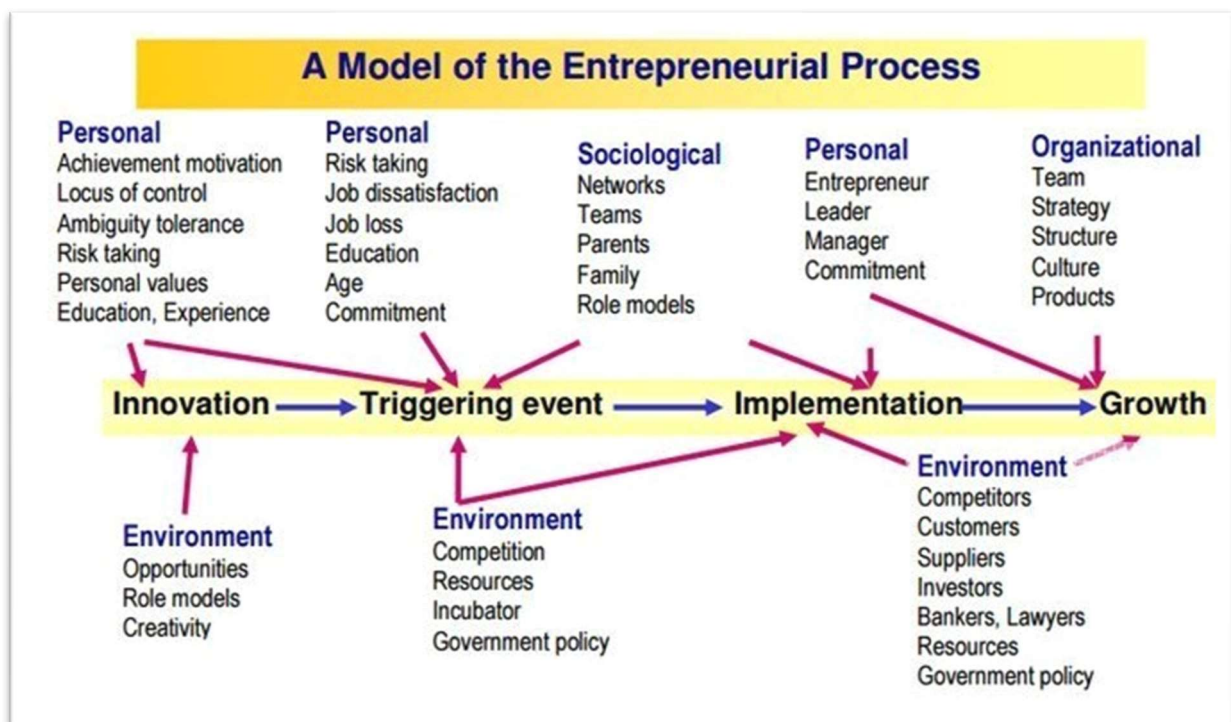
2.2 Process approach

The process approach is a dynamic approach that looks at evolving phenomena. It relates to all of the current publications in which the creator and his traits are no longer the focus, but organizational development, organization creation, organizational emergence, and so on (Hernandez, 1995). Gartner (1990, 1993) describes entrepreneurship as a phenomena that relates to examining the creation of new organizations through his notion of organizational emergence. To put it another way, it's to study the behaviour that allow one individual to form a new entity" (Allain Fayolle, 2003). The organizational emergence process would thus be defined as "the organizational process that results in the creation of a new organization (Gartner, 1993). This process would have occurred prior to the organization's existence and resulted in the creation of a new entity. It starts with "initiation," or when an entrepreneur decides to start a business, and concludes with "establishment," or when the business is created. Other authors define the entrepreneurial process from a broader perspective than that of establishing a new business (Davidsson et al., 2006). Shane and Venkataraman (2000), for example, define the entrepreneurial process as the process of identifying and exploiting a business opportunity. Unlike Gartner (1990), these authors are interested in the stages of the entrepreneurial process that occur before "initiation" as defined by Gartner. On the other hand, it's worth noting that Gartner's approach concentrates on the most profitable firms (Hernandez, 2001). This ignores the advantages of studying failing processes in terms of better understanding what happens in these cases (Fayolle, 2004). Moreover, despite the merits of this approach in terms of focusing research efforts where they should be, namely during the creation phase of a business project, identifying the behaviour required to start a business is of limited utility in predicting the occurrence of the phenomenon and the identity of the actor (Audet, 2001). It's impossible to talk about creation without mentioning the creator. Above all, the human will, which emerges from an individual or a group of individuals, is what gives birth to the organization (Hernandez, 2001). Furthermore, not

everyone has the same potential to establish a business, and not everyone who tries does so successfully. From this standpoint, it's fascinating to investigate the processes by which the variables generated by various research currents interact in order to comprehend the entrepreneurial act. Many concerns remain unanswered, such as what factors impact how opportunities are seen and used in various situations. Why do some entrepreneurs take action based on their perceptions while others do not? What mechanisms and methods do these perceptions use to influence the creative decision and act?

In this context, the notion of entrepreneurial intention assumes its full significance. By putting themselves at the crossroads of different schools of thought, models based on the intentional conception of entrepreneurial creation give a more focused explanation on the factors influencing the intention and implementation of the entrepreneurial project.

Figure 3: Entrepreneurial process model by Hisrich-Peters



Source: Hisrich-Peters (2002)

2.3 Entrepreneurship as intentionally planned behaviour

In order to explore an individual's decision to start a business, previous researchers used a variety of approaches. Many previous studies concentrated on psychological traits that might influence this choice. The research focus on situations after the entrepreneurial event, however, was a barrier to the characteristic approach. Studies state that an entrepreneur's personality, attitude, and views do not change as a result of his business venture (Gartner,

1988; Autio et al., 2001). Later research concentrated on demographic factors such as age, gender, and educational level. Lián (2004) revealed substantial correlations between traits or demographic variables. Following that, studies concentrate on the entrepreneur's pre-decision phase, establishing additional conceptual frameworks (see Bird, 1992; Shapero & Sokol, 1982; Ajzen, 1991). The relevance of the pre-decision stage in deciding to establish a new business has been highlighted by researchers. The formation of a business is perceived as a deliberate and planned action (Katz & Gartner, 1988; Bagozzi et al., 1989; Krueger & Carsrud, 1993; Tkachev & Kolvereid, 1999; Krueger Jr et al., 2000). Even when time gaps exist, intentions, according to Bagozzi et al. (1989), are a reliable predictor of action. Katz & Gartner (1988) argue that intentionality is one of the four attributes of emerging business after studying the characteristics of emerging organizations. Krueger et al. (2000), in a somewhat more recent study, found that there are signs of a long-term desire to establish a business preceding real entrepreneurial behaviour.

In this regard, we can better forecast behaviour by understanding the intention regarding planned behaviour. In the literature on psychology, it has been shown that intention is the strongest predictor of planned behaviour, especially when the latter is uncommon, difficult to discern, or entails uncertain time lags. Entrepreneurship is a perfect example of this type of intentional planned behaviour (Bird, 1988; Katz & Gartner, 1988; Krueger Jr & Brazeal, 1994).

Therefore, it appears that intention predicts behaviour better than attitudes, beliefs, or other psychological factors. Thus, attitudes and beliefs influence intentions, which then influence behaviour (Fishbein et al., 1980).

3 A review of intention models for predicting entrepreneurial behaviour

Entrepreneurship is increasingly being recognized as a source of growth for the economy, society, employment, and innovation around the world (Bakotic & Kruzic, 2010). Academics are interested in the ongoing development of a model capable of defining and turning intentions into entrepreneurial action. Several models of intention have been proposed by researchers. Here below are some remarkable, frequently used, and recognized models for understanding entrepreneurial behaviour:

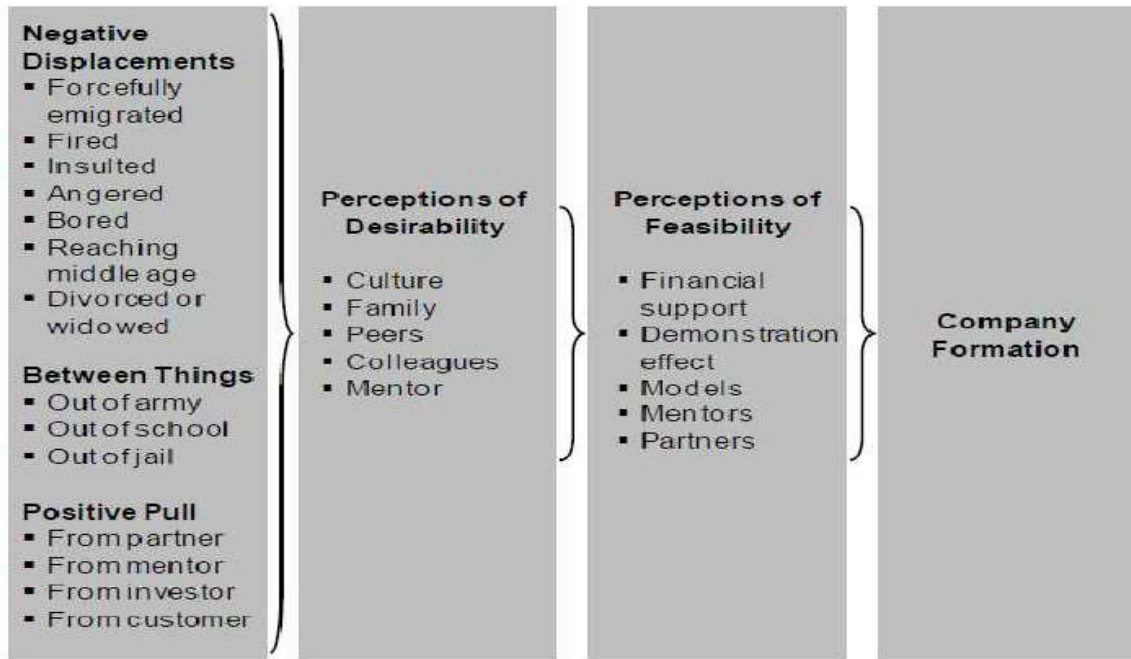
Shapero and Sokol model (1982) validated by Krueger (1993), Learned model (1992), Bird model (1988) revised by Boyd & Vozikis, 1994, Davidsson, 1995, and The model of the theory of planned behaviour d 'Ajzen TPB (1991).

3.1 Entrepreneurial event formation model

Shapero & Sokol (1982) presents one of the pioneer models in this field. Being interested in the factors that explain the choice of entrepreneurship as a multidimensional phenomenon as a professional path. The authors model the genesis of an entrepreneurial event by examining the concept of movement. Certain contextual events in the entrepreneur's immediate environment create a change in the potential entrepreneur's life trajectory through psychological or material breakdown. Thus, these events contribute to the entrepreneur's choice (i.e. the intention). According to Shapero and Sokol (1982) the process of altering individual trajectories may be described in terms of vectors of directing forces that lead an individual to move in a particular direction at a given moment. This displacement is perceived as a paradigm shift or a fundamental drive in a person's thinking that directs his/her purpose toward enterprise development. Whenever this displacement occurs in the subject's consciousness, his/her desirability and feasibility analysis lead to the development of a business. While there are three kinds of displacement:

- Negative displacements (divorce, dismissal, emigration, job dissatisfaction, etc.) which are typically beyond the individual's control and are imposed from without. These are the most frequent factors, although it is generally a combination of positive and negative factors that leads to the emergence of a new business.
- Positive displacement (positive pull: family, consumer, investors, etc.) are events that are frequently related to non-professional sources of opportunity.
- Intermediate circumstances (leaving the army, school, prison, etc.) that emerge from a breach created by the end of a period of life that places the individual between two situations or two obligations. It differs from negative displacements in that they could be predictable.

Figure 4: Entrepreneurial event formation model Shapero & Sokol



Source: Adapted From Shapero and Sokol (1982).

Displacement is the process of moving from one stage in a person's life to another, or vice versa, and marks the change in the life trajectory of the individual. The interaction between the different displacements marks the change in the individual and are, therefore, at the basis of the triggering of the entrepreneurial event .

Furthermore, the journeys that lead to the entrepreneurial act are guided by people or groups of persons, allowing them to grow over time. Thus, two intermediate variable authors arise at the interface of these three beginning variables of the entrepreneurial act: perceptions of desirability and perceptions of feasibility, which are products of the social, cultural, and economic environment.

The model reveals an interaction in basis, in the sense that it is built on the complementarity of the proposed variables. That is to say, currently no single factor may lead to the creation of a business. The figure above illustrates the change in trajectory caused by a combination of contextual variables highlighting two complementary key concepts: the perception of desirability (or the degree of perceived attraction, which can be assimilated to the concepts of: subjective norm perception and attitude, proposed in Ajzen's (1991) theory) and feasibility (which can refer to the concept of perceived control, proposed in Ajzen's (1991) theory). These two factors reflect the concept of entrepreneurial emergence.

Even though these variables address the concept of entrepreneurial intention, however it remains implicitly conceptualized in the suggested presentation of the model.

In an attempt to alleviate this limitation, Krueger (1993) provides a reconceptualization of Shapero and Sokol's contributions with a more specific incorporation of the concept of entrepreneurial intention (figure 10).

It should be emphasized that entrepreneurial experience influence intention and behaviour indirectly by affecting perception of desirability and feasibility. The positiveness and breadth of these experience influence the establishment of intention. Taking action, on the other hand, necessitates the intervention of the push factors, which Krueger, like Shapero and Sokol, refer to as "displacement." Intention will then be incited by three factors: the perception of the desirability of the intended behaviour, the perception of the feasibility of the behaviour, and the propensity to act. Krueger also discusses the importance of propensity to act and how these two concepts (perception of the desirability and feasibility of behaviour) are related. The psychological component of intentions is reflected in the propensity to act. It's a readiness to act that reflects the dynamic character of the intention by answering the question, "*Will I Really Do It?*". While the propensity to act, according to Shapero (1982), can act both directly and indirectly. Krueger states that it has a moderating impact on the different variables proposed, Rather of being a direct antecedent (N. Krueger, 1993). This variable impacts the intensity of articulation of these variables during the genesis of intention, as well as the impact of experiences on the desire to act and perceived feasibility. Indeed, if a person's propensity to act is low, attitudes may not be enough to predict intention and action. On the other side, if a person's propensity to act is strong, the perceived feasibility and desirability might push them moving easily toward the phase of action . As a result, experiences will have a greater influence on attitude. Interestingly, Shapero and Sokol, like Krueger, believe that the entrepreneurial phenomena is multidimensional and complex, but their models are built on a linear change trajectory, which it does not take in account the interactions that may occur between the different factors.

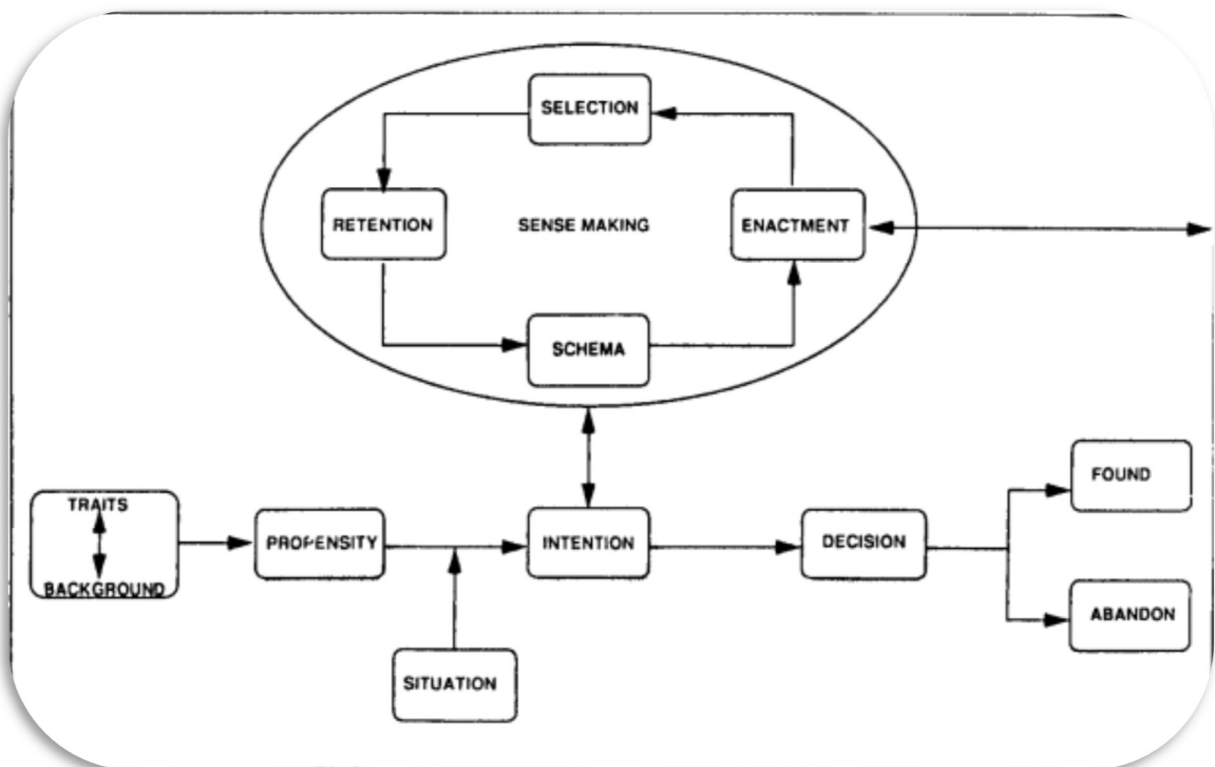
However, given the elements that influence the concepts of perceived desirability and feasibility, it appears undeniable that their impacts should be revisited in light of the specificities of various contexts, people, and circumstances (Kolvereid, 1996; Krueger Jr et al., 2000). Therefore, Learned, 1992 constructs a model of business development as a process of integrating environmental parameters.

3.2 Kevin. E. Learned (1992) Model

Kevin. E. Learned (1992) provides a framework for how an organization is created. Instead of being constrained to a single characteristic, this model attempts to embrace the diversity and breadth of the phenomena of business creation. It consists dimensions of creation process which eventually lead to the choice of whether or not to create an organization:

- The propensity to found: Certain persons have a set of personal traits that, when combined with their experience, make them more inclined to try to create a business.
- The intention to found. Some of those people will come into situations that, when combined with their characteristics and experiences, will develop the intentionality.

Figure 5: Model of Organization Formation Learned (1992)



Source: Kevin. E. Learned (1992)

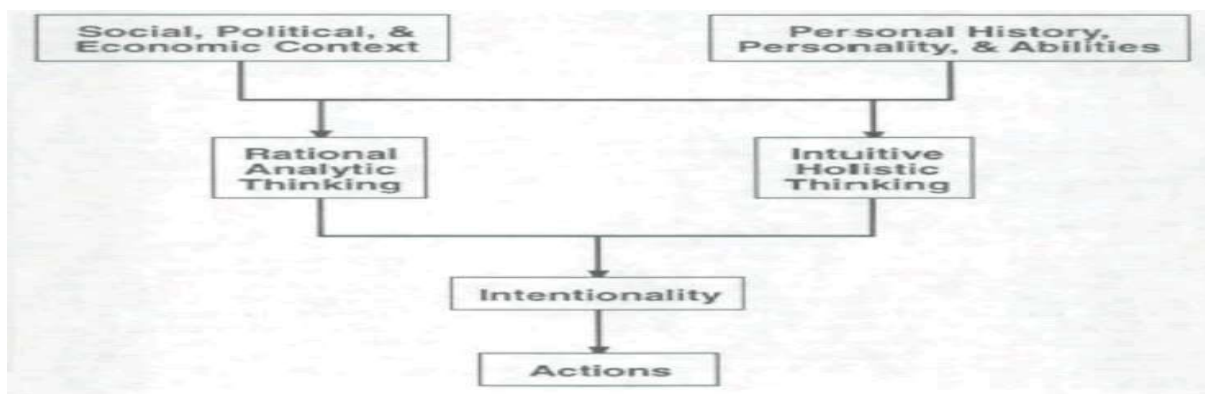
- Making sense: An intentional person interacts with the ecosystem in order to gather resources and make his or her ideas a reality. During the effort, the individual needs find meaning of the information he or she has gathered.
- Decision. Based on the sense made of the attempt, an intentional person will eventually decide whether to found or abandon the attempt to find.

This model highlights pre-creation events based on interactions between individual traits and situational factors. In this way, he embraces Gartner's idea of organizational emergence (1988). Learned also manages to specify the mechanisms by which the process of processing environmental information takes place, on the one hand, and its effect on the construction of the intention to start a business, on the other hand, by drawing inspiration from Weick's (1977, 1979) process of meaning construction. Meanwhile the advantage of this model is that it integrates intention as a "announcing" element that influences the creative decision and, as a consequence, the action. Moreover, the author offers insight on the link between intention and the environment by examining the structuring of the information gathered. Indeed, the individual finds, receives, and absorbs constantly evolving information. In this way, this description highlights the need of articulating the relationship between environment and intention in a dynamic dimension influenced by cognitive reasoning.

3.3 Bird's (1988) model

The entrepreneurial intention developed by Bird (1988) is based on cognitive psychology theory, which aims to explain and predict human behaviour. The relationship between beliefs (which translate to attitudes) and behaviours is referred to as intention (Fishbein & Ajzen, 1975). According to Bird, individuals are predisposed to have the intention to establish a business. Which is a combination of personal and environmental factors. At the same time, the personal variables, gather the individual's previous entrepreneurial experiences, personality traits, and competencies. While Environmental factors are linked to social, political, and economic variables such as travel, market fluctuations, and government regulations.

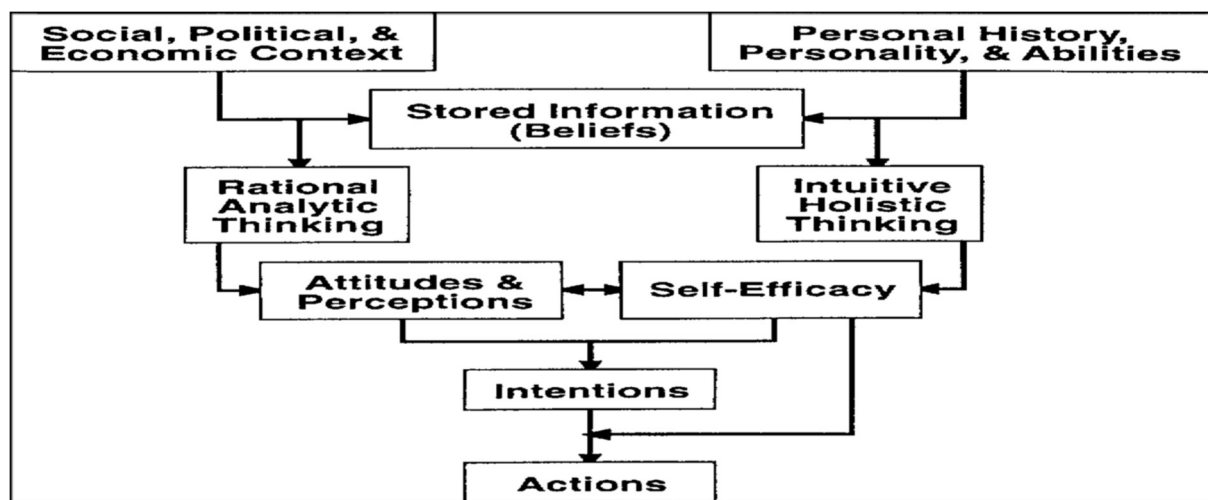
Figure 6: The entrepreneurial intention developed by Bird (1988)



Source: Bird (1988)

Boyd and Vozikis' approach combines the theoretical framework given by Bird with the idea of self-efficacy, drawing influence from Bandura's socio-cognitive theory. The Intention, according to Boyd and Vozikis (1994), is based on how people perceive their physical and social environments, as well as how they anticipate the future consequences of their behaviour. Perceptions, attitudes, beliefs, and preferences that influence intention are the result of an individual's accumulated experience evolving. Indeed, an individual's accumulated experience is a set of information. This information will lead to attitudes, perceptions, and a kind of self- efficacy toward action through a cognitive processes (intuitive or rational).

Figure 7: The Bird model revisited by Boyd and Vozikis (1994)



Source: Boyd and Vozikis (1994)

This presentation has the advantage of integrating both personal and contextual aspects pertaining to entrepreneurial intention into a unified conceptual framework that includes beliefs, attitudes, and self-efficacy. The notion of self- efficacy, which is integrated in this model, explains both the development of entrepreneurial intentions and the conditions that must be fulfilled for them to become action.

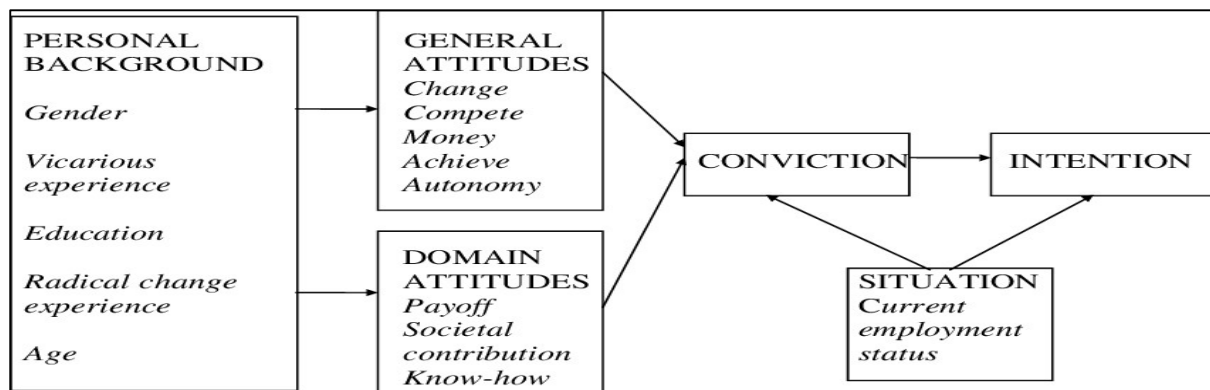
3.4 Davidsson's (1995) psycho-economic model

Davidsson (1995) provides a psycho-economic model of the factors that influence people's inclinations to start new enterprises. The author synthesizes several key elements from existing models while focusing his analyses for a specific application to the study of entrepreneurial intention. Rather of introducing new variables, the model was created to include the contributions of previously used models. The aim to evaluate the relative relevance of the factors chosen, as well as their impact on entrepreneurial intention. However, the implementation of this concept involves taking into account not only those individuals

who show a strong will to run their own businesses but also those for whom such a decision is an instrumental choice. However, in order to put this concept into practice, it is necessary to consider not only those persons who have a strong desire to establish their own business, but also those for whom such a decision is a required one.

In Rogers' (1983) innovation adoption model(Wolfe, 1994), belief is a key concept. In this respect, it is a process that should not be psychologically dissimilar to the one that leads to the choice to establish a business (Davidsson, 1995). A random sample of 1313 Swedes aged 35-40 were used to test the model. The study' findings reflect in significant part on the model's predicted relationships. Conviction has a 35 % explanatory value, whereas intentions have a 50 % explanatory power. Furthermore, Conviction is a major explanatory variable to the intention to create a business.

Figure 8: Davidsson’s (1995) psycho-economic model

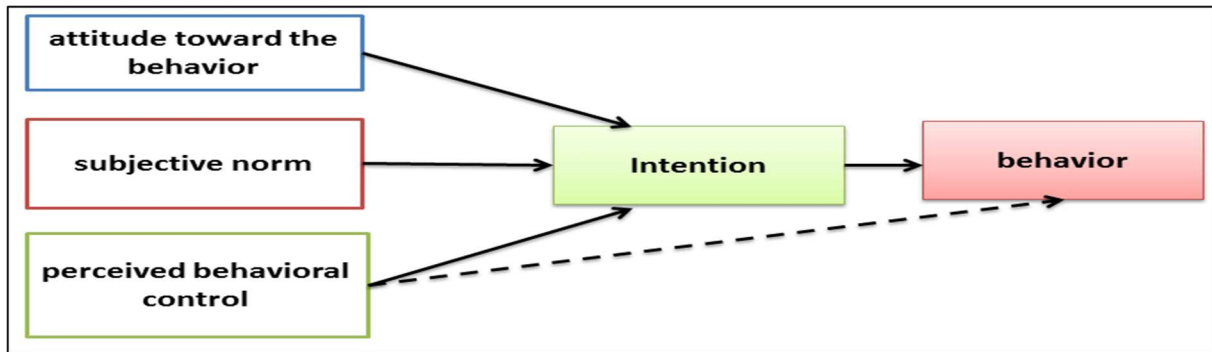


Source: Davidsson(1995)

3.5 The theory of planned behaviour (TPB)

The theory of planned behaviour (TPB) is a widely used reference by the majority of research that has looked at the study of intentional behaviour, despite the fact that it is related to the field of social psychology. In fact, this theory places intention at the center of behaviour prediction. TPB has been widely used to understand and predict human behaviour, particularly entrepreneurship (Carr & Sequeira, 2007; Kolvereid, 1996; Krueger & Casrud, 1993; Tkachev & Kolvereid, 1999). Planned behaviour theory, based on Ajzen and Fishbein's (1980) reasoned action theory, offers intention as a predictor of behaviour through three antecedents: attitude toward behaviour, perceived behaviour control and subjective norm (Ajzen 1991; 2002). According to the theory, a person's behaviour is the outcome of his/her intention to execute a behaviour, and the resultant intent is impacted by his/her attitude toward the behaviour as well as his/her personal standards (Figure 9).

Figure 9: The Theory of Planned Behaviour (TPB) Model



Source : Ajzen (1991)

3.5.1 Attitude towards the behaviour:

which is commonly defined as a permanent mental or neural willingness gained from experience, exerting a directive or dynamic influence on an individual's response to objects and situations with which he comes into contact (Armitage & Christian, 2003). When it comes to an attitude toward a specific behaviour, each belief associates the behaviour with a specific outcome, consequence, or some other attribute (such as the cost of undertaking a specific behaviour). Because each attribute is evaluated in advance as positive or negative (emotional component of the attitude), the behaviour is automatically perceived as desirable (if it has predominantly positive outcomes) or undesirable (if it has predominantly negative outcomes). The relationship between attitude and intention is confirmed to be stronger than the relationship between intentions and actual behaviour (Kim & Hunter, 1993), which is expected given the powerful influence of external factors on the relationship between intentions and behaviour.

According to Ajzen and Fishbein (1974, 1977, 2005), we must distinguish between two types of attitudes. The first type is known as general attitudes toward an object. The target can be physical (a building), racial or ethnic, institutional (the government), policies (taxation laws), events (trade fairs), or any other broad target. Where attitude toward performing a specific behaviour with regard to an object are labelled as the second type of attitude (paying taxes or going to a trade fair). When it comes to predicting single behaviours, general attitudes are useful for predicting behavioural patterns or multiple act-criteria. Attitude toward a behaviour is far more highly predictive of specific behaviour.

3.5.2 Perceived self-efficacy (perceived behavioural control):

In his theory of planned behaviour, Ajzen (1988) proposed the concept of 'perceived behavioural control' as a predictor of both behavioural intention and behaviour itself. This is interesting (Lortie & Castogiovanni, 2015) since PBC is the integral factor separating the

TPB from the Theory of Reasoned Action (Ajzen and Fishbein 1980). Perceived behavioural control is conceptually related to self-efficacy, The PBC construct is similar (and somewhat interchangeable according to some scholars) with the Entrepreneurial Self-Efficacy (ESE) construct (Lortie & Castogiovanni, 2015). Both constructs refer to a person's belief that the behaviour in question is under his or her control but perceived behavioural control is often measured by the ease or difficulty of the behaviour (e.g., 'I find it difficult to exercise three times a week'), whereas self-efficacy is measured by the individual's belief in his or her ability to carry out the behaviour in the face of adversity (Wallston, 2001).

According to social cognitive theory (Bandura 1997), human behaviour is "a product of the interplay of intrapersonal influences, the behaviour that individuals engage in, and the environmental forces that impinge on them" (Bandura, 2012). The interactions of these factors shape one's beliefs in one's ability to successfully perform a specific behaviour in a specific situation, as well as his/her expectations of the behaviour's outcomes ((Bandura et al., 1999)). The Individuals' self-efficacy beliefs have a strong influence on their decision to take an action despite the presence of alternatives, the amount of effort they expend to carry out the action, their perseverance in the face of difficulties and challenges, and their success in carrying out the action (Dwyer & Cummings, 2001). Self-efficacy is both the cause and the result of an action choice, and it influences how individuals perform their current task as well as how they direct their future task accomplishments.

Self-efficacy according to Bandura (2012) is the most influential factor affecting behaviour because it affects behaviour both directly and indirectly through its impact on other processes and factors such as goal setting, outcome expectations, and perceptions toward environmental facilitators and impediments. Because of the fundamental impact of self-efficacy on human behaviour, scholars have applied the concept in a variety of fields, including entrepreneurship. According to academics, the vocational selection is a complex process that necessitates a strong sense of self-efficacy (Betz & Hackett, 2006; Schjoedt & Shaver, 2007).

3.5.3 Subjective norm

is the belief that develops in an individual's mind as a result of social pressures from those closest to him (parents, family, and friends) about what he wants to accomplish (Ajzen, 1991). It refers to the expectation that a significant person or group of people will approve and support a specific behaviour. Subjective norms are determined by an individual's perceived social pressure from others to behave in a certain way, as well as their motivation to conform to those people's views. Previous research has shown that the influence of

subjective norms on intention formation is generally weaker than the influence of attitude. Furthermore, a study conducted by Norris Krueger and his colleagues (Krueger, Reilly, & Carsrud, 2000) revealed that subjective norms are unrelated to individuals' intentions to start their own businesses; thus, the authors advocate for additional research and improvements to the measures currently in use. One possible explanation for inconsistencies in the significance of the subjective norms variable stems from the fact that a portion of the information contained in this variable is already present in the desirability of engaging in a specific behaviour. One of the theory of planned behaviour's most frequently mentioned flaws is the very weak relationship between subjective norms and intentions. Icek Ajzen (1991), the author of the theory of planned behaviour, explains this by stating that intentions are heavily influenced by personal factors such as attitudes and perceived behavioural control. Armitage & Conner, 2001 criticize the subjective norms variable's limited conceptual framework, which results in a weak correlation between normative beliefs and intentions. Ravis & Sheeran, 2003 argue in this context that the confirmed correlation between descriptive norms and intentions implies the possibility of this variable's predictive power, which provides strong motivation for additional research in this area. Descriptive norms refer to actual activities and behaviours performed by others. Social norms, on the other hand, refer to the individual's perception of other people's opinions on how he or she should behave. Both of these variables (descriptive and social norms) are considered to be components of the subjective norms factor in our research study.

In the domains of social psychology, intentions have been found to be the greatest predictor of intended individual behaviours, particularly when the desired behaviour is uncommon, difficult to measure, or includes unexpected time delays (Krueger, Reilly, and Carsrud 2000). Entrepreneurship is a good example of such “ intentional behaviour (Bird 1988; Krueger and Brazeal 1994). While the TPB, first proposed by Ajzen, is one of the most widely examined intention models (1991). This model has been widely used in entrepreneurship research, and its efficiency and capacity to predict EI and behaviours has been proven in several studies (e.g., Kolvereid & Isaksen, 2006; Karimi et al. 2014).

3.5.4 The Opportunity Perception factor as a complement predictor within The TPB Model

The opportunity is the constant flow of ideas that are formed and pushed through social communication, creative ideas and work at all levels(Dimov, 2007). While the opportunity visualized as a knowledge process for entrepreneur includes analysis, seeking attentive, coherent, alert contains, opportunities and governance (Tang et al., 2012). This indicates that

awareness of the opportunity is the ability to identify and benefit from business opportunities. We might assume that education can help people gain knowledge and develop personal skills that will help them become more aware. Tang et al. (2012) discovered that alertness scanning and the pursuit of opportunity represent cumulative learning and experience in the evolutionary cognition process. Therefore, entrepreneurship education is one of the factors influencing opportunity perception. Whereas, entrepreneurship begins with the identification of a business opportunity (Krueger, Reilly, & Carsrud, 2000). while there are two conditions must be met for a particular individual to discover a certain opportunity first the individual must have all of the information required to identify the opportunity secondly he must have the cognitive properties (i.e. cognitive schemes) required to value the opportunity (Shane & Venkataraman, 2000). Entrepreneurs, according to Baron, 2006, have a cognitive framework that allows them to "connect the dots" in an efficient manner. He implies that entrepreneurs differ from non-entrepreneurs in the sense that entrepreneurs are better at using their cognitive framework in such a way that they perceive a connection between seemingly unrelated courses of events and thus get ideas for potential products or services that can serve as the basis for new ventures; Shane and Venkataraman,2000 have also suggested this.

Despite the fact that three behavioural antecedents are known to affect a wide range of behaviours, previous studies from various fields (e.g., Bagozzi et al., 2004; Conner and Armitage 1998; Haustein & Hunecke, 2007; Perugini & Bagozzi, 2001) affirmed that additional factors could improve the TPB's ability to predict and determine an individual's intention and behaviour. Whereas, the Opportunity perception can be added to the TPB as an additional essential element in the domain of entrepreneurship. As aforementioned, opportunity perception is an important factor of the entrepreneurial act as an intentional process (Gaglio & Katz, 2001; Shane and Venkataraman 2000, Krueger, Reilly, and Carsrud 2000). In addition, the process of entrepreneurship and the creation of a new business are founded on the occurrence of two events that happen at the same time (Krueger and Brazeal 1994; Reitan, 1997). First event is the appearance of a relevant entrepreneurial opportunity, while the second one is that person who will be capable and ready to take advantage of such an opportunity. When these two events take place simultaneously, entrepreneurial behaviour may occur, and a new business may be started. The potential entrepreneur, according to Reitan (1997a), is someone who sees a business opportunity and really desire to establish a new business but has not actually taken any actions to do so(Karimi et al., 2016b). The concept is that perception of opportunity and entrepreneurial intention are significant elements of potential entrepreneurs, and that both must be there for new business creation to

occur. Perceptions and other cognitive variables have a crucial part in both the exploration and creation views of entrepreneurship, according to Edelman & Yli-Renko, 2010. They claimed that in identifying efforts to start a new business, the perception that opportunities exist currently is more significant than the changes in customer requirements or the actual environment. In other words, a person's views of opportunity will motivate them to start a new business. The Higher perceptions will enhance the intention to start a new business as well as the energy of potential entrepreneurs to do so (Edelman and Yli-Renko 2010). A perception of an opportunity might trigger a cognitive process based on intention that consequently lead to entrepreneurial action (Krueger, Reilly, and Carsrud 2000). It may well be that opportunity perception and entrepreneurial intention are inextricably linked (Bird 1988). That is, someone who considers a business opportunity intriguing is more likely to pursue it (Bhave, 1994).

3.6 Entrepreneurship Education as part of the Entrepreneurship Algerian ecosystem

Since 2004 new reforms in Algerian higher education system have been implemented (Benziane, 2004). These changes focused on a distinct aspect of education and training system modernisation. Its first goal was to have the three-cycle system adopted (Bachelor Master Doctorate). Second, it attempted to adjust the educational program to market need as well as implement Quality Assurance. Third, through enhancing interaction between businesses, students, and higher education institutions, these changes improved the employability, personal, and professional development of graduates throughout their careers (Dif et al., 2018). The Algerian Ministry of Higher Education, on the other hand, acknowledges that these reforms may be realized primarily through the implementation of programmes and the establishment of internal structures that promote student creativity, entrepreneurial skills, and research. Consequently, Algerian universities will be able to improve and extend its role throughout the national innovation system.

Despite the difficulties relating to the promotion of entrepreneurship and the creation of a business, Algeria is conservatively attempting to establish an ecosystem advantageous to young entrepreneurs. public support for the formation of new businesses Its distinguishing feature is that it is specifically directed at students and recent graduates of universities. Global Entrepreneurship Week Algeria, INDJAZ El-Djazar, and DZWEBDAYS are among them. With specifically targeted actions where young people can find support in various

forms, to meet and learn from entrepreneurs, share their experiences, and exchange practices and ideas.

University students' entrepreneurship should be viewed as a learning approach to the project rather than a purely academic approach. In order to start a business, students must be able to identify needs, set goals, find partners, and reverse-plan.

There are also private-sector initiatives with a similar concept to participate in the promotion of entrepreneurial intention and action. Initiatives such as the Algerian Academy of Entrepreneurship, founded in October 2010, seek to increase the visibility of young project leaders, coming from universities, through awareness-raising activities and competitions (Dif et al., 2018).

From a similar perspective, the Algerian community in the United States is also active. Indeed, the Algerian Start-Up Initiative (ASI) was founded in 2009 as a collaboration between Algerian businesses and leading ICT companies in the United States. ASI organises competition for the best business plan, which is aimed at start-up project leaders. The competition winners receive incubation at Algiers' Sidi Abdellah incubator, counselling and coaching sessions, and an investment fund from Silicon Valley in the United States (Guechtouli & Guechtouli, 2014). This same community announced the establishment of an Algerian-American investment fund called "Casbah Business Angels" in October 2011, ushering in a new mode of financing in Algeria.

On another hand, the Algerian higher education institutions are much more interested in entrepreneurship in order to promote its culture among university students. This is demonstrated by the inclusion of an entrepreneurship specialty in higher education programs and the signing of agreements between the Ministries of Higher Education and Scientific Research and Work, Employment, and Social Security. This agreement resulted in the establishment of the "Entrepreneurship House.". This latter is based in all Algerian Higher Education institutions in collaboration with The National Agency for Youth Employment (ANSEJ), which later became The National Agency for Entrepreneurship Support and Development (ANADE). The Entrepreneurship House focused on both simplifying business creation methods and valorising entrepreneurship behaviour by providing entrepreneurship education and training programs and opening up higher education institutions on business creation in order to promote entrepreneurial culture and the entrepreneurship education.

3.7 What is entrepreneurship education?

Traditional education, according to Hansemark, 1998, is distinguished by just a transformation of information and abilities, whereas entrepreneurship education is held up as a model for transforming attitudes and motives. Apart from obvious benefits such as fostering business start-ups, entrepreneurship and entrepreneurial education also have a larger market potential (Holmgren et al., 2004). The desire and capacity to start a new business are two of the most critical conditions for success. Entrepreneurial attitudes are clearly in great demand in independent employment relationships, not just in the course of a traditional entrepreneurial career (Frank et al., 2005).

Entrepreneurship education aims to inspire people, particularly young people, to be responsible, ambitious individuals who go on to become entrepreneurs or entrepreneurial thinkers who contribute to economic growth and sustainable societies.

Entrepreneurship education can be described as follows, according to the European Commission communication: *“Entrepreneurship education is about learners developing the skills and mindset to be able to turn creative ideas into entrepreneurial action. This is a key competence for all learners, supporting personal development, active citizenship, social inclusion and employability. It is relevant across the lifelong learning process, in all disciplines of learning and to all forms of education and training (formal, non-formal and informal) which contribute to an entrepreneurial spirit or behaviour, with or without a commercial objective”*(Eurydice Report, 2016).

Whereas an entrepreneurship education program is defined as follows in the context of this work: "...as any pedagogical program or process of education for entrepreneurial attitudes and abilities that includes the development of particular personal characteristics. Thus, it is not solely concerned with the immediate establishment of new businesses. " (Alain Fayolle et al., 2006).

As well according to the Consortium for Entrepreneurship Education (2008), Entrepreneurship education involves more than merely teaching someone how to run a business. It's also about creating a strong sense of self-worth and confidence, as well as stimulating creative thinking. Students learn how to start a business through entrepreneurship education, but they also learn a lot more. The following are examples of core knowledge gained through entrepreneurial education:

- The ability perceive opportunities in one's own life.

- The ability to exploit opportunities by coming up with innovative concepts and discovered the necessary resources
- The ability to start and run a new business.
- The ability to think critically and creatively.

So, in addition to business knowledge and skills, entrepreneurship education is primarily concerned with the establishment of certain beliefs, values, and attitudes, with the goal of convincing students to consider entrepreneurship as a viable and attractive alternative to paid employment or unemployment (Holmgren et al., 2004; Sánchez, 2010a). Thus, the proliferation of entrepreneurial education necessitates the organization of this topic framework.

Regarding else that the individuals may develop their abilities and creativity through entrepreneurship, as well as achieve their ambitions and gain a sense of independence and freedom. And, while "starting a business" is frequently tough (there are many failures), attempting to establish a business is a learning experience in and of itself that aids in the individual's growth (Alain Fayolle, 2007). At this level, entrepreneurship education should focus on developing a taste for entrepreneurship (in the broad sense) and stimulating the entrepreneurial spirit (entrepreneurship in a commercial sense, with the aim of obtaining a profit).

Entrepreneurship has a societal and economic dimension. In a market economy, entrepreneurship not only helps to individual development, but it is also the engine of economic progress (Crijns & Vermeulen, 2007). The entrepreneur, as an important factor of the entrepreneurial process (Krueger Jr et al., 2000), is always on the looking for better possibilities to organize and implement the necessary resources in order to convert these prospects into economic or social activity. By doing so, the entrepreneur initiates a process of "destructive creation," in which he establishes a firm that develops innovations, forcing established businesses to adapt or perish. The intensity of entrepreneurial activity is connected with the amount of development and economic growth in various nations at different times or in the same country at different times.

3.8 Priorities and Instructional Practices in Entrepreneurship Education

A plethora of Entrepreneurship Education courses and trainings has emerged as a result of the fast growing number of Entrepreneurship Education programs. While the variety of

Entrepreneurship Education approaches presents challenges for researchers attempting to keep up with the changes, these are a natural result of the variety of Entrepreneurship Education objectives, the various student groups who participate in it, the teachers, the educational institutions, and the location (Neck & Corbett, 2018).

There isn't, and shouldn't be, a single optimum way to teach Entrepreneurship Education. The method we teach Entrepreneurship Education should be an alignment between five interrelated aspects, as described by Alain Fayolle & Gailly, 2008 in their Entrepreneurship Education teaching model: the objectives, the students, the assessment, the material, and the pedagogies. Hence, after all the four factors have been determined, the methodology and pedagogies of an Entrepreneurship Education course are the last aspects to settle on. Finally, an Entrepreneurship Education course for a large group of secondary students with the purpose of increasing awareness must be taught differently than an Entrepreneurship Education course for a small group of graduate students who have self-selected into Entrepreneurship Education and may already be involved in nascent entrepreneurship.

Entrepreneurship education cannot be a one-size-fits-all approach; rather, it must be adapted to the situation. This makes a comparison of different approaches to Entrepreneurship Education more difficult. The three-category framework of learning about, for, and through entrepreneurship is the most common pedagogic classification (Lackéus, 2015, Hannon, 2005). While studying about entrepreneurship is concerned with raising awareness from a theoretical standpoint, entrepreneurship education is concerned with preparing aspiring entrepreneurs and small business owners. Learning through entrepreneurship is a more active method to learning, in which students learn by actively performing entrepreneurship.

In fact, the three types of Entrepreneurship education will not be easily distinguished within a course or even a single lecture session (Blenker et al., 2011a). There may be components of learning about, for, and through present at the same time when teaching Entrepreneurship education. When teaching about prototyping, for example, there will inevitably be theoretical knowledge regarding various views, whereas learning for entrepreneurship will require students to think on the use, strengths, and implications of different prototyping methodologies. Simultaneously, students may be involved in actual prototyping in the same session, learning through entrepreneurship. This is in accordance with Blenker et al., 2011's processual approach, in which multiple pedagogies support each other.

3.8.1 Learning about entrepreneurship

Awareness education is a term used to describe the process of learning about entrepreneurship as a societal phenomenon (Chell, 2014). The approach is theoretical in nature, and it entails investigating the "what" and "why" of what entrepreneurs do, as well as the economic and social repercussions of entrepreneurship (Johansen & Schanke, 2013; Lackeus, 2015). The about method could include learning about myths, team roles, and theoretical perspectives like the individual opportunity nexus and effectuation. Knowledge (Shane & Venkataraman, 2000), rather than skills and experience, is emphasized in order to gain a general understanding of the event and its implications. Pittaway & Edwards, 2012 showed that learning about entrepreneurship was the major strategy in 59 % of the courses studied in an examination of 117 course outlines and syllabi in the US and UK.

3.8.2 Learning for entrepreneurship

Learning for entrepreneurship was employed as the major approach of pedagogics in 27.4 % of the courses assessed, according to Pittaway & Edwards, 2012. Entrepreneurship education focuses on preparing potential entrepreneurs for a career as self-employed individuals. According to Henry et al., 2005, the purpose of this type of entrepreneurship education is to give participants the necessary knowledge to establish a business. Business planning is one of the most widely utilized instructional approaches in entrepreneurship education. According to a research by Honig, 2004, 78 of the top 100 US institutions offered business planning courses in the areas of entrepreneurship and small business management. Students in a business planning class often create a written document outlining a new product, service, concept, or organization. This document, which summarizes marketing, production, operations, funding, and organizational strategies, is frequently presented in class or to external judges in business plan competitions. The business plan has a role in the process world of planning and prediction, as outlined by Neck & Greene, 2011. Entrepreneurship, according to this viewpoint, is taught in a linear manner, including students identifying and assessing opportunities, building concepts, and making forecasts. Accordingly, the business plan view has been challenged for creating a disconnect between what is taught in entrepreneurship classes and what entrepreneurs are doing in reality (L. F. Edelman et al., 2008; Neck & Greene, 2011). In entrepreneurship research, the theory of effectuation (S. D. Sarasvathy, 2001) has revealed that diverse perspectives on how entrepreneurs think and act exist. Entrepreneurship is viewed as a linear process in business planning courses with a process world view. Students, according to Neck & Greene, 2011, learn less about actual practice and the dynamic, unpredictable, and non-linear features of entrepreneurship as a

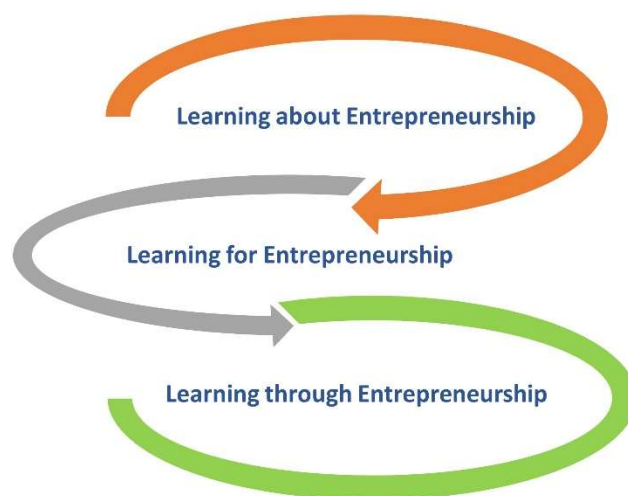
result. They suggest that students devote an excessive amount of time to sharpening secondary data collection abilities rather than taking effective action in the actual world.

3.8.3 Learning through entrepreneurship

In the last few decades, entrepreneurship has garnered a lot of attention. Several researchers in the field of entrepreneurship education have stated that teaching entrepreneurship through entrepreneurship is the most effective way to prepare students for real-world entrepreneurship (Heinonen & Poikkijoki, 2006; Neck et al., 2014). Neck & Greene, 2011 claim in their influential study that Entrepreneurship Education should include a variety of practices that allow students to build a propensity for action and develop authentic entrepreneurial processes in an immersive and iterative way. Hence,, learning through entrepreneurship means learning by doing. As a result, students develop entrepreneurial competences and skills that are transferable beyond the domain of entrepreneurship. Student start-up ventures, multidisciplinary practical projects, and partnership projects with local businesses to solve actual issues are all examples of how students can learn through entrepreneurship (Johansen & Schanke, 2013).

However, researchers in the field of entrepreneurship education are concerned about the significant emphasis on practical, experiential, and training pedagogies. Although there is widespread agreement on the importance of adding such components in Entrepreneurship education (Hägg, 2017; Neck & Greene, 2011), Hägg, 2017 warns that there is a risk of cognitive overload. In order to avoid action that overwhelms beginner learners and installs fear rather than learning, he claims that the action orientation must be counterbalanced by reflective thought.

Figure 10: Instructional Practices in Entrepreneurship Education



Source: Prepared by the researcher

3.9 Entrepreneurship education paradigms

To raise the main paradigms associated with the field of entrepreneurship In order to find logical answers, we must first ask the following question.

How can students be taught to create their own businesses?

How can students be prepared to start high-growth businesses?

How can students be taught to solve a wide range of societal problems through entrepreneurship?

3.9.1 What is the best way to teach students to think like entrepreneurs?

These questions are logical implications of entrepreneurship educators' willingness to give the best possible education while also recognizing the need to adapt to diverse research paths, institutional frameworks, and understandings of what it is. As a result, entrepreneurship serves a variety of educational objectives. Four distinct paradigms of entrepreneurial education are represented by the four questions. In this sense, a 'paradigm' is a scientific progress (for example, the identification of entrepreneurship as a major catalyst for economic growth) on which there is strong consensus but which leaves a number of difficulties for scholars already committed to the paradigm to examine and resolve (Blenker et al., 2011b).As a consequence, paradigms give researchers and educators norms and standards to follow when conducting study and teaching.

Compliance with an entrepreneurial paradigm, whether expressed or implied, entails a basic grasp of what entrepreneurship is and, by consequence, an understanding of the type of value that entrepreneurship educators are attempting to teach students to develop. The didactics and pedagogy of the course or program are influenced by the teaching objective. To put it another way, if the purpose is to teach students how to establish a business, it will be more important to give them with the essential abilities.

These four paradigms of entrepreneurship education are described here, where they frequently serve as a reference to opt on a particular approach to entrepreneurship education.

3.9.2 Students are being taught how to turn their ideas into projects

While most business schools' entrepreneurship curricula now include a micro-level concentration, another viewpoint has gaining traction. Governments generally aim to encourage entrepreneurial activity for macroeconomic reasons: the activity must result in social progress, not just personal profit. In the entrepreneurship field, the link between entrepreneurship and economic growth is well known and proven (see, for example, Davidsson et al, 2006). '...the relationship between the individual entrepreneur's profit

seeking behaviour and the production of social wealth is the real reason behind,' according to (Venkataraman, 1997). The objective of entrepreneurial action, according to this viewpoint, is to generate economic growth, which is transformed into a normative belief that entrepreneurs should expand their businesses (Wiklund & Shepherd, 2003). The essential assumption is that ideas developed at universities and other research institutes can and should be deployed to launch new businesses. In theory, entrepreneurship education may be viewed as a component of almost any academic curriculum. Therefore, there has been a substantial concentration in recent years on combining entrepreneurship education with a variety of other courses, particularly in the scientific, medical, and technological sciences. The expectation is that such collaborations will result in the rapid and efficient implementation of academic research, which will, in turn, lead to societal economic growth.

3.9.3 Preparing students to start new businesses

This way of teaching entrepreneurship is often considered to be the earliest and most widely used in the field. Its cognitive roots may be traced back to two different perspectives. The Austrian approach to economics (Kirzner, 1997), which focuses on the entrepreneur as the function of innovation driving economic growth. The other is the legacy of classical management theory, which views management control and planning as important engines for organizations and entrepreneurs coping to environmental forces. The integration of marketing (e.g., Kotler and Keller, 2009), strategy (e.g., Porter, 1980), and budgeting within some kind of framework is typically where inspiration for published literature comes from. Planning based on the SWOT analysis (Andrews, 1971). These ideas are bundled into a business plan structure as a dominant framework for entrepreneurship training when taken collectively. As a form of "how-to" curriculum, classes involve training business plan development techniques. Furthermore, participation in various sorts of business plan competitions is frequently related with these courses.

3.9.4 Mentoring students as project leaders

This sort of intervention is designed to offer help and advise to students who are planning to start or take over a business, or who are involved in the implementation of such projects. It is not only an issue of "teaching" intellectual and cognitive information in the framework of entrepreneurial education, but also of "teaching" skills and learning activities that will guide the individual in his own entrepreneurial process ((Ille Carrier, 2000)).

A In a global context, effective training must be supplemented by educational circumstances that allow students to "penetrate" the entrepreneurial spirit. must be accompanied by

educational situations which allow students to "pierce" the entrepreneurial spirit, in a global conceptual knowledge and skills remains essential. The first is cognitive, while the second is practical because they are learned through experimentation, uncertainty, risk taking, creativity, initiative and deductive reasoning (Gibb, 2002). The process of teaching and learning As a consequence, entrepreneurship entails acting on knowledge, experience, abilities, and, above all, perceptions and attitudes, all at the same time. This necessitates a pedagogy of action, which is the most appropriate educational mode in the situation, according to (Gibb, 1999). Project-based pedagogies (real or virtual) are the most favourable to innovation and adventure among the strategies most commonly used in action pedagogy (Albert & Gaynor, 2000).

Project-based pedagogies, according to Schieb-Bienfait, 2000, allow for "reciprocal learning." This is made feasible by a strong collective dimension that includes student-to-student exchanges, as well as student-to-teaching staff and potential project partners. The collective value of entrepreneurial learning is considerably increased once students have access to other people's skills and resources.

3.9.5 Incorporating an entrepreneurial mindset into day-to-day practices

Being entrepreneurial can be learned over time, according to S. Sarasvathy & Dew, 2008, but it is largely acknowledged that aspiring entrepreneurs, such as our students, need experience and practice to feel entrepreneurial and develop the mindset needed to assess and act on opportunities (Baron & Ensley, 2006; Baron & Henry, 2010). Over the last decade, entrepreneurship education research has propelled the idea of an entrepreneurial mindset as a desired learning result across business and non-business fields. Despite this, scholars have yet to come up with a single, unifying definition and measurement of the entrepreneurial mindset, which has resulted in a fascinating and rich area of research and academic debate (Haynie et al., 2010; Davis et al., 2016; Neck and Corbett, 2018; Kuratko et al., 2021).

Yeager & Dweck, 2012 claims that how students saw themselves had a considerable impact on their motivation and accomplishment. Carol Dweck says "Mindsets shape the running account that is taking place in people's heads," (Dweck, 2015). This mindset perspective on how we perceive the world makes sense since we are looking through that frame, which is identical to an empty and transparent picture frame, as we watch, interpret, and make decisions in our perceived reality. The question then becomes: how can we shift from our current mindset to one that is more entrepreneurial? Probably it's more of a "mind-shift" shifting from one level of reasoning, acting, and being to the next – than considering the

entrepreneurial mindset as a tangible, measurable state. The fact that each student may have a distinct starting point and a different finishing point is a crucial assumption. It becomes more vital to change one's thinking than to change one's reasoning itself. The student may determine the change to be a perceptual measurement. Our definition of entrepreneurial mind-shift is “a way of thinking, acting, and being that combines the ability to find or create new opportunities with the courage to act on them.” It is a journey into “a frame of mind, acting, and being that combines the ability to find or create new opportunities with the courage to act on them” that requires practice (Neck et al., 2021).

In fact, the argument is that entrepreneurship is not limited to a select few who can recognize market opportunities, draft a viable business plan, and convince potential buyers to supply the required capital. Through this paradigm, course elements combine awareness of opportunities and trends (Shane and Venkataraman, 2000; Spinosa et al., 1997) with innovation (Baker & Nelson, 2005) and effectuation (Sarasvathy, 2008).

The paradigm focuses on the individual rather than just the business or societal level, encouraging people to think like entrepreneurs by increasing their self-efficacy (Bandura, 1997). It attempts to realize opportunities that come from an individual and hence are unique and less easily imitated, by employing communication and creativity tools to perfect the project.

4 Conclusion:

The theoretical background for the study factors was offered in this chapter, as well as the concept of entrepreneurship and the entrepreneur, as well as the various dimensions that this phenomenon has been studied by researchers. We have highlighted the fact that entrepreneurship is now moving beyond characteristics and into the behavioural phase, focusing not on the personalities of entrepreneurs but on the activities they engage in. In order to gain more clarity on creativity and innovation in the entrepreneurship domain, it will be necessary to focus further on the processes underlying the “activity-based” concepts.

We've additionally, addressed entrepreneurial education and the numerous perspectives that shaped it. Furthermore, we've explored the concept of entrepreneurial intention and the basic models of entrepreneurial intention, beginning with the entrepreneurial event model and progressing through the economic psychological model and the planned behaviour theory model. Within the next chapter, we'll examine studies that have investigated the impact of

entrepreneurship on entrepreneurial intention in order to come up with an appropriate conceptual model for our research.

CHAPTER II: Theoretical model

1 Introduction

We provided a comprehensive view of the theoretical framework of entrepreneurial intention and education in the preceding chapter. Despite the importance of this element mean entrepreneurship education and training in the creation of entrepreneurial action among university students, the relationship between entrepreneurial education and entrepreneurial intention among university students has not received sufficient attention from studies in Algeria, and in order to increase our understanding of this relationship, we try to choose the best prediction model in this chapter. by comparing the most important models of prior entrepreneurial intention (which we reviewed in the chapter) and identifying the most recent developments in the model that would have been chosen.

2 Reasons for Choosing Intention as an Impact Indicator

Humans are active agents in their own development (Brandtstädter & Lerner, 1999). They do not engage in entrepreneurship by accident; they do it intentionally as a result of choice (Krueger, 2007). Accordingly, entrepreneurial intentions defined as the conscious state of mind that directs personal attention, experience, and behaviour toward planned entrepreneurial behaviour; Bird,1988 (Obschonka et al., 2010). In entrepreneurship theory and research, individual entrepreneurial intention has shown to be a significant growing construct (Carr & Sequeira, 2007; Hmieleski & Corbett, 2006; Wilson et al., 2007).While, according to Thompson, 2009 “*Entrepreneurial intent is substantially more than merely a proxy for entrepreneurship - it is a legitimate and useful construct in its own right that can be used as not just a dependent, but as an independent and a control variable.*”.

Intention is particularly useful in entrepreneurship education programs because “*intention proved to be best predictor of planned behaviour*” (Krueger et al., 1993: 5). Particularly when that behaviour is infrequent, difficult to observe, or involves unpredictable time lags (Souitaris et al., 2007). The entrepreneurial intention concept is frequently used as a measure of the impact of entrepreneurship programs due to its applicability. Furthermore, from the perspective of a researcher, it is not always practicable to wait a years to see how many students go on to start a real business. Using entrepreneurial intention as a measure for evaluating the impact of entrepreneurship education offers the advantage of reflecting the program's immediate impact.

The longer an entrepreneurial program's post-measurement is postponed, the larger the measurement bias due to contextual and time effects. It will be more difficult to identify the effect of a single item in the business creation process, such as an entrepreneurship program (Hytti & Kuopusjärvi, 2007).

The concept of entrepreneurial intention is employed in this dissertation since it is a well-validated concept that can be used to demonstrate the influence of an entrepreneurship education program.

3 Overview of impact studies

Following our review of research on the impact of entrepreneurship training on entrepreneurial intention, we discovered that the latter's content can be analysed from a range of perspectives, including the results of these studies' assessments of the impact on entrepreneurial intention, or simply the model used and its factors' influence. Where we find out that the theory of planned behaviour model was widely applied based on the strength of its theoretical evidence on its relevance and application to the context of entrepreneurial intention. Thus, the model's elements serve as mediators between the independent variable, entrepreneurial education, and the dependent variable, entrepreneurial intention. With the statistical treatment of each variable's effect in line with the study hypotheses. Meanwhile some research, the entrepreneurial education factor was also used as a moderator variable in the model. Therefore, in The following we will go through several studies according to what was mentioned early and which they worth an examination in view of the analytical approach used and the results reached.

3.1 Impact of Entrepreneurship Education

There is a considerable fact that the entrepreneurship education has been shown to have a favourable influence on entrepreneurship in general (Robinson & Sexton, 1994). When we examine at the several studies that have looked at the impact of entrepreneurship education and training programs on entrepreneurial intent, We come up to that each one of this studies focuses at a unique and specialized program offered by the institution that provides the entrepreneurship education program. Chen (2010) investigated the impact of entrepreneurship education, focusing on three forms of entrepreneurship education that could assist students at three institutions in central China: learning, inspiration, and incubation resources. In their study, Robinson et al. (1994) concluded that there is a considerable link between education

and the possibility of becoming an entrepreneur and the ability to attain success as an entrepreneur. They did not, however, distinguish between different types of education and did not consider the idea of especially relevant designed entrepreneurial education programs. Farashah (2013) assessed the effects of an entrepreneurship education curriculum pursued by Iranian students. Von Graevenitz et al. (2010) study a Munich School of Management entrepreneurial programme at Ludwig Maximilian University in Munich. Cui et al., 2019 from Chinese students in higher education. Olomi (2009) explores a training curriculum that is offered at Tanzanian Vocational Training Centers. Hahn et al., 2020 attempted to investigate the influence of entrepreneurship education in various types of courses (elective vs. compulsory) on students' entrepreneurial skills in a quasi-experimental research study. Galloway et al. (2005) investigates entrepreneurial programs at Scottish universities. As a result, it may be difficult to compare entrepreneurship programs, necessitating the need for authors to provide a detailed explanation of the programs under consideration. In the majority of research (e.g. Radu and Lou , 2008, Rauch & Willem Hulsink, 2012, Hern ndez-S nchez et al, 2019), there is almost little description of the entrepreneurship education program that is studied. While The fact that certain programs are offered at the school level (e.g., Oosterbeek et al., 2010), the majority at the university level, institutes, and some at the professional level (e.g. Olomi, 2009). significantly complicates the issue Therefore, the comparison of entrepreneurship education programs is dependent on the abstraction level selected. In light of this, and in accordance with what has already been stated, we will review the most important studies that have looked into the relationship between entrepreneurial education and university students' entrepreneurial intentions, taking into account the type of impact that the findings of these studies revealed.

3.2 Studies reporting negative impact or mixed results

To examine the effect of a leading entrepreneurship education program on university students' entrepreneurship skills and motivation. Nabi et al., 2016 used an instrumental variables approach in a difference- framework. Examining the variations in pre-treatment variables between the groups was important. Prior to the start of the program in September 2005, the survey were given to a total of 562 students in four study programs at the treatment (Breda) and control (Den Bosch) locations. The results indicate that the curriculum does not have the expected effects: the impact on students' self-assessed entrepreneurship skills is marginal, and the impact on their motivation to become an entrepreneur is also negative, regardless of the fact that all of the studies were focused on 250 observations. In their paper,

they look at how education and motivation will help students build entrepreneurial intentions in their first year of college. The findings indicate that there is an accumulation of a variety of positive learning experiences, such as theoretical understanding of the start-up process and acquisition of practical entrepreneurial skills and knowledge, combined with strong motivation from theoretical (tutors, peers) and practical exercises, where there is a strong increase in intentions. Entrepreneurial intention decreases as a result of the development of a more realistic and practical perspective on entrepreneurship.

Second, the findings emphasize the multi-faceted nature of entrepreneurship education and the interplay of various aspects of entrepreneurial learning and motivation that influence entrepreneurial intentions. Similarly, they describe that entrepreneurial motivation includes both theoretical (caused by external influences such as people or academic literature) and realistic (caused by group-based, practical hands-on exercises). These two forms of motivation can have a significant impact on people's hearts and minds, contributing to increased entrepreneurial intentions. On the other hand, for certain students, a single negative encounter, such as a tutor emphasizing business failure, is enough to act as a deterrent. This demonstrates that entrepreneurial motives have a deep emotional rather than strictly logical basis.

A third main finding is that the relationship between entrepreneurship education and entrepreneurial intention is complicated, and that entrepreneurial intention can fluctuate significantly, at least over the FYHE. Other factors, such as age, ethnicity, family support, or student dedication to entrepreneurship, can also play a role in determining entrepreneurial intentions.

- Up to four years after university students graduate, the paper of Alaref et al., 2020 offers new experimental data on the medium-term effects of entrepreneurship education on self-employment and labour market outcomes. The research examines whether entrepreneurship education can effectively promote real, nascent, or latent entrepreneurship. It also looks at whether there is a time lag between intentions and behaviour, which may explain why the effects of entrepreneurship education on job outcomes are poorly reported. Short- and medium-term follow-up surveys, as well as data on job history and individuals' attempts to start projects dating back to graduation, were used to create this study., The study offers unique insight into the timing of possible entrepreneurship education effects on self-employment and labour market outcomes.

The findings indicate that small program impacts on self-employment were largely concentrated in the year following graduation, but were not maintained over time. The program resulted in a temporary increase in nascent entrepreneurship, with participants becoming more likely to attempt to realize a project at some stage. They were more likely to launch a project as a result of these additional attempts. Nearly four years after graduation, program participants have a greater understanding of the structure of a business plan and how to apply for credit, but not as much as they did at the midpoint. Participants, on the other hand, have smaller business networks and are less likely to meet entrepreneurs. Although treated youths are marginally more likely to know how to apply for credit, nearly three out of four young people say that access to credit is the most significant barrier to starting a business.

According to Hahn et al., 2020 Their paper's empirical study is based on a sample of university students who took part in two waves of the Global University Entrepreneurial Spirit Students' Survey (GUESSS) The survey's participants come from a variety of fields of study and educational levels. Following the data collection in 2016, the GUESSS team created a longitudinal dataset by matching the answers given by students who took two consecutive surveys in order to create a database. The dataset records the answers from 1383 students from 21 countries. The study uses a quasi-experimental research design to determine the effect of entrepreneurship education in various types of courses (elective vs. compulsory) on students' entrepreneurial skills, which is dependent on participants' family exposure to entrepreneurship. It is discovered that participants in the two forms of entrepreneurship education profit to varying degrees in terms of entrepreneurial skills. Compulsory courses have a positive impact only for students with self-employed parents who believe their parents perform well as entrepreneurs; on the other hand, the positive impact of elective courses persists even after controlling for university results. The results indicate that the development of entrepreneurial skills among young people is influenced by both university and family, two social contexts in which students are socially embedded.

- Karimi et al., 2016b to determine the impacts of elective and compulsory entrepreneurship education programs on students' entrepreneurial purpose and recognition of opportunities, based on the theory of expected action. The results also showed that students' entrepreneurial intention increased significantly in the elective entrepreneurship education programs, but not in the compulsory entrepreneurship education programs.

- The purpose of Khalifa & Dhiaf, 2016 study was to investigate the effect of entrepreneurial education on entrepreneurial intention in the UAE using the Theory of Planned Behaviour. The sample size was 400 students. Structural Equations Model results show that EE has no effect on entrepreneurial intention. Where their findings show that entrepreneurial aim among UAE students is very poor. In the UAE, entrepreneurial education is not producing high levels of entrepreneurial motive. The lack of academic programs entirely devoted to entrepreneurship, as well as the UAE citizens's comfortable economic and social climate, are suggested as explanations for the phenomenon.

- In their research, Piperopoulos & Dimov, 2015 investigate whether the essence of the entrepreneurship course affects the production of students' entrepreneurial intentions. In the sense of a long-standing research interest in whether entrepreneurship education would influence the entrepreneurial actions of the students involved. During the 2010–2011 academic year, they conducted a survey of 114 undergraduate and postgraduate business students at a major British university in that order. They selected four entrepreneurship elective classes, two undergraduate and two graduate, with a total of 243 students enrolled. which aid in comprehending the systemic differences in the pedagogical background and context of entrepreneurial courses, as well as unpacking their consequences, may aid in a more precise and nuanced understanding of the impact of entrepreneurship education. They differentiate between theoretically and technically focused courses as creating various motivational frameworks for approaching entrepreneurship using the logic of regulatory focus theory. The findings indicate that the structure of the course moderates the relationship between students' self-efficacy beliefs and entrepreneurial intentions, with a negative relationship in "theoretically focused" courses and a positive relationship in "practically oriented" courses.

- Both Oosterbeek et al,2010 and von Graevenitz et al,2010 looked into compulsory programs. Therefore, Von Graevenitz et al,2010 suggest that an entrepreneurship education program is first and foremost a means for students to assess their potential for a future in entrepreneurship. According to the authors, a decrease in entrepreneurial intention is not necessarily a bad or a failure of the program, but it could have a socially desirable effect since students may learn that they lack the ability for an entrepreneurial career and change course.

3.3 Studies reporting positive impact

- Hernández-Sánchez et al, 2019 postulate that the use of an objective indicator, Such as the Total Early Stage Entrepreneurial Activity (TEA) could be more significant. The analysis showed that entrepreneurship education significantly affected the entrepreneurial activity of autonomous societies. The study concluded that entrepreneurship education should be a priority goal in the educational policy of these societies. In addition to promote role models, continue to support the financing of entrepreneurship initiatives through education and training, continue to implement government policies to support entrepreneurship, conduct assessments of the impact of these programs on the skills acquired in the short and medium term, and maintain them over time.
- Chen, 2010 has tested the impact of entrepreneurship education on entrepreneurial intention of university students, applying empirically the social cognitive theory. he postulates that there are three types of entrepreneurship education which could be benefits to students: learning, inspiration and incubation resources. Where, Inspiration was generally defined as “the infusion of some idea or purpose into the mind and the awakening or creation of some feeling of impulse” [J.A. Simpson, S.C. Weiner (Eds), Oxford English Dictionary, 2nd ed, vol. 7, Oxford: Clarendon Press, 1989.]. as well the Incubation resources for students, in a way that they will able to benefit from a pool of resources, which can help them to evaluate their business ideas and develop them into a venture. In such way the students can get close to technology with commercial potential, access research resources, and even access university seed-funding. The empirical analysis was carried out by the author through a questionnaire given to a sample of young undergraduate students of Economics and Management degrees. The sample was obtained from the three universities in central of China, Of the 410 questionnaires sent, 327 effective responses were confirmed. The author concluded to the result, that learning and inspiration come in through entrepreneurship education, strengthens students’ confidence to become an entrepreneur, which is consistent with Social Cognitive Theory. Indicating also that the students whose formulate an entrepreneurial intention most had a higher Entrepreneurial Self-Efficacy . On the other hand, his results show that incubation resource has direct rather than indirect impact on entrepreneurial intention. Whereas entrepreneurship education has a positive impact on students’ entrepreneurial intention. While learning and inspiration has the positive impact on entrepreneurial intention through the mediating role of Entrepreneurial Self-Efficacy, although incubation resources have the direct impact on entrepreneurial intention.

- The willingness to move from entrepreneurial intentions to behaviour, according to (Bogatyreva et al., 2019), may reflect societal cultural values. Consider Hungary, where 14.8 % of the population surveyed said they wanted to start a business, but overall entrepreneurial activity was just 7.9 %, or Germany, where 7.2 % said they wanted to start a business but start-up rates were just 4.7 %. They emphasize on the role of national culture in the intention-action connection as a moderator.

They use Hofstede's paradigm to investigate each of its six dimensions, individualism/collectivism, power distance, uncertainty avoidance, masculinity/femininity, long-term/short-term orientation, and indulgence/restraint, to obtain a finer understanding of the moderating effects of national culture (Hofstede, 1980, 1991, 2001; Hofstede, Hofstede, & Minkov, 2010).

They purposefully chose Hofstede's six dimensions of national cultural values because: - it is the most common framework still widely used, even in studies published in top-tier management journals; - using Hofstede's framework makes their results theoretically and empirically comparable to the findings reported in a substantial number of studies.

Using Hofstede's approach, they were able to focus on country-level cultural values that help or hinder an individual's transition from entrepreneurial intentions to start-up behaviour. Adding contextual factors allows them to examine the interplay between macro and micro level influences, providing a more holistic representation of the entrepreneurial process. They also theorize and empirically evaluate the contingent impact of each of Hofstede's six national culture dimensions on the conversion of entrepreneurial purpose into start-up action. As a result, they provide a more complex view of the role of national culture in entrepreneurship.

Culture can be described as "collective mental programming that distinguishes members of one group or category of people from members of other groups or categories of people" (Hofstede, 2001, p. 9). Values that are passed down through generations in a community frame mental programming, resulting in the development of those motivations, behaviours, and behavioural habits (Hofstede, 1980). In conclusion, their research shows that the cultural context in which the entrepreneurial process is embedded affects the translation of entrepreneurial purpose into subsequent actions. Namely, Power distance, ambiguity avoidance, masculinity/femininity, long-term/short-term orientation, indulgence/restraint, and

individualism/collectivism are some of the cultural aspects that can strengthen or weaken the readiness to move from mere intention to actual start-up activities.

- Farashah, 2013 investigates the effect of entrepreneurship education and training on entrepreneurship attitudes, social norms perception, self-efficacy, and entrepreneurial intention. The model was evaluated using empirical data obtained from 601 individuals in Iran. According to the results, pursuing one entrepreneurship course raises the probability of starting a company by 1.3 times. Fear of failure, desirability of an entrepreneurial career, entrepreneurs' social status, self-efficacy, and entrepreneurship education and training are all significant predictors of entrepreneurial intention, where perceived opportunity is a moderate indicator rather than a strong predictor. They discovered that entrepreneurship education and training help people manage the dynamic processes of identifying, evaluating, and influencing opportunities (DeTienne and Chandler, 2004; Fiet, 2000). While the Fear of failure as result is a consistent negative indicator of the probability of becoming an aspiring entrepreneur (Arenius and Minniti, 2005). Fear of failure may be affected by a number of structural mechanisms, including EET. It has been shown that having a role model decreases the fear of failure (Vaillant and Lafuente, 2007).

Cui et al., 2019 discussed in their article the scarcity of research on the relationship between entrepreneurship education and entrepreneurial mindset as a novel influence using a mediating model. Where the findings revealed that the effect of entrepreneurship education on entrepreneurial mindset is complex, based on 1428 valid samples from Chinese higher education students. While as a result of entrepreneurship education Students' entrepreneurial inspiration was greatly increased, which aided in the development of their entrepreneurial mindset. At a significant level, entrepreneurial creativity mediated the effect of entrepreneurship education on entrepreneurial mindset. In addition, The importance of educational attributes such as the type of learning experience, course, and activity was emphasized. Furthermore, extracurricular activity had a significantly positive direct impact, while curriculum attendance had a significantly negative direct effect.

- To investigate the impact of entrepreneurship education on entrepreneurial intention in the context of a Balkan country. Gentjan Cera and his colleagues had addressed their paper(Cera et al., 2020). An analysis of covariance was used in a quasi-experimental research design with a pre- and post-program setting to achieve the goal. In an dataset of 528 adults, propensity score matching (PSM) and coarsened exact matching (CEM) methods were used

to ensure comparability between two groups of people (those with formal entrepreneurship education and those without formal entrepreneurship education). The aim of using this triangulation method was to get more reliable results.

- Yi, 2018 paper uses a structural equation model to investigate the relationship between internship efficiency, entrepreneurial desirability, entrepreneurial feasibility, and entrepreneurial intention. The study includes 702 graduating engineering students from two Chinese research universities. The findings showed that the consistency of a student's internship has a positive and important effect on their Entrepreneurial Intention. More precisely, the standard of internships has a direct and indirect impact on students' entrepreneurial intention. Furthermore, the relationship between internship quality and students' entrepreneurial intentions is partly mediated by entrepreneurial desirability and feasibility. The multiple group comparison test revealed some significant differences between gender subgroups, including family characteristics and entrepreneurial experiences. The results provide new theoretical insights into the role of internships in university students' entrepreneurial intention. In practice, this research emphasizes the value of enhancing internship efficiency, which can boost students' entrepreneurial desirability and feasibility, thereby boosting their entrepreneurial intention(Yi, 2018).

- Oehler et al., 2015 conducted an empirical analysis of the existing state of entrepreneurial knowledge and education with 386 Bamberg University business administration undergraduate students at the end of 2011. Students come from all over Germany, with only a few international students, especially MBA students between the ages of 25 and 34. The respondents are undergraduates in their third semester of business administration who are on average 22 years old. They find also that undergraduate students think schools do a good job of imparting relevant knowledge to entrepreneurs. Furthermore, for entrepreneurs, knowledge of finance, accounting, and management accounting, as well as corporate planning and management, is critical. Since students describe their knowledge in these categories as merely average. They identify deficiencies in technical, social, and personal competences. They use a multivariate setting to assess differences in skills and competences in the empirical research. Students' age, general level of entrepreneurship-related expertise, ambition to become entrepreneurs, share of relevant material taught in school, and evaluation of the transition of competence by the school attended before the Bachelors program all have a significant impact on the self-perceived gaps, according to the

researchers. A significant percentage of students in the study's sample (more than 40% of students) plan to be entrepreneurs in the future.

- Hernández-Sánchez et al., 2019 address in their paper some of the issues raised in the literature, such as the use of objective measures to evaluate the impact of entrepreneurship education programs. This research uses one of the criteria from the Global Entrepreneurship Monitor (GEM), Total Early-Stage Entrepreneurial Activity (TEA), which takes the characteristics of a country's entrepreneurial dynamics and tests all current entrepreneurial ventures that have been in the market for less than 3.5 years. where the objective was to analyse the training programs offered by Spain's autonomous communities and their average rate of entrepreneurial activity, as well as to assess the impact of these entrepreneurial education training programs on their rate of entrepreneurial activity. There were 200 questionnaires distributed in total. The findings in this paper show that entrepreneurial education programs are generally effective. This research also shows that entrepreneurship education initiatives are closely linked to a community's entrepreneurial engagement.

- The aim of (Zreen et al., 2019) research is to look into the effect of business incubators and internship programs on students' entrepreneurial intentions in Pakistan. The data was gathered from students at six public sector universities in Islamabad, Pakistan. To test their hypotheses, they used PLS SEM with SmartPLS. According to the findings, the more enthusiastic students are about participating in an entrepreneurial internship program, the better they will feel about their desire to start a business. They go on to state that the entrepreneurial internship program has been shown to be important in fostering entrepreneurial intentions among students. Concluding that students who have completed an internship are more likely to see entrepreneurship as a viable career option than students who have not completed an internship. That is, the more enthusiastic students are about participating in business incubator programs, the more likely they are to start a business.

- The Siu & Lo, 2013 research investigates the cultural contingency of individualism–collectivism orientation in the cognitive model of entrepreneurial purpose in order to advance the body of knowledge in the area of entrepreneurial cognition. This research uses a self-perceptual approach to look at how individualist and collectivist constructs influence this cognitive model in a collectivist setting. The current study focuses on a Chinese ethnic group in order to lay a theoretical basis for future cross-national studies. While according to the findings, the predictive power of perceived social norms toward entrepreneurship on entrepreneurial intention is based on the degree of interdependent self-construal of

individuals. This supports the cognitive model's cultural contingency: for Chinese who place a higher importance on their personal contacts, their expectations of what influential people in their lives think about their new venture creation (e.g., relatives, close friends, partners, and colleagues) have a big impact on their entrepreneurial intentions.

- The role of entrepreneurship education in enhancing entrepreneurial self-efficacy and intentions is examined in the paper of Shinnar et al., 2014 . Furthermore, the essence of the connection between entrepreneurial self-efficacy and students' intentions to pursue an entrepreneurial career is investigated. Finally, the influence of gender on this relationship is investigated. The survey was done at the start and end of a semester-long introductory entrepreneurship course. The findings show that while both groups' entrepreneurial self-efficacy increased, only the male students' increase was statistically significant. Furthermore, although neither gender's entrepreneurial intentions changed statistically significantly, findings revealed a positive correlation between entrepreneurial self-efficacy and entrepreneurial intentions, indicating that this relationship is moderated by gender. Gender must be included in any analysis of entrepreneurial self-efficacy and intention, according to these findings. The Results also suggest that existing entrepreneurship education programs could be struggling to achieve out to females and should be redesigned.

- The main contribution of Raposo & Paço, 2011 study is to give some perspectives on entrepreneurship education. They want to differentiate between "enterprise education" and "small business and entrepreneurship education and training." The most great outcomes of enterprise education are to cultivate enterprising people and foster an attitude of self-reliance through appropriate learning processes. Entrepreneurship education and training programs are specifically designed to encourage entrepreneurship. The authors' literature suggests that the rate of new business creation is the most appropriate metric for evaluating the outcomes of entrepreneurship education. However, according to some studies, the effects of such programs are not immediate. As a result, several researchers attempt to comprehend the precursors of venture formation, concluding that longitudinal studies are needed. The key topics studied by different scholars are addressed based on an analysis of the research published about the current correlation of entrepreneurship education and entrepreneurial activity. The positive effect of entrepreneurship education, according to the authors, poses a double challenge for governments in the future: an increased need for financial funds to support entrepreneurship education, as well as the selection of the appropriate educational program.

- Nabi et al., 2017 examine 159 published papers from 2004 to 2016 using a teaching model framework to systematically analyse empirical data on the effect of entrepreneurship education in higher education on a variety of learning outcomes. They explored rigorously relationships between pedagogical approaches and concrete results using the teaching model system. While the findings was that entrepreneurship education impact research still focuses on short-term and subjective outcome steps, and that it appears to seriously under-describe the actual pedagogies being studied, supporting previous reviews and meta-analyses.

Furthermore, they use their analysis to make an up-to-date and empirically driven call for future studies on the effects of university-based entrepreneurship education to focus on less evident, but highly promising, new or under-emphasized directions. This involves, for example, the use of novel impact indicators related to emotion and mindset, an emphasis on impact indicators related to the intention-to-behaviour transition, and an investigation into the explanations for some of the conflicting results in impact studies, such as the use of individual-, background-, and pedagogical model-specific moderators.

- The authors Nasiru et al., 2015 used two formative second order constructs to model the relationship between entrepreneurship intention and five other variables. They used SmartPLS (2.0) to investigate the impact of perceived effective entrepreneurship education, perceived University support, perceived creativity disposition, entrepreneurial passion for inventing, and entrepreneurial passion for founding on entrepreneurial intent. Because of its ability to estimate a formative measured variable, the PLS was readily used in this analysis. The two-stage approach was used to estimate the model parameters for the first-order reflective and second-order formative variables. The study found a significant positive relationship between perception of University support, perceived creativity disposition, entrepreneurial passion for inventing, entrepreneurial passion for founding, and entrepreneurial intention using a sample of 595 students from three Federal Universities in Northern Nigeria. However, Their findings support the hypothesis that there is a positive relationship between perception of university support, perceived creativity disposition, entrepreneurial passion for inventing, entrepreneurial passion for founding, and entrepreneurial intention. These findings indicate that these variables would have an effect on students' entrepreneurial behaviour. The proposed positive relationship between perceived effective entrepreneurship education and the entrepreneurial intention was an outlier, as it suddenly revealed an important but negative relationship, which was not supported. This

means that students' perceptions of entrepreneurship education's effectiveness inhibit them from trying to pursue entrepreneurial endeavours after graduation.

- Mei et al., 2020 research outlines the evolution of entrepreneurship education in China's higher education institutions and the effects of entrepreneurship education on student entrepreneurial intention. This article employed data from a survey of Chinese students to reveal that students in various types of institutions and major fields had varying levels of interest in entrepreneurship education. Furthermore, the higher the level of entrepreneurship education attained by the students, the higher their self-efficacy in making entrepreneurial decisions and the greater their entrepreneurial intention. Between entrepreneurship education and student entrepreneurial intention, student entrepreneurial decision-making self-efficacy played a mediating role. Entrepreneurship education, they found, has a positive impact on entrepreneurial intention. Whilst taking a course in entrepreneurship education has a strong impact on entrepreneurial decision-making. The positive impact of entrepreneurial decision-making self-efficacy on entrepreneurial intention was also confirmed. Furthermore, entrepreneurial decision-making self-efficacy played an important role as a mediator between entrepreneurship education and entrepreneurial intention. The results also revealed a distinction between the current Chinese and Western contexts, demonstrating that taking entrepreneurship-related classes had a greater impact on student entrepreneurial intention than entrepreneurship-related internship.

- Bae et al., 2014 conducted a meta-analysis of 73 studies with a total sample size of 37,285 people and discovered a slight but meaningful correlation ($r = .143$) between entrepreneurship education and entrepreneurial intentions. This relation is stronger than the one between business education and entrepreneurial intentions. However, the overall study discovered that entrepreneurship education is correlated with entrepreneurial intentions in a positive way. Furthermore, accounting for the impact of pre-education entrepreneurial intentions on post-education entrepreneurial intentions decreases the relationship between entrepreneurship education and post-education entrepreneurial intentions, according to this study.

- The Jena, 2020 study's main goal was to undertake a formal evaluation of students' attitudes toward entrepreneurship education and how that influenced their entrepreneurial intentions. The impact of the entrepreneurial environment on entrepreneurial intention was also investigated in the presence of a control variable, such as gender and entrepreneurial family background. Determined on the basis behaviour theory. The data was gathered from

students of business management in Central India. To identify the relationship between proposed constructs, this study used survey research (a non-experimental field study design). Research method, it is argued, is an effective method for analysing sensitive beliefs, behaviours, preferences, and social attitudes. Following this analysis, a mixed-method technique was used to collect samples using both purposive and random sampling approaches.

The colleges/universities were chosen using a purposeful sampling method, while the respondents were chosen using simple random sampling. As part of their course curriculum, 950 questionnaires were distributed to business management students studying entrepreneur subjects. There were 535 completed questionnaires submitted in total. Partially completed (incomplete) questionnaires were rejected after initial screening. Finally, using the 'R analytics software,' 509 questionnaires were found to be appropriate for further analysis. The findings revealed that a positive attitude toward entrepreneurship education has a substantial positive effect on entrepreneurial intention. The study also indicated that while gender has no effect on the relationship between attitude and intention, the control variable family context has a major impact on the relationship between attitude and intention when it comes to entrepreneurship education.

- Zhang et al., 2014 attempt to define the relationship between entrepreneurship education, previous entrepreneurial exposure, perceived desirability and feasibility, and entrepreneurial intentions for university students using Ajzen's theory of planned behaviour and Shapero's entrepreneurial event model, as well as entrepreneurial cognition theory. The data was gathered through a survey of ten universities, which yielded 494 valid responses. They used probit estimation to show that perceived desirability has a major impact on entrepreneurial intentions, while perceived feasibility has no effect. Although they claim that exposure has a significant negative impact and that entrepreneurship education has a significant positive impact. Males and those from technical universities and backgrounds, on the other hand, have higher entrepreneurial intentions than females and those from other universities and backgrounds.

- Ndofirepi, 2020 through his study tried to see if certain psychological characteristics (need for achievement, risk-taking propensity, internal locus of control) could mediate the relationship between perceived entrepreneurship education effects and entrepreneurial intentions. This was accomplished through a cross-sectional survey of 308 Zimbabwean vocational education students. The findings show that entrepreneurship education has a

positive and statistically relevant relationship with the need for achievement, risk-taking propensity, internal locus of control, and entrepreneurial goal intentions. Furthermore, a statistically significant amount of variation in entrepreneurial intentions was explained by need for achievement, risk-taking propensity, and internal locus of control. However, Only the desire for achievement, out of the three psychological characteristics, partially mediated the relationship between entrepreneurship education and entrepreneurial goal intentions.

- The aim Díaz-Casero et al., 2017 paper was to see how the university environment, which measured informal aspects, influenced university students' entrepreneurial intentions, which reflected formal aspects. To accomplish this, a structural model was created and used. For a sample of 2497 university students, partial least squares (PLS) analysis was used to evaluate the model's relationships. The findings emphasize the impact of entrepreneurial education on entrepreneurial intentions. The significance of the university setting in which the student grows is also revealed to a lesser extent in the findings. As a result, they show that university context conditions entrepreneurial intentions of university students both directly and indirectly—through entrepreneurial education—while education also directly explains entrepreneurial intentions. Students may be inspired to create innovative ideas and motivated to engage in entrepreneurial activity by the informal factors of the university background, such as a university environment conducive to entrepreneurship. In turn, structured factors such as the entrepreneurial education system can influence students' attitudes, values, and entrepreneurial motives by enhancing their awareness, assisting them in developing practical and managerial skills for starting a business, and encouraging them to improve their networks and recognize opportunities.

- The importance of entrepreneurship education in promoting entrepreneurial intentions has been addressed in paper of Ferreira et al., 2017 . In terms of how these factors influence entrepreneurial intentions, the role of self-efficacy, risk taking, proactiveness, and demographic variables was investigated. The research hypothesis developed from the literature review was evaluated using a cross-sectional survey with a sample of 125 students from a Brazilian university. The survey included a set of survey items based on previous research to assess self-efficacy, risk-taking propensity, proactiveness, and demographic factors that influence entrepreneurial intention.

The study's key results include whether people with a father who works for a private corporation are less likely to start their own business. Furthermore, the findings of this study revealed that age has an effect on entrepreneurial intention, which can have an impact on

educational programs. This research contributes to the theoretical understanding of entrepreneurship education since there is controversy in the literature about whether age influences entrepreneurial intention. The findings also suggest that there is a relation between risk-taking propensity and entrepreneurial intention. As a result, entrepreneurship education is a crucial part of creating an environment that supports potential business venture activity. Furthermore, the results of the study discussed in this paper show that personal behavioural characteristics such as risk-taking propensity have an impact on entrepreneurial intention. This relationship between taking risks and deciding to start a business is likely to enhance educational outcomes and training programs. According to the authors, business schools should concentrate their entrepreneurship education classes on understanding how demographic variables affect entrepreneurship, but students should still learn to be entrepreneurial regardless of their age or risk-taking skill.

- Ferreira & Fernandes, 2017 investigates the impact of entrepreneurship education on entrepreneurial activities among university students in three distinct realities in a comparative international context (Portugal, Spain and Brazil). They used Structural Equation Modelling (SEM), which they estimated using the Partial Least Squares (PLS) method. Using Henseler's method, they were able to evaluate the statistically relevant variations between the path coefficients for the models for the three countries. A multigroups study was used to see whether there were any major variations in student entrepreneurial orientation between the three countries. The findings reveal variations between countries in many dimensions, which help to understand the students' entrepreneurial intentions. Furthermore, the findings demonstrate the importance of recognizing the various entrepreneurial ambitions that exist in various countries, as well as the respective triggers of such influences

- The Çera & Çera, 2020 study looked for evidence of the impact of an entrepreneurship education program on entrepreneurial intention in a post-communist transition country. The CEM approach was used to divide people into two groups: those who were introduced to or completed an entrepreneurship study program (treated group) and those who did not attend the program (untreated group) (control or comparison group). This form of study design necessitates pre- and post-programme ratings for the treated and control groups. With the help of IDRA, a market research firm, conducted a survey at the person level. During the first months of 2018, data was collected from Albania's eight major urban areas. Just half of the questionnaires (528 respondents) were valid for the current study, despite the fact that nearly 1,000 were completed. This research reveals evidence that

participating in an entrepreneurship study program offered by universities has a positive effect on people's intention to run a business. The results of the study highlight the importance of entrepreneurship education programs in encouraging people to start businesses.

- The aim of Iwu's research (Iwu et al., 2021) was to understand better entrepreneurial intention and its antecedents in the studied context. Another goal was to learn how students felt about entrepreneurship education, the curriculum and course material, as well as the lecturing team's competency levels. The research is focused on cross-sectional quantitative data obtained from students at a South African university. Perception of entrepreneurship education, perceived relevance and adequacy of curriculum and course content, perceived competence of lecturing team, and student entrepreneurial intention were all included in the conceptualized framework. The instrument used was created using validated measurement items from previous studies. Although the empirical findings show that the respondent community strongly believes in the value of entrepreneurship education for economic growth, it also shows that they are familiar with the importance and benefits of entrepreneurship on a macro level. The research also discovered that a moderate and positive relationship exists between student entrepreneurial intention and the lecturing team's perceived competency. Also as a suggestion from the authors, The organisations which offers entrepreneurship programs must shoulder the burden of ensuring that those who provide the courses are not only highly qualified, but also capable of triggering the entrepreneurial mindset in students.

3.4 The relationship between TPB model factors and entrepreneurial intention

The Perceived Attitude, Subjective Norms (SN), and Perceived Self-efficacy are all components in the theory of behaviour. According to Veciana et al. (2005), the attitude toward the act relates to the degree to which a person has a positive or negative opinion or appraisal of the activity in issue. A similar definition adopt Eagly and Chaiken (1993) who view attitudes as *“psychological tendencies expressed by evaluating a particular entity with some degree of favour or disfavour.”* For Souitaris et al. (2007: 570), *“attitude towards self-employment is the difference between perceptions of personal desirability in becoming self-employed and organizationally employed.”* According to Fini et al. (2012: 390) *“attitude toward behaviour, refers to the degree to which a person has a favourable or unfavourable appraisal of the behaviour under scrutiny.”*

On the other hand, social norms refer to the perceived societal pressure to perform or not engage a behaviour (Veciana et al., 2005). These are based on our assumptions about what important people in our lives would think if we started a business. Similarly according to Linan *“is the pressure and approval from significant others of becoming an entrepreneur, thus taking into account the individual’s social context.”* Whereas perceived entrepreneurial self-efficacy has been defined as individuals' beliefs in their abilities to successfully perform the tasks required for starting and managing a new business, as well as their expectations for the outcomes of creating a new venture (McGee et al. 2009; Kickul et al. 2008; Cox et al. 2002; DeNoble et al. 1999; Chen et al. 1998).

According to the Theory of Planned Behaviour, Ambad & Damit, 2016 investigated the predictors of entrepreneurial intention among undergraduate students. They found that a student's personal attitude had a significant impact on their desire to become an entrepreneur. As a result, it is proposed that the more positive a student's attitude about entrepreneurship is, the more entrepreneurial intention they have. Second, among undergraduate students, perceived behavioural control was revealed to have a significant impact on entrepreneurial ambition. As a result, if students believe it is simpler to become an entrepreneur, they will be more motivated to do so. Souitaris et al. came at a similar conclusion (2007). Finally, perceived relational support has been discovered to have a considerable impact on entrepreneurial intent. In other words, the more support they have from their parents, family, friends, and others, the more successful their business will be. While Rauch & Willem Hulsink, 2012 in Their study does not recognize subjective norms, in particular, into their analysis research model, although is part of the original TPB model, is that the entrepreneurship education cannot directly affect the values of friends and family. Whereas, The findings of the study of Miralles et al., 2017 revealed that entrepreneurial knowledge has a favourable impact on entrepreneurial intention, which is mediated by the TPB model's perceptual factors (PA, SN, PBC). In their research they investigated the relationship between entrepreneurial knowledge and entrepreneurial intention, as well as the mediating effects of the TPB perceptual variables: personal attitude (PA), social norm (SN), and perceived behavioural-control (PBC), using a structural equation model (SEM) to analyse the responses of a sample of 431 experienced working-age individuals .

While analysing the responses of 205 participants in six Iranian universities' entrepreneurial education programs. According to Karimi et al., 2016, the entrepreneurial education programs significantly enhanced students' subjective norms and perceived behavioural

control. Also in order to contribute to a better understanding of the impact of entrepreneurship education on entrepreneurial intention and determination, Delanoë & Brulhart, 2012 used an intention model that relates the impact of attitude toward entrepreneurship, subjective norm and entrepreneurial self-efficacy to the entrepreneurial behaviour intention expressed by a group of French project carriers. the analysis shows that the three selected antecedents appear to have a positive effect on both entrepreneurial intention and determination. And according to a study on a sample of 220 young Chinese adults, Lai & To, 2020 confirmed that entrepreneurship policy and e-entrepreneurship education were antecedents of people's attitude towards e-entrepreneurship, subjective norms, and perceived behavioural control, while subjective norms and perceived behaviour control significantly influenced their e-entrepreneurial intention. Conversely, people's attitudes toward e-entrepreneurship had no significant impacts on their e-entrepreneurial intentions.

Moreover based on a modified theory of planned behaviour model, Xu et al., 2016 used stratified cluster sampling and a questionnaire to review entrepreneurship education in secondary schools. In addition, the effects of entrepreneurship education, personal traits, and demographics on attitude, subjective norm, perceived behavioural control, and entrepreneurial intentions on 1018 secondary school students in China. the analysis indicated that Entrepreneurship education and personal traits (locus of control and innovativeness) were significantly positive predictors of entrepreneurial intention, and their effects on it were completely mediated by perceived behavioural control.

- The aim of Hussain & Norashidah's research (Hussain & Norashidah, 2015b) was to see how entrepreneurial education affected entrepreneurial intentions and to validate the TPB theory as a tool for measuring entrepreneurial intentions in Pakistan. The study's emphasis was on the influence of specific aspects of entrepreneurship education, such as theoretical awareness (Know-what) and social networking (Know-who). This study was conducted on final year undergraduate and graduate business students enrolled in public and private HEIs/universities in Sindh, Pakistan, to further explore this issue from the perspective of developing countries. Data was collected using a self-administered survey method based on a questionnaire adapted from Linan and Chen's (Linan & Chen, 2009) EIQ on entrepreneurial intentions and education questioner (Lo, C. T., & Sun, H. Y. 2008). The research used a sample of 499 students from nine Sindh HEIs collected between March and May 2014. To test the interrelationship between entrepreneurial intentions and entrepreneurial education, this study used structural Equation Modeling (SEM) Path analysis with AMOS 18.0. At long

last, The findings of this study back up the theory of planned behaviour's entrepreneurial intentions model. The findings have indicated that entrepreneurial education has a substantial impact on students' entrepreneurial intentions. Furthermore, the findings of this study revealed that theoretical entrepreneurship awareness (know-what) and knowledge of social network development (know-who) are critical components for conveying entrepreneurial education.

- Hongyi Sun, Choi Tung Lo, Bo Liang, 2016 Research study proposes a conceptual model that connects all of TPB's antecedent variables with the four components of entrepreneurship education that have been elaborated (Why, What, How and Who). The purpose of this work was to see how Entrepreneurship education affects Entrepreneurial intention. A questionnaire was created in this order to assess the students' responses to the constructs of the education-entrepreneurial intention model. In order to further investigate the particular impact of the education components. There were three parts of the questionnaire. The first section contains four TPB constructs. The four educational structures are discussed in section two. The third section deals with demographic data. meanwhile In 2010, data were collected at three Hong Kong universities. All of the students were in the department of system engineering and engineering management, and they are taking a similar course called Entrepreneurship for Engineers. When they took part in the survey, the students were in their first, second, or third year of study. In three universities, questionnaires were distributed and returned, respectively. The total number of questionnaires distributed was 294,. In their analysis they utilized Structure Equation Modelling (SEM) path analysis based on AMOS to evaluate the inter-relationships among these variables. The results of the empirical test show that the four components of entrepreneurial education have an effect on attitude, social norms, self-efficacy, and entrepreneurial intention, in that order. It also shows that the four Entrepreneurship education components and the three TPB antecedent variables are linked to one another.

- The impact of entrepreneurship education on the predictive value of attitude, subjective norms, and self-efficacy for entrepreneurial intentions is investigated in Shah et al., 2020 paper. Using entrepreneurship education as a moderating variable, a true experimental design (post-test-only control group design) is used to examine the change in the essence and intensity of the influence of independent variables (personal attitude, self-efficacy, and subjective norms) on the dependent variable (intentions). Data was obtained from various higher education institutions in Oman from the treatment group (those who had

completed an entrepreneurship course) and the control group (those who had not taken an entrepreneurship course).

A total of 500 questionnaires were distributed, and 204 completed questionnaires were returned, with 196 of them qualifying as valid responses. Hypotheses were tested using structural equation modelling. The Partial Least Square approach was used to approximate the statistical relationship between the modelled variables. The findings showed that self-efficacy, subjective norms, and attitude toward entrepreneurship are all important predictors of entrepreneurial intentions. Entrepreneurship education, on the other hand, moderates this relationship by improving the path coefficients of entrepreneurship attitude and self-efficacy. At the same time, it reduces the subjective norms' direction coefficient.

- The Sánchez, 2013 research attempted to investigate entrepreneurship education at the secondary school level, employing a pretest (before starting the program) –post-test (when the program was over) design with TPB-based hypotheses and quantitative data to see if entrepreneurship education affects the intentions and competencies expected of an entrepreneur. Meanwhile the aim of their research was to find an answer to the following question: Do entrepreneurial training programs boost students' skills and intentions to set up a business?

The analysis involved 729 students, 357 of whom were in the experimental group and 372 in the control group. After analysing their responses, a final sample of 710 secondary school students was selected, with 302 men (42.54%) and 408 women (57.46%) ranging in age from 14 to 16. 347 were allocated to the experimental group and 363 to the control group out of the total of 710. The entrepreneurship program (E Vitamin) subject of study offered activities grouped into four components: (1) basic teachings in accounting, finance, marketing, and management, adapted to the age of students; (2) teaching and practice in competencies such as self-efficacy, proactiveness, and entrepreneurship; and (3) teaching and practice in entrepreneurship. Presentations, discussion of readings, practical exercises, computer simulations, group dynamics and games, and other teaching methods were used. This entrepreneurship program was offered as a free elective subject in various schools for eight months (October to May), allowing students to select this course if they so desired. The experimental or program group consisted of students who participated in the program, while the control group consisted of students who did not.

The results show that the program sample's mean values for self-efficacy, proactiveness, risk taking, and self-employment intention are significantly higher in the posttest than in the pretest. The findings support their hypotheses, indicating that students in the "experimental" group increased their skills and intentions toward self-employment, while students in the "monitor" group did not.

- The theory of planned behaviour, or TPB, served as the theoretical basis for the Küttim et al., 2014 study. The study's aim was to determine the content of university entrepreneurship education and how it influenced students' entrepreneurial intentions. The study design was cross sectional, and the sample consisted of students from 17 European countries that were divided into two classes for comparison based on their economic development levels: efficiency-driven economies and innovation-driven economies. The effect of various variables, including involvement in entrepreneurship education, on entrepreneurial intentions was studied using frequencies and binary logistic regression. They conclude that what is offered in entrepreneurship education is not always what is most needed, as more lectures and seminars are delivered, but students expect more networking and coaching activities. Entrepreneurial intentions were found to be positively influenced by participation in entrepreneurship education.

- Academic entrepreneurship, according to Miranda et al., 2017, is the process by which a person or group of individuals connected to a university or research center through their work use knowledge generated in their research to establish business ventures or spin-offs. The impact of attitudes, subjective norms, and perceived control on academics' entrepreneurial intentions was investigated using the Theory of Planned Behaviour as a framework. In 2014, the research was aimed at all academics engaged in teaching and/or research at 82 Spanish universities. The sampling frame was built from information available on the universities' websites in the absence of a list of active academic personnel, covering a total of 1030 centers (faculties and schools). According to the analysis, the key antecedent of entrepreneurial intention is one's attitude toward entrepreneurship. Creativity, perceived utility, and entrepreneurial experience all motivated this.

- The following questions were investigated in the Westhead & Solesvik, 2016 study:
 - Do female Entrepreneurship education students report lower levels of entrepreneurial intent than male Entrepreneurship education students?

- Do female Entrepreneurship education students with high entrepreneurial purpose cite the same Entrepreneurship education alertness and risk-taking skills as male Entrepreneurship education students with high entrepreneurial intention?

They formulated and tested theories that take into account the possible moderating impact of gender on participation in entrepreneurship education.

Three random samples of business studies students who had taken two Entrepreneurship education modules in their second or third year were used to collect data. The population of business studies Entrepreneurship education students was defined with regard to each university's background. A quota of business studies Entrepreneurship education students was chosen to be surveyed in each university context. Each business studies Entrepreneurship education student was assigned a random number for each sampling frame, and random number tables were used to classify three random samples of business studies Entrepreneurship education students. Between May and December 2012, business studies Entrepreneurship education students in the three random sampling frames were given a standardized questionnaire to fill out by hand. 125 out of 175 business studies Entrepreneurship education students replied in total. The response rate was 71 % overall.

A random sample control group of engineering students who were not allowed to take Entrepreneurship education courses was also surveyed. The populations of engineering students were defined in relation to two of the three universities. Engineering student quotas were established for random sampling frames of engineering students. Each engineering student was assigned a random number for each sampling frame. Two random samples of engineering students were identified using random number tables. Between May and December 2012, engineering students at two universities were given a standardized questionnaire to fill out by hand.

They shed light on the concerns that Entrepreneurship education students had a higher level of entrepreneurial motive than those who did not take part. Women showed slightly lower purpose strength than their male counterparts, indicating that Entrepreneurship education did not favour all participants equally. Gender did not moderate the relationship between Entrepreneurship education and scan, connection or evaluation alertness skills, or the strength of entrepreneurial purpose, contrary to expectations, according to the three-way interaction study. With the exception of non- Entrepreneurship education female students, all groups had a positive relationship between connection alertness skill and intention. They discovered that

both men and women benefit from Entrepreneurship education, as they demonstrated higher purpose at high connection alertness ability than those who did not.

This highlights the positive aspects of entrepreneurship education, at least in terms of the ability to communicate. Moreover, the three-way interaction analyses revealed that the relationship between risk propensity ability and entrepreneurial intention strength was slightly negative for female Entrepreneurship education students, compared to non-Entrepreneurship education female students. It was positive for men, and male Entrepreneurship education students with high Risk perception ability had a higher overall intention. When it comes to entrepreneurship, it seems that women are more risk averse, or more rational, in the sense that as their RC rises, their intention decreases. At high Risk perception, men tend to have more intention than women, and this is even more pronounced for men participating in Entrepreneurship education. Which isn't always a nice sign because it can lead to men taking unnecessary risks, which may explain why so many new businesses struggle. Female Entrepreneurship education students' risk propensity skills did not improve, and in fact, those with higher risk perception skills might be encouraged to be more positive about pursuing a career in entrepreneurship.

- Aries et al., 2020 used a quantitative research technique to investigate the effects of attitude toward behaviour, perceived behavioural control, and subjective norms on entrepreneurial intentions among BINUS Online Learning students who study entrepreneurship and business plan using a gamification learning tool. For one month, data was collected in a cross section. There are 1562 students enrolled in the Management Program (distance learning program). To achieve a randomized 400 sample, the Slovin formula was used with a 5% alpha factor. The hypothesis is tested using multiple linear regression analysis with independent variables such as attitude toward behaviour, perceived behavioural control, and subjective norms, as well as the dependent variable, entrepreneurial intentions. The instrument's validity and reliability were tested first. The authors conclude that both partially and simultaneously, attitudes toward behaviour, perceived behavioural control, and subjective norms have a positive and important effect on entrepreneurial intentions. Perceived behavioural control is the most important factor in entrepreneurship training, particularly for distance learning students at BINUS Online Learning.

- Entrialgo & Iglesias, 2016 investigate how the relationship between entrepreneurship education and subjective norms influences entrepreneurship perceptions and attitudes. Entrepreneurship education moderates the interaction between (non-academic) subjective

norms from the immediate surroundings and perceived behavioural control. For this analysis, empirical data were collected from a total population of university students during the academic year 2011–2012. Final-year students enrolled in Business Management, Commerce, Marketing, and Tourism degrees were given the questionnaires as a choice during a class session. There were 338 available questionnaires in the final study.

They postulate that Entrepreneurship education has a significant moderating effect on several analysed relationships. On the one hand, the relationship between Subjective Norms and perceived behavioural control is weaker for individuals with Entrepreneurship education than for those without. Regarding this, knowledge, competencies, and the contacts generated by Entrepreneurship education act as a substitute for family approval and support. Those who have received Entrepreneurship education seem to become less dependent on the approval and support of their families in their perception of control over entrepreneurial behaviour. They conclude that entrepreneurship education has a major moderating impact on a number of the relationships examined. On the one hand, individuals with Entrepreneurship education have a weaker relationship between Subjective Norms and perceived behavioural control than those without. In this regard, entrepreneurship education's knowledge, competencies, and networks act as a substitute for family acceptance and support. In their perception of influence over entrepreneurial behaviour, those who have earned Entrepreneurship education tend to become less reliant on the approval and encouragement of their families. The difference in perceived behavioural control between students with positive and negative Subjective Norms (above and below the mean for this variable) is not very noticeable in the subsample of students with Entrepreneurship education.

Entrepreneurship education has a significant positive impact (in terms of generating perceived behavioural control) on people who live in a non-entrepreneurial environment. Entrepreneurship education, on the other hand, seems to have a moderating impact on people in a favourable environment, with the mean of the perceived behavioural control variable being marginally lower in cases with Entrepreneurship education than in cases without Entrepreneurship education. Entrepreneurship education could increase knowledge of the challenges of starting a new business, giving students a more realistic perspective. Entrepreneurship-E may reduce students' overconfidence by demonstrating that the requisite tasks are difficult.

The core conclusion of this study is that in the generation of entrepreneurship intentions, entrepreneurship education interacts with Subjective Norms (from the surrounding environment). However, depending on the variable to be affected, the extent of the interactions' effects varies. On the one hand, entrepreneurship education seems to have a substitution influence in the generation of perceived behavioural control as compared to Subjective Norms. Family support is very important in generating perceived behavioural control in students who do not have Entrepreneurship education, but the role of Subjective Norms in generating perceived behavioural control is not significant in students who have Entrepreneurship education. In the generation of positive attitudes toward entrepreneurship, on the other hand, Entrepreneurship education appears to have a multiplicative impact with Subjective Norms. In this case, the two variables seem to complement one another in terms of producing attitudes. The sum of individual effects is greater than the conjoint effect.

- An ex ante and ex post survey was used by Karimi et al., 2016 to determine the impacts of elective and compulsory entrepreneurship education programs on students' entrepreneurial purpose and recognition of opportunities, based on the theory of expected action. A total of 205 participants in entrepreneurship education programs at six Iranian universities were polled using a questionnaire. Their findings postulate that Students' subjective norms and perceived behavioural control were significantly improved by both forms of entrepreneurship education programs. The results also showed that students' entrepreneurial intention increased significantly in the elective entrepreneurship education programs, but not in the compulsory entrepreneurship education programs.

- The research by Rauch & Willem Hulsink, 2012 uses a quasi-experimental design to investigate the impact of entrepreneurship education as well as to see whether there are gaps in the pre- and post-test in the absence of a training intervention. A pre-test, a post-test, and a follow-up measuring entrepreneurial activity were administered to both the treatment and comparison classes. The research model of their analysis, in particular, does not recognize subjective norms, which is part of the original TPB, but entrepreneurship education cannot directly affect the values of friends and family. In reality, the proposed model assumes a causal chain extending from entrepreneurship education to intervening constructs and finally to entrepreneurship education outcomes. This suggests that entrepreneurship education will

shift people's attitudes and perceptions of behavioural control, and that this change will lead to entrepreneurial intentions.

They found that entrepreneurship education enhances attitudes, perceived behavioural control, and the motivation to start a company. People's intentions are influenced by their attitudes. as result, entrepreneurship education has an impact on entrepreneurial behaviour. Finally, they discovered that 18 months after the first course, would-be entrepreneurs are taking action. Where, they were able to identify a causal pathway by which entrepreneurship education influences actions. in addition they conclude that there is a possibility that the order in which effects occur is essential in their assessment analysis.

- The main goal of Wardana et al., 2020 research was to look into the relationship between entrepreneurship education and entrepreneurial mindset of students, as well as the role of attitude and self-efficacy in mediating this relationship. The convenience random sampling procedure, which is commonly used in entrepreneurship research, was used in this analysis. This quantitative analysis enlisted the participation of approximately 390 students. Participants were recruited via an online survey from several universities in Malang, East Java, and the results were determined using structural equation modelling (SEM). According to the results of this study, entrepreneurship education has a positive impact on entrepreneurial self-efficacy, entrepreneurial attitude, and entrepreneurial mindset. Entrepreneurial self-efficacy, on the other hand, encourages an entrepreneurial attitude rather than a mindset. Moreover, entrepreneurial attitude is critical in mediating both entrepreneurship education and self-efficacy in the development of students' entrepreneurial mindsets.

- The investigation of the specificity of entrepreneurship context and his importance was broached by Maresch et al, 2016. The authors examined the question if the entrepreneurship Education increases entrepreneurial Intention at the same effect and in the same way. exploring the data provided by Austrian students at 23 institutes of higher education , collected with the help of online survey which was designed according to the Theory Planed Behaviour (TPB) model . while their main findings show that entrepreneurship education which was measured by the number of entrepreneurship courses that each student took; examples include business planning, creativity, entrepreneurial marketing, and others. It is generally effective for business sciences and engineering students. However, the entrepreneurial intention of science and engineering students is negatively affected by subjective norms, while this effect is not clear for those in business field. The

authors suggest that further research is needed on effective educational methods for teaching entrepreneurship to science and engineering students.

- As well Bandura ,2012 emphasizes the importance of self-efficacy for career selection, stating that "in the process of career decision making, self-efficacy affects the slate of options given serious consideration." Entrepreneurship researchers emphasized the critical role of self-efficacy in various aspects of the new venture creation process. Entrepreneurial self-efficacy refers to a person's perceived ability to successfully perform the tasks and roles of an entrepreneur, as well as his or her expectations regarding the outcomes of starting a new business (BarNir et al. 2011; McGee et al. 2009; Kickul et al. 2008; Chen et al. 1998). Previous research has found that entrepreneurial self-efficacy has a strong influence on people's intention and competence to become entrepreneurs, the amount of effort they put into starting a new business, their persistence in dealing with the changes and challenges of the new venture creation process, and their success in performing entrepreneurial roles and tasks (Trevelyan 2011; Chen et al. 1998; Boyd and Vozikis 1994). Entrepreneurial self-efficacy is also a key personal capability that motivates entrepreneurial behaviours (Tyszka et al. 2011; McGee et al. 2009; DePillis and Reardon 2007; Chen et al. 1998) and allows entrepreneurs to overcome difficulties during the entrepreneurship process such as opportunity recognition, marshalling resources, and improving new business performance (Tumasjan and Braun 2012; McGee et al. 2009; Barbosa et al. 2007; Bryant 2006; Markman and Baron 2003). Entrepreneurial self-efficacy thus influences not only individuals' decision to pursue an entrepreneurial career, but also their future performance in the process of managing and developing a new venture (McGee et al. 2009; Bandura 2000). Entrepreneurial self-efficacy, in particular, affects students' motivation and competence to enter the challenging process of starting their own businesses, as well as the extent of their academic preparation for their future career path as an entrepreneur (Bandura 2012).

- According to Chen et al. (1998), students who have a strong sense of efficacy in successfully performing entrepreneurial tasks such as marketing, financial control, management, and risk taking are more likely to become entrepreneurs than those who have low beliefs in their entrepreneurial abilities and skills. A substantial body of research has demonstrated that entrepreneurial self-efficacy has a significant positive impact on students' entrepreneurial career choice (e.g. BarNir et al. 2011; Kickul et al. 2009; Carr and Sequeira 2007; Zhao et al. 2005).

- Lián (2008) provided empirical evidence that students' perceived entrepreneurial skills have a significant impact on their entrepreneurial intention by influencing their attitude toward starting their own businesses, perceived behavioural control, and subjective norms. Because of its significant impact on all of the factors that shape entrepreneurial intention, Lián concluded that improving students' entrepreneurial self-efficacy can significantly increase their intention to pursue an entrepreneurial career. As a result, entrepreneurial self-efficacy has the greatest impact on students' entrepreneurial career intentions, both directly and indirectly.

3.4.1 Perceived Opportunity and Entrepreneurial Intention

Entrepreneurship research is deeply rooted in the notion of an entrepreneur as someone who discovers and capitalizes on opportunities. Essentially, there will be no entrepreneurial action if there is no entrepreneurial opportunity. Schumpeter (1934) defines the entrepreneur as a great inventor, and Kirzner (1973) associates entrepreneurship with the ability to predict and exploit market imbalances. From a cognitive standpoint, it has been argued that entrepreneurs have a cognitive framework that makes them especially alert to new opportunities (Kaish & Gilad, 1991; Shane & Venkataraman, 2000; Gustafsson, 2006).

Based on the existence of supply and demand, Sarasvathy, Dew, Velamuri, and Venkataraman (2003) present their own opportunity typology. They divide opportunity recognition into three types of opportunity exploitation, arguing that if both supply and demand exist, all that is required is for the entrepreneur to recognize the entrepreneurial opportunity. In these cases, the entrepreneur is referred to as an opportunity recognizer. If there is a demand but no obvious supply, or if there is a supply but no obvious demand, the missing side must be identified. An entrepreneur who seizes such an opportunity is known as an opportunity discoverer. Finally, there are cases where there is no obvious demand or supply, but the entrepreneur still finds a business opportunity.

The entrepreneur is then referred to as an opportunity creator. Kirzner (1973) proposed the concept of entrepreneurial alertness, arguing that the entrepreneur was an opportunity identifier who was able to detect and capitalize on market disequilibrium. In a study conducted by Kaish and Gilad (1991), the concept of entrepreneurial alertness was tested for the first time, and some support was found. Kaisha and Gilad (1991) stated that their study was exploratory in nature and that additional research would be required before conclusions could be drawn.

While in some of the most recent research Suroso et al., 2020 investigate the moderating role of gender in determining the influence of opportunity recognition and entrepreneurial self-efficacy on entrepreneurial intention, concluding that the relationship between opportunity recognition and entrepreneurial intention is found to be weaker for females by 11.70% than males. Women are found to be less adept than men in seeking new and potential entrepreneurial opportunities due to limited exposure to the industry and entrepreneurial world, which weakens the perceived level of opportunity recognition among females, resulting in a lesser influence on their entrepreneurial intention.

In addition, The entrepreneurial perceived opportunity according to Esfandiar et al., 2017 is the most important predictor of entrepreneurial goal intention, as well as self-efficacy, feasibility, desirability, attitude, and collective-efficacy, while social norms have no effect on entrepreneurial intention. Furthermore, the level of opportunity recognition in the context of Algeria is particular. The financial facilities are a factor to motivate students to start an Entrepreneurial project in parallel with a high difficulties to found a job in the market.

4 Development of Conceptual Framework And Hypotheses

As previously stated, the majority of the intention models created in the field of entrepreneurial research It was built on three original models: the Entrepreneurial Event Model, EEM (Shapero & Sokol, 1982), the Theory of Planned Behaviour Model(TPB) (Ajzen, 1991), and the Entrepreneurial Intention Model EIM (B. Bird, 1988). The model of Boyd and Vozikis ,1994, for example, is a revised version of the Entrepreneurial Intention Model (EIM) for B. Bird ,1988, while The psycho-economic model (EPM) established by Davidsson,1995 is based on the three models: the planned behaviour theory model, TPB, the revisited EIM model of Boyd and Vozikis , and the entrepreneurial event model. Where the models psychological EPM of Davidsson (1995) ,the Entrepreneurial Intent Models of B. Bird, 1988, and Boyd and Vozikis (1994) criticized by it limits ,while they were not able to cover the entire aspect factors about how entrepreneurial intention works to predict entrepreneurial behaviour and formation at the individual or social level. as mentioned before some of them ignored personal factors (i.e family and friends) or attitudes toward entrepreneurship. On another hand ,Schlaegel and Koenig (2014) found that the planned behaviour theory model is more accurate in predicting entrepreneurial intention than the entrepreneurial event model, and that all motivational factors for the planned behaviour theory model (attitude, behaviour orientation, personal criterion, and the ability to control

behaviour) are more accurate in predicting entrepreneurial intention than the entrepreneurial event model. However, each of the two models serves a distinct purpose, which must be considered while deciding which model is more appropriate to the study strategy and objectives. In terms of the structural status of the two models, we notice that the theory of planned behaviour TPB has a distinguishable variable from others in the social aspect, The personal indicator (the opinion of family and friends), whereas the EEM entrepreneurial event model does not include this variable and instead includes the entire social aspect under the part of the desirability perception. As and that, The variable of perception of desirability in the entrepreneurial event model is considered as a broad concept that includes the personal and social aspect.

Thus, the TPB, first proposed by Ajzen,1991, is one of the most frequently studied intention models. This model has been frequently used in entrepreneurship research, and its usefulness and capacity to predict entrepreneurial intentions and behaviours has been proven in a number of studies (for example, Karimi et al. 2014; Kolvereid and Isaksen 2006). TPB is a prominent theory for explaining individual behaviours, and according to Web of Science, it has been referenced over 5000 times since it was originally published. Lorti and Castogiovanni (2015) examined at 42 studies that reveals a significant relationship between entrepreneurship intention and TBP's factors. Arenius and Kovalainen (2006) conducted a similar research using the Global Monitoring Data (GEM) dataset to investigate certain Nordic countries and made a similar significant association. Hence, with such a wide range of learning outcomes, we may conclude that the TPB is an appropriate theoretical model for demonstrating and anticipating entrepreneurial intentions.

Despite the fact that many papers support the link between the TBP and its use in entrepreneurial contexts, Kruger et al. (2000) provides a different perspective. They are unable to establish a reliable link between subjective norms and intention. Linan and Chen (2009) conducted research with students from Spanish and Taiwanese universities to better understand the relationship between subjective norm and intention using structural equation modelling, however they were unable to link the subjective norm to the intention. These opposing findings pique interest in further research in this area. As a result, the present research looks at the connection between subjective norm and intention.

In a theoretical work, Elmuti et al. (2012) offer another intriguing suggestion regarding the link between Perceived Behavioural Control and intention and behaviour. They claim that

entrepreneurial self-efficacy is directly linked to the process of starting a firm. Specifically, the connection between self-efficacy and intention may be responsible for increased entrepreneurship intention (Wilson et al., 2007; Zhao et al., 2005). While, Maula et al. (2005) found that entrepreneurial self-efficacy influences future initiatives. Benzing et al. (2009), on the other hand, were unable to establish statistical support for the link between self-efficacy and entrepreneurial intentions.

In addition, many researchers agree that alertness is a mindset based on a variety of abilities and processes, including prior knowledge, pattern recognition competencies, and cognition (Ardichvili 2003). Whereas, Opportunity perception is a cognitive phenomenon that categorizes a person's decision-making process as an entrepreneur (Krueger and Dickson 1994). This cognitive perspective has been identified as a crucial element associated with a person's intention to create a business by the Global Entrepreneurship Monitor (GEM) (Kelley et al.2013). As well, researchers agree that the higher a person's degree of attentiveness is, the more likely the opportunity will be identified even if they are not actively observed or searched for (George, Parida, & Lahti, 2016). In this way, being alert to opportunities is a fundamental and critical component of the entrepreneurial behaviour. On the other hand, according to Carsrud et al. (2007), understanding entrepreneurial intentions requires a theoretical framework that includes opportunity perception (Elfving, 2009).

4.1 Hypotheses

The research opportunities are promising, as mentioned in the literature review of impact studies. The examined studies paint a mixed picture, with the majority finding a favourable impact and a couple indicating mixed or negative results from entrepreneurship education. Therefore, G. Nabi, F. Lián, A. Fayolle, N. Krueger, and A. Walmsley (2017) propose for further research into various forms of entrepreneurship education. The influence of voluntary training entrepreneurship education programs on university-level participants is of particular research interest, since students are on the point of determining whether they want to pursue a career as a salaried employee or become entrepreneurs after graduation. The influence of voluntary training entrepreneurship education programs on university-level participants is of particular research interest, since students are on the point of determining whether they want to pursue a career as a salaried employee or become entrepreneurs after graduation. The hypotheses will be briefly discussed, and figures will provide a visualisation of the conceptual relationships that will be investigated in our dissertation study:

Research Question : *What impact does entrepreneurship education and training have on entrepreneurial intention and its antecedents?*

The proposed conceptual model, which is based on the theory of planned behaviour model and its variables: entrepreneurial intentions, perceived attitudes toward entrepreneurial behaviour, subjective norms, and perceived self-efficacy, is used to assess the impact of an entrepreneurship education program in this dissertation. with the added variable of perceived opportunity as a predictor. The sample consists of university students who voluntarily chose to participate in an entrepreneurship education training program that included a variety of coherent entrepreneurship courses as well as other types of entrepreneurship education activities.

Accordingly, entrepreneurship education should have a positive impact on the theory of planned behaviour constructs, although to a significant level. hence it is worth stating that:

The entrepreneurship education and training will significantly influence the four variables(perceived attitudes toward entrepreneurial behaviour; perceived self-efficacy; perceived opportunity; subjective norms).

- The relationship between entrepreneurship education and perceived attitudes toward entrepreneurial behaviour

The term "attitude" relates to a person's subjective feelings about stimuli objects(Ajzen, 2011). When a person is involved in a given behaviour and is impacted by psychological perception, attitude results from negative or positive appraisal (Prabandari & Sholihah, 2015). Entrepreneurship education aims to provide students with entrepreneurial mindsets, competencies, and abilities (Abiah et al., 2017). There is a relation between entrepreneurship education and attitude toward entrepreneurship, according to previous studies (Mwatsika & Sankhulani, 2016). Therefore, attitude is significant in increasing entrepreneurial intention (Potishuk & Kratzer, 2017).

Students are exposed to the real entrepreneurial environment through entrepreneurship education and training. In their university, they perform and participate in entrepreneur activities. Students' knowledge, attitude, passion, integrity, and determination will all improve significantly by practicing entrepreneurial abilities (Byabashaija and Katono, 2011; Alharbi et al., 2018; Entrialgo & Iglesias, 2016)., on the other hand, stated that more research

into the relationship between entrepreneurial education and attitude is needed. On the basis of the suggestion It was proposed that the following hypothesis be tested:

H1.1: There is a positive relationship between entrepreneurship education and attitude.

- The relationship between entrepreneurship education and subjective-norm

Entrepreneurship intention is a desire of an individual to start a new business. Nevertheless, it needs support from people such as family or friends named subjective-norm to start it, which can be developed through entrepreneur education awareness (Utami,2017). As well, entrepreneurship education forms entrepreneurial behaviour and has been an essential factor for entrepreneurship development over the last decade (Bae et al., 2014). Entrepreneurship education able to enrich the proper psychological disposition includes subjective norms that produce an impact on entrepreneurial behaviour Takawira Munyaradzi Ndofirepi, 2020; Entrialgo & Iglesias, 2016; Karimi et al., 2016a). Thus and Based on the suggestion ,the following hypothesis was proposed:

H2: There is a positive relationship between entrepreneurship education and subjective-norm

- The relationship between entrepreneurship education and perceived self-efficacy

Entrepreneurship education is a critical aspect of the development of successful businesses. Entrepreneurship education can inspire students to start a new business by allowing them to take advantage of possibilities and risks (Utami, 2017). Furthermore, via a learning process that develops taught values, skills, behaviour, and motivation to overcome barriers and achieve success, entrepreneurship education can boost individual self-efficacy (Alharbi et al., 2018). Entrepreneurship education may also have an impact on an individual's interpersonal or personal characteristics, such as self-esteem, self-efficacy, and a desire to achieve success (Izquierdo and Buelens, 2011). According to (Wilson et al., 2007; Maritz & Brown, 2013;Hoang et al., 2020) entrepreneurship education and self-efficacy have a good association. On the basis of the suggestion It was proposed that the following hypothesis be tested:

H1.3: There is a positive relationship between entrepreneurship education and perceived self-efficacy

Shane and Venkataraman (2000) believe that opportunity perception is such an important component of entrepreneurship that the research framework should be centred on it. They claim that while opportunities are objective in and of themselves, recognizing them is a subjective process (Shane & Venkataraman, 2000; Shane, 2003; Eckhardt & Shane, 2003). According to Farashah, 2013, entrepreneurship education and training increases attitudes toward entrepreneurship by reducing fear of failure and strengthening perceptions of opportunity in the environment, hence improving perceived desirability of entrepreneurship. (Karimi et al., 2016a, Wei et al., 2019, Baručić & Umihanić, 2016, Farashah, 2013) state that entrepreneurship education and perceived opportunity have a good association. Thus, the following hypothesis was developed :

H1.4 : There is a positive relationship between entrepreneurship education and training and perceived opportunity.

The planned behaviour theory serves as the theoretical underpinning for this doctoral study. As a result, the theory's application to this dataset is examined. Its fundamental claim is that the stronger the intention to undertake a behaviour is, the more favourable attitudes regarding the behaviour, subjective norm, and perceived behavioural control are (Ajzen, 1991). Although Ajzen (1991) emphasizes that in some contexts only the attitudinal elements of the theory, such as ATB and PBC, may be appropriate but do not sufficiently explain intention, his relationship is presumed to be applicable for this study as well. Kruger et al. (2000), for example, were unable to find out the association between subjective norms and entrepreneurial intention in their study.

.Researchers have empirically applied the TPB model to students' Entrepreneurial intention and confirmed the model's predictions regarding the effects of attitude toward entrepreneurship, subjective norms, and perceived self-efficacy on their intentions (e.g., Engle et al. 2010; Linan and Chen 2009; Iakovleva, Kolvereid, and Stephan 2011). The relationships of the theory of planned behaviour are examined and applied to this study in the same way that Souitaris et al. (2007) did

H2.1: Perceived attitude toward entrepreneurship has a significant impact on the entrepreneurial intention of university students

H2.2: Subjective norms has a significant impact on the entrepreneurial intention of university students

The perception in one's ability to accomplish entrepreneurial tasks and activities is referred to as entrepreneurial Perceived self-efficacy (PSE) (Chen et al., 1998; De Noble et al., 1999; McGee et al., 2009). Several research have confirmed the positive link between PSE and entrepreneurial intention (Chen et al., 1998; Lián and Chen, 2009; McGee et al., 2009; Schlaegel and Koenig, 2014; F. Wilson et al., 2007; Zhao et al., 2005). (Schlaegel and Koenig, 2014). Recent research also suggests that the Perceived self-efficacy -> Entrepreneurial Intention relationship is less than originally assumed, or perhaps non-existent in some cases (Bullough et al., 2014; Fitzsimmons and Douglas, 2011; Hsu et al., 2017b; Kickul et al., 2009; Lee et al., 2011; Piperopoulos and Dimov, 2015; Shinnar et al., 2014).

H2.3: Perceived Self-efficacy has a significant impact on the entrepreneurial intention of university students

The ability to identify a good idea and turn it into a business concept (or a significant improvement of an existing venture) that provides value to the customer or society while generating revenue for the entrepreneur has been termed as perceived opportunity or recognition (Lumpkin and Lichtenstein 2005). Identification of opportunities has long been seen as an important phase in the entrepreneurial process (Ozgen and Baron 2007). In fact, there is no entrepreneurship without identifying business opportunities (Short et al. 2010). Therefore, the perception of opportunity has become a required factor of entrepreneurial studies, and there has been a lot of interest in understanding the elements, processes, and dynamics that support it (Gregoire, Shepherd, and Lambert 2010). Hence, the following hypothesis has been developed:

H2.4: Perceived opportunity has a significant impact on the entrepreneurial intention of university students

The TPB's model was used to investigate the role of entrepreneurship education and training for a developing country, particularly in Algeria. In this vein, researchers such as Luthje and Franke (2003), Fayolle and Gailly (2005), Fayolle et al. (2006), Souitaris et al. (2007) and Johansen and Schanke (2012) have empirically assessed entrepreneurship education and training in order to find out ways to enhance the intention of individuals. While in line with what was discussed above the following hypotheses stand to give answers to the main research question.

H3.1 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention through Perceived attitude toward entrepreneurship

H3.2 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention through Perceived Self-efficacy

H3.3 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention through Subjective norms

H3.4 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention through Perceived opportunity

H4 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention

4.2 Conclusion

Since most previous research focused on the relationship between personal and environmental factors in general, the most important findings of previous studies about the relationship between study variables in relation to the relationship of education and entrepreneurial training and entrepreneurial intention were reviewed in this chapter. A comparison was done between previous entrepreneurial intention models in an attempt by us to construct a model for the relationship between education and entrepreneurial training and entrepreneurial intention. We develop the model of study on the base of the theory of planned behaviour model regarding its capacity to predict entrepreneurial intention and detailed differentiation of its constituent factors, as well as its widespread use in prior studies, particularly to predict the entrepreneurial intention of university students. Then, in addition to the factor included in the study model, we analysed previous studies on the impact of entrepreneurial education and training on students' entrepreneurial intention and the planned behaviour theory model to reveal the overall developments that occurred on the relationships between the factors of this study. The concept of the model In light of this, we created direct hypotheses relating to the variables of the developed model, as well as indirect hypotheses. Using the study's factors, we were able to determine the relationship between education and entrepreneurial training and entrepreneurial intention, and we noticed that previous studies had confirmed the direct relationship between the factors (e.i perceived attitude, subjective norms, perceived self-efficacy and perceived opportunity). and entrepreneurial intention, as well as the indirect relationship through those variables.

Finally, following a review of the most important points made, study hypotheses were developed, and a study model is constructed to investigate the relationship between entrepreneurship education and entrepreneurial intention. The study methodology will be formulated in the following chapter as well the study model will then be tested.

**CHAPTER III: Study methodology,
hypotheses results and
discussion**

1 Introduction

The purpose of this study is to see how entrepreneurial education affects university students' entrepreneurial intention. We attempt to review an integrated research methodology that fits with the study's hypotheses in order to address the problematic stated in this chapter, and for this, we try to come up with the right methodology for the study through components in this chapter. The preliminary assessment was conducted via Smart PLS 3.0 software. Based on Hair et al. (2011) suggestion, the research analysis was conducted by assessing the measurement model followed by the evaluation of the structural model. Besides that, the structural model was further assessed through the reliability and validity test of the instruments. Furthermore, convergent and discriminant were tested by looking at the weight of the loading of each item to generate the latent variable scores. Finally the measurement test was performed to validate the direct and indirect hypotheses sets between exogenous and endogenous variables.

2 Research Context

In the majority of affluent countries around the world, significant progress has been made in entrepreneurial education and learning over the last two decades (Matlay & Carey, 2006). Since the case of the Algerian university, the government's impulsion to emphasize entrepreneurship and innovation within the institution was the integration of entrepreneurship education. This trend might be interpreted as a reflection of government perceptions of the positive impact that private enterprise can have on a country's socioeconomic and political systems (Matlay, 2008). Public policymakers have recognized the importance of entrepreneurship as a predictor of economic progress, and policies should rely more on entrepreneurship in education to encourage entrepreneurial activity (Matlay, 2008). The European Commission supports this type of help, stating that the major goal of entrepreneurship education is to develop entrepreneurial skills and attitudes (European Commission, 2008, p56). Thus, they support the concept of introducing entrepreneurship into academic curricula to a greater extent. On the other hand, many studies have used TBP (Krueger et al., 2000; Lian & Chen, 2009) and entrepreneurial behaviour (Kautonen et al., 2013) to explain the intentions to become an entrepreneur.

2.1 Research Approach

Surveys are the most often used research strategy in quantitative data collection (Ellis & Levy, 2009). For social scientific research, a survey is a common data collection method. The survey strategy is beneficial for gathering relevant data related to the study problematic, as well as for statistical analysis using descriptive and inferential statistics. Whereas, a survey includes a series of questions intended at a representative sample of a population with the objective of determining individual states of opinion, attitudes, or behaviours on particular concerns. In quantitative research, survey strategies are also recommended appropriate methods so they are cost-effective, simple, and useful for efficiently gathering data from large groups of people (Collis & Hussey, 2013). Meanwhile the partial least squares (PLS) analysis was used to evaluate the model's relationships.

This study followed a design structure that included the following five stages:

- 1) creating a survey
- 2) adjusting the study question
- 3) doing a pre-test pilot survey
- 4) data collection
- 5) data analysis

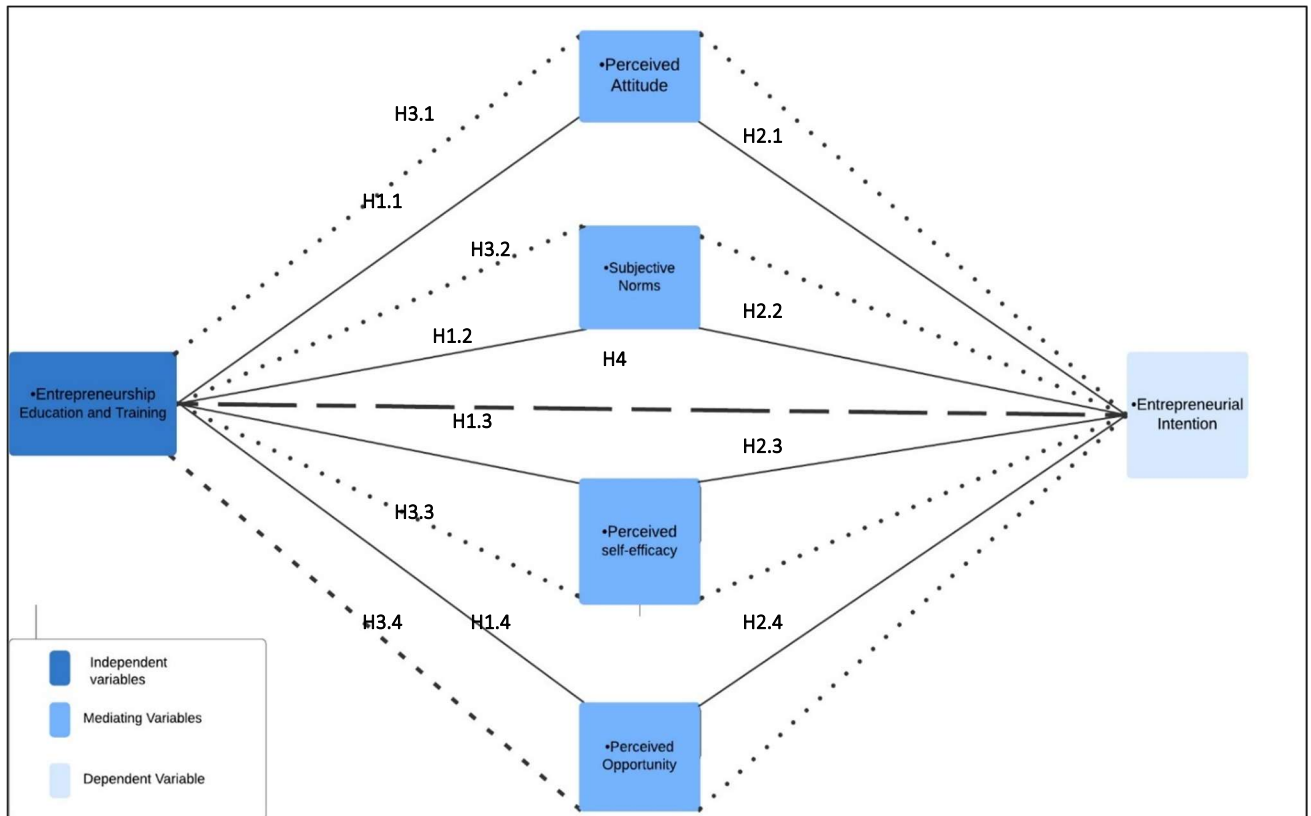
These methods were deemed cost-effective and suited for reaching a significant proportion of individuals. Sampling, data collection, and instrument are the three most important processes in performing the survey, according to Agarwal and Selen (2009).

2.2 Conceptual framework and hypotheses

In the conceptual framework, the impact of entrepreneurship education and training students' intention toward entrepreneurship is illustrated (Figure. 11)., entrepreneurship education and training was sets as independent variables to determine the students' intentions toward entrepreneurship (as dependent variable), while Four independent variables, namely perceived attitude, subjective norms, perceived self-efficacy, and perceived opportunity. These four variables were established to test the possible mediating effect of entrepreneurship education and training on students' intention toward entrepreneurship. A one-group post-test-only design is used to investigate the mediation effect between entrepreneurship education and training as an independent variable and entrepreneurial

intention as a dependent variable, as measured by perceived attitude, subjective norms, perceived self-efficacy, and perceived opportunity. Data is collected from a group of students, with a particular focus on those who have participated in one of entrepreneurship education and training activities. In the aim to assess participants' intention after being exposed to entrepreneurship education and training.

Figure 11: Conceptual Model of study



Source: prepared by the researcher

The following hypotheses have been established:

H1.1: There is a positive relationship between entrepreneurship education and attitude toward entrepreneurship.

H1.2: There is a positive relationship between entrepreneurship education and subjective-norm

H1.3: There is a positive relationship between entrepreneurship education and perceived self-efficacy

H1.4 : There is a positive relationship between entrepreneurship education and training and perceived opportunity.

H2.1: Perceived attitude toward entrepreneurship has a significant impact on the entrepreneurial intention of university students

H2.2: Subjective norms has a significant impact on the entrepreneurial intention of university students

H2.3: Perceived Self-efficacy has a significant impact on the entrepreneurial intention of university students

H2.4: Perceived opportunity has a significant impact on the entrepreneurial intention of university students

H3.1 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention through Perceived attitude toward entrepreneurship

H3.2 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention through Perceived Self-efficacy

H3.3 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention through Subjective norms

H3.4 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention through Perceived opportunity

H4 entrepreneurship education and training has a significant and positive impact on entrepreneurial intention

3 Sampling and Strategies

To acquire evidence to support the theoretical assumptions, we used a positivist research philosophy and a quantitative approach. A self-administered survey was used to collect quantitative data. Where the process of selecting a group of individuals from a population to study in order to reflect the entire society is known as sampling (McDonald et al., 2015). There are two types of sampling techniques: probability and non-probability (Saunders, Lewis & Thornhill, 2016).

The term "probabilistic sampling" refers to processes that employ some type of random selection of participants in order to achieve unbiased accuracy. For that reason , the samples

must reflect the target population's characteristics. Furthermore, probability sampling is the most often utilized strategy for obtaining reliable and accurate results (Brick, 2014).

Four conditions must be met by probabilistic sampling processes (Chochran, 1977, p.9):

- The technique should be able to select from a set of distinct samples that can be defined.
- The chance of selecting each available sample is known.
- Samples are chosen using a random method, with each sample having the same chance of being chosen.
- For whichever sample from that population, the procedure for getting the result yields a single result.

3.1 The nature and size of the study sample

Simple random, stratified random, systematic random, multi-stage, and cluster sampling are the five strategies for probability sampling (Saunders et al., 2016). The convenience sample method was utilized in this study, which is useful to select respondents and applying a stratified random procedure (Tashakkori & Creswell, 2007; Teddlie and Yu, 2007).

3.2 Questionnaire Development

To acquire evidence to support the theoretical assumptions, we used a positivist research mindset and a quantitative approach. A self-administered survey was used to collect quantitative data. The target population is students at the University of Tlemcen (from four faculties) and two other higher education institutions (Higher School of Management & in the same city that offer entrepreneurship courses at the undergraduate and master's levels in all disciplines, including engineering, science and management & administration. Since the study only comprises Higher Education institutions in Tlemcen, we anticipate that courses and their contents will converge in some way. A questionnaire with 39 questions was disseminated among the sampled units of the population for this study during the period of 20th May until 10th July 2021. The Algerian Ministry of Higher Education encourages higher education institutions to offer entrepreneurship courses to students in various disciplines, particularly business schools. Through personal contacts, we addressed higher education institutions that provide entrepreneurial courses. A convenient sampling approach was used to select the respondents at random. Prior to the survey, all participants were given the opportunity to give their informed consent, and the answers were preserved confidential and

anonymous. We used the Entrepreneurial Intention Questionnaire developed by (Botsaris & Vamvaka, 2016; Carsrud et al., 2017; Krueger, 2009; Lián & Chen, 2009; Chen et al. 1998; Bagozzi et al., 2003; Van Gelderen, et al., 2015) as well as the Entrepreneurship Education and Training questionnaire developed by (Cui et al., 2019; Iwu, Chux Ger (age, gender, course, father occupation, etc.)). In the questionnaire, a question was included to ask if the individual has taken any entrepreneurship courses or participated in any other entrepreneurship training programs. The responses from the participants were gathered using a convenience sample method.

A total of 380 completed questionnaires were collected in fact, with 340 of them being viable. The overall response rate was 181. Females made up 53.2%% of the responders, while males made up 46.8 %. Almost 66 % of respondents were between the ages of 21 and 25. In terms of the entrepreneurship course or other Entrepreneurship training programs recommended in the survey, 62 % of students in our sample have attended it, while 38 % have not.

3.1 Questionnaire and construct measurements

We used for this study Entrepreneurship Intention as dependent variable and four independent variables as well as Entrepreneurship education as mediating variable. For the dependent variables, four indices were chosen (attitude, subjective norm, perceived self-efficacy, and perceived opportunity). The original set of questionnaire items was built on known scales and Ajzen's (1991; 2002) suggestions on planned behaviour theory. These were used to put together a first collection of things. A pilot research with 40 participants was undertaken to test the items. Individuals are the unit of analysis in this study (i.e. student). Individuals, groups, and organizations are only a handful of the categories that Saunders (2011) divides his unit of analysis into. When analysing the impact of a treatment on individual behaviour, many educational and behavioural experiments use persons as the statistical unit of analysis.

The questionnaire is divided into seven sections. **Section (A)** was focused on demographic profile such as name, location, age, and so on. The purpose of **Section (B)** of the questionnaire was to see if participants had any significant exposure to entrepreneurship courses, and if they did, how they evaluated their experience. The goal was also to see how current entrepreneurship education affected their willingness to become an entrepreneur. The questionnaire, as well as the items, are shown in Appendix 1.

Section (C) regarding the Perceived Attitude include a set of items. According to which was proposed by Lián & Chen, 2009; Shook & Bratianu, 2010 to assess people's attitudes on becoming entrepreneurs or starting their own businesses. Other researchers, such as Mueller, afterwards used it (2011).

Section (D), Perceived Self-efficacy should assess people's belief in their ability to do the task at hand (i.e. the intention to become entrepreneur). Ajzen suggests using items that relate to the perceived difficulty of accomplishing the behaviour or the possibility that the respondent could perform it for direct measures. The respondent's perception of self-efficacy in executing the behaviour is captured through such items: Ajzen, 2002; Shook & Bratianu, 2010; K Esfandiari, M Sharifi-Tehrani, S Pratt, 2019.

Section (E) Subjective norms was developed according to (Lián & Chen, 2009; Shook & Bratianu, 2010; Kolvereid, 1996)

Section (F) Perceived opportunity as established by (Bateman Cram's, 1993; GEM, 2016; Tsai, Chang, & Peng, 2016)

E-intention in the **Section (G)**: According to Botsaris & Vamvaka, 2016; Carsrud et al., 2017; Krueger, 2009; Lián & Chen, 2009; Chen et al., 1998; Bagozzi et al., 2003; Van Gelderen, et al., 2015, items evaluating entrepreneurial intention were also established following Ajzen's suggestions on how to create a Theory of Planned Behaviour survey. where he proposes assessing intention by asking respondents to rate how likely they are to try to accomplish the behaviour in issue (Ajzen 2002).

As a data collection function, the item uses a Likert scale (Bryman & Bell, 2007). The option that best performing the respondent's position was chosen. A five-point Likert scale was used in this study. It's a form of additive scale that corresponds to a measurement level on an ordinal scale. It consists of a sequence of statement or items to which the respondent is expected to respond. The item provided to the subject reflects the property that the researcher is interested in assessing, and the responses are asked in terms of the subject's level of agreement or disagreement with a specific assertion. Typically, five response alternatives are employed, with each category assigned a numerical value that leads to a total score based on the scores of all items. This final score represents where the subject's reaction stands on the scale.

Following are the procedures to creating a Likert scale: 1) to understand the attitude or variable to be measured, 2) to develop items related to the attitude or variable to be measured, 3) to administrate the scale to a sample of subjects who will act as judges, 4) to attribute the scores to the items according to their high or low position, 5) give total scores to subjects based on the type of response in each question, 6) conduct validation and reliability analysis, 7) construct the final scale from the selected items, and 8) administer the final scale to the population in whom the instrument was established.

It is essential to determine what data to collect before designing any measurement instrument (Antwi & Hamza, 2015). To put it another way, the aspect or variable to be measured must be specified precisely. It's worth noting that in any study, it's critical to be clear about the matter at hand and to guarantee that the variables are connected. The research objectives must be clearly stated, and the research questions must justify the investigation. Each item is a judgment or a phrase with which the respondent must indicate whether they agree or disagree. Although five or more selections are recommended for each item, i.e. 1 - Strongly agree, 2 –agree, 3 –Neither agree nor disagree,4- Disagree and 5- Strongly Disagree

3.2 Data Analysis

At the first place, we checked the measurement quality of our constructs through various reliability and validity tests. At the first place, reliability of the construct was checked by performing the most commonly used tests of instrument reliability, namely composite reliability, since in the context of PLS-SEM, composite reliability is considered a more suitable criterion of reliability (Hair Jr et al., 2021). For testing the validity of instrument, we used combined loading and cross-loading method. We used average variance extracted (AVE) for convergent validity and square roots of AVE for discriminant validity. We checked the possibility of collinearity by variance inflation factor (VIF).

3.2.1 The reasons for Using PLS

The following are some of the researchers' justifications for using PLS to assess structural equation models (Urbach & Ahleman, 2010):

In comparison to other techniques, PLS imposes fewer demands on sample size.

Complex structural equation models with a high number of constructs can be solved using PLS.

Normal-distributed input data is not required by PLS.

Both reflecting and formative structures can be handled by PLS.

PLS is better for theory building than testing.

PLS is very beneficial when it comes to forecasting.

PLS is capable of dealing with both first and second order.

3.2.2 Reliability and Validity

In a quantitative study, validity is the extent to which an instrument accurately evaluates the properties of a concept (LoBiondo-Wood & Haber, 2014). Content validity, construct validity, and criterion validity are the three categories of validity (Heale & Twycross, 2015). The measure's content validity refers to how well it accurately measures the concept (Sekaran & Bougie, 2014). In other words, validity is determined by how thoroughly a concept's elements and metrics have been defined. The "face validity" refers to a form of the "content validity."

The construct validity of a proposed measurement relates to how closely the results match the theories that the test is based on (Sekaran & Bougie, 2014).

The validity of any other instrument that assesses the same variable is referred to as criterion validity (Heale & Twycross, 2015).

This validity, according to Heale and Twycross (2015), measures phenomena in three ways:

- Convergent validity indicates that an instrument's performance is substantially correlated with that of other instruments that measure similar variables.
- Divergent validity indicates that an instrument's performance is unrelated to those of other instruments that measure different variables.
- Predictive validity refers to the instrument's ability to predict future criteria with a high degree of accuracy. A high self-efficacy score relating to doing a task, for example, should predict the probability of a subject to accomplish the task.

The ability of an instrument to consistently measure the properties of a variable is referred to as reliability (LoBiondo-Wood & Haber, 2014). The term "reliability" refers to the constancy of a measurement (Heale & Twycross, 2015). Individual metrics are likewise subject to the concept of reliability. When a person takes a vocabulary test twice, for example, their scores should be quite similar on both occasions, assuming everything else is identical. Whether this is the case, the test can be rated highly reliable. An assessment evaluating self-esteem should produce the same result if given to the same person twice in a short period of time to be considered reliable. Since intelligence is supposed to be a constant attribute, IQ testing should not produce varied results over time. Homogeneity or internal consistency, as well as stability and equivalence, are characteristics of reliability (Heale & Twycross, 2015).

3.3 Structural Equation Modelling:

In the field of social science research, structural equation modelling (SEM) is a frequently used multivariate statistical tool (Hair et al., 2010). Using path models, SEM allows a researcher to construct a conceptual model of the interactions between variables (Saga & Kunimoto, 2016). It is a widely used concept that refers to a group of methodologies that include construct analysis, confirmatory factor analysis, path analysis, partial least squares, and so on. The capacity to employ latent variables (constructs) in dependent models is a major strength of SEM (Azar, 2010). It enables users to examine relationships between many latent and observable variables (Saga & Kunimoto, 2016).

The fundamental purpose of SEM is to test the hypothesized correlations between groups of constructs. The primary goal of research is to arrive at definite conclusions that are both reliable and valid (Hair et al., 2010) This goal remains the same, and it becomes much more important when examining latent variables. SEM aids a researcher in justifying his or her research by paying close attention to the structures.

Constructs, often known as latent variables, are fundamental characteristics that cannot be directly quantified. These characteristics, on the other hand, can be quantified using measurable variables. These structures are based on theoretical justification or reasoning, or, to put it another way, they are the foundations of theories. In SEM, a construct is a latent or unobserved variable that can be measured or represented with many variables/items but cannot be measured directly or without errors (Chauhan, 2016). An observed variable, on the other hand, is a measurable item from a target analysis that can be utilized to estimate a measurement of a latent variable (Saga & Kunimoto, 2016). SEM can be used to discover or quantify correlations between observable and latent variables, such as causal or cooccurrence relationships.

3.3.1 Descriptive Analysis

3.3.1.1 Age ,Gender and Civil status

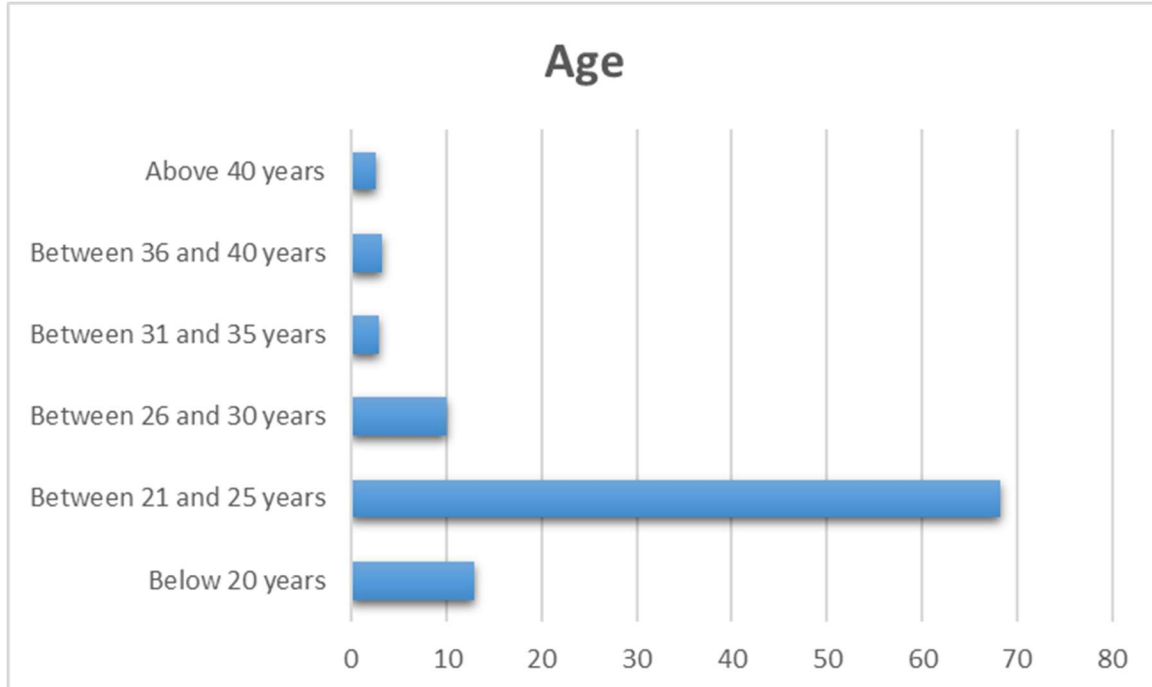
Our study sample is made up of 340 students aged between 18 and 40, of which 46.8% are Men and 53.2% are women. The following figure highlights the distribution of students by age group.

Table 1: Sample demographic data frequency and percentage (Age)

Age	Frequency	Percent %
Below 20 years	44	12,9
Between 21 and 25 years	232	68,2
Between 26 and 30 years	34	10,0
Between 31 and 35 years	10	2,9
Between 36 and 40 years	11	3,2
Above 40 years	9	2,6
Total	340	100

Source: prepared by the researcher based on the outputs of SPSS V25

Figure 12: Sample demographic data frequency and percentages(Age)



Source: prepared by the researcher based on the outputs of SPSS V25

The figure below shows the concentration of students in the age group between 21 and 25 years with a rate of 68.8%, followed by the age group below 20 years with a rate of 12.9%.

Table 2: Sample demographic data frequency and percentages(Gender)

Gender	Frequency	Percent%
Male	159	46,8
Female	181	53,2

Source: prepared by the researcher based on the outputs of SPSS V25

The majority of the students in our sample are between the ages of 21 and 25, and they are distributed equally by gender 68%.

Table 3: Sample demographic data frequency and percentages(Gender)

	Below 20 years	Between 21 and 25 years	Between 26 and 30 years	Between 31 and 35 years	Between 36 and 40 years	Above 40 years
Female	17,10%	68,00%	8,30%	1,70%	2,80%	2,20%
Male	8,20%	68,60%	11,90%	4,40%	3,80%	3,10%

Source: prepared by the researcher based on the outputs of SPSS V25

Civil status

The sample gathered 89.5% of single and around 10% of married students

Table 4: Sample demographic data frequency and percentages (Status)

Status	Frequency	Percent%
Divorced	2	0,6
Married	35	9,9
Single	317	89,5

Source: prepared by the researcher based on the outputs of SPSS V25

In the following table, we present the distribution of students by category of degree.

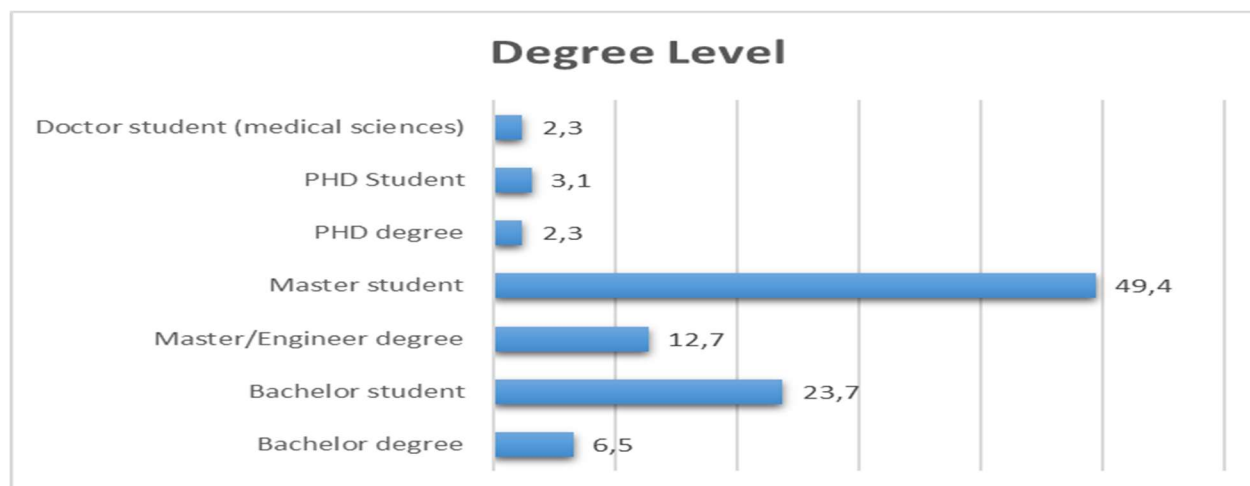
Table 5: Sample demographic data frequency and percentages(Degree Level))

Level	Frequency	Percent %
Bachelor degree	23	6,5
Bachelor student	84	23,7
Master/Engineer degree	45	12,7
Master student	175	49,4
PHD degree	8	2,3
PHD Student	11	3,1
Doctor student (medical sciences)	8	2,3

Source: prepared by the researcher based on the outputs of SPSS V25

Regarding the distribution of students by degree, the most representative percentage is that of students enrolled in master with a rate of 49.4% followed by 23% for those enrolled in license and a significant number which represents more than 12% students who have already a master's degree.

Figure 13: Sample demographic data frequency and percentages(Degree Level)



Source: prepared by the researcher based on the outputs of SPSS V25

Field of Study

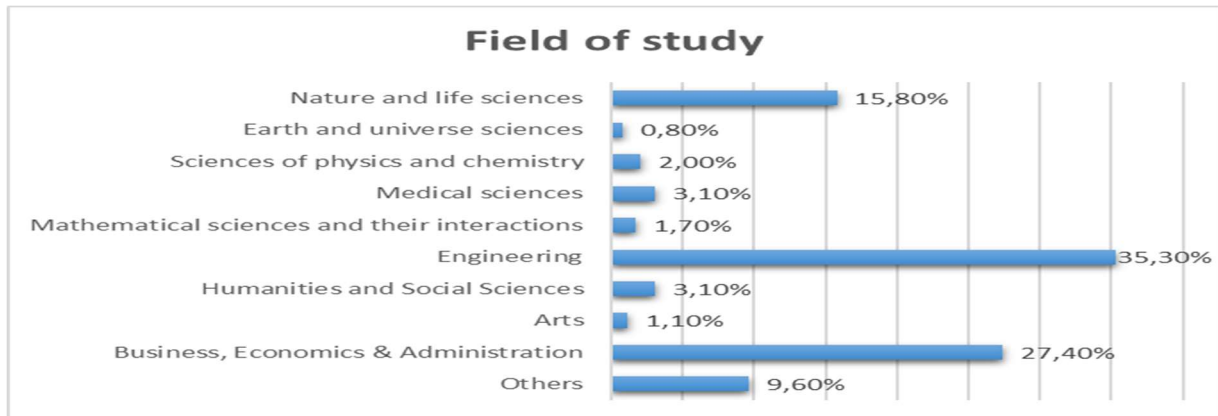
The students in the sample are actually mainly from the field of engineering (35.30%), followed by students from the field of Business, Economics & Administration (27.40%), and finally students from the field of Nature and life sciences (15.80 %).

Table 6: Sample demographic data frequency and percentages(Field of Study)

Field of Study	Frequency	Percent %
Nature and life sciences	56	15,80%
Earth and universe sciences	3	0,80%
Sciences of physics and chemistry	7	2,00%
Medical sciences	11	3,10%
Mathematical sciences and their interactions	6	1,70%
Engineering	125	35,30%
Humanities and Social Sciences	11	3,10%
Arts	4	1,10%
Business, Economics & Administration	97	27,40%
Others	34	9,60%

Source: prepared by the researcher based on the outputs of SPSS V25

Figure 14: Sample demographic data frequency and percentages(Field of Study)



Source: prepared by the researcher based on the outputs of SPSS V25

Student's Job-status

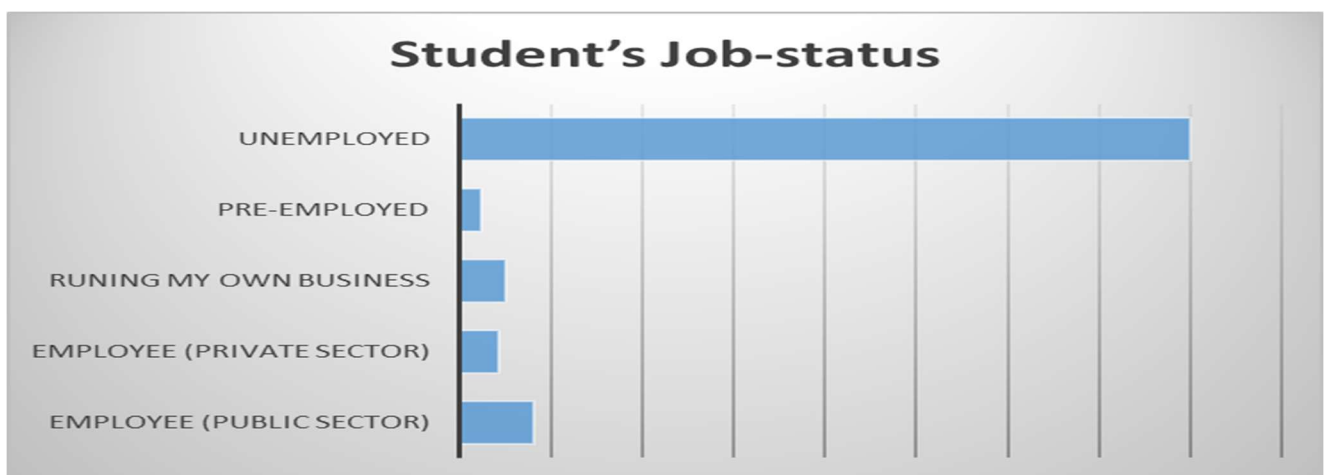
In the table below, we describe the distribution of the sample across the employment status of students.

Table 7: Sample demographic data frequency and percentages(Student's Job-status)

job status	Frequency	Percent%
Employee (Public sector)	28	8,2
Employee (Private sector)	15	4,4
Runing my own business	17	5,0
Pre-Employed	8	2,4
Unemployed	272	80,0

Source: prepared by the researcher based on the outputs of SPSS V25

Figure 15: Sample demographic data frequency and percentages(Student's Job-status)



Source: prepared by the researcher based on the outputs of SPSS V25

The majority of students (80%) say they are unemployed, as shown in the graph above. Following that, 28% of students have stated that they have obtained employment in the private sector, with 5% of students owning their own business.

Father's job status

The fathers' job status of students is described as follow in the table below .

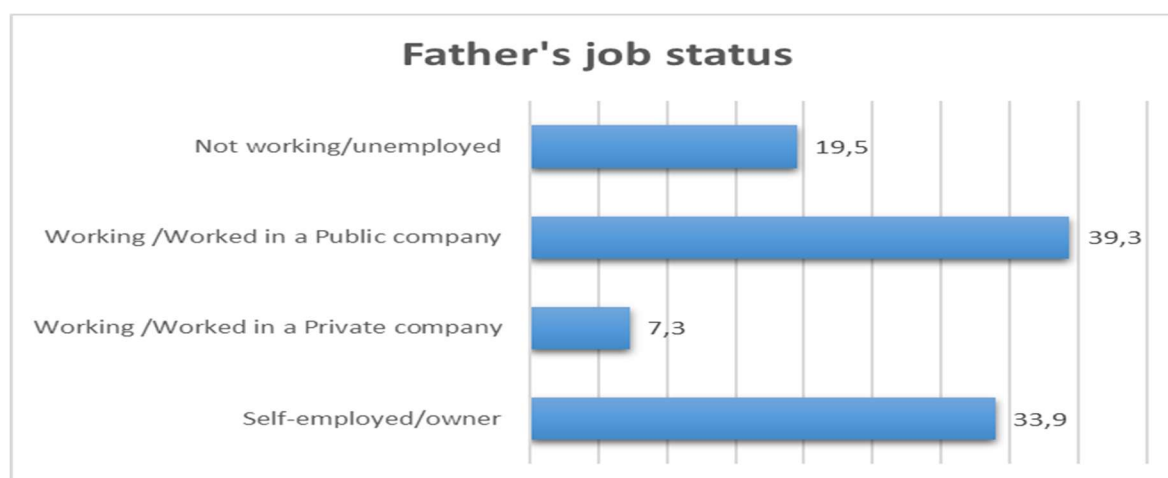
Table 8: Sample demographic data frequency and percentages(Father’s Job-status)

job status	Frequency	Percent%
Self-employed/owner	120	33,9
Working /Worked in a Private company	26	7,3
Working /Worked in a Public company	139	39,3
Not working/unemployed	69	19,5

Source: prepared by the researcher based on the outputs of SPSS V25

The graph below depicts the job status of students' fathers, with a rate of 39.3 % representing students for whom fathers work in the public sector, 33.9 % representing students whose fathers own a business, and 19.5 % indicating students with those who they fathers are unemployed. Finally, only 7% of students report that their fathers works in the private sector.

Figure 16: Sample demographic data frequency and percentages(Father’s Job-status)



Source: prepared by the researcher based on the outputs of SPSS V25

Mother's job status

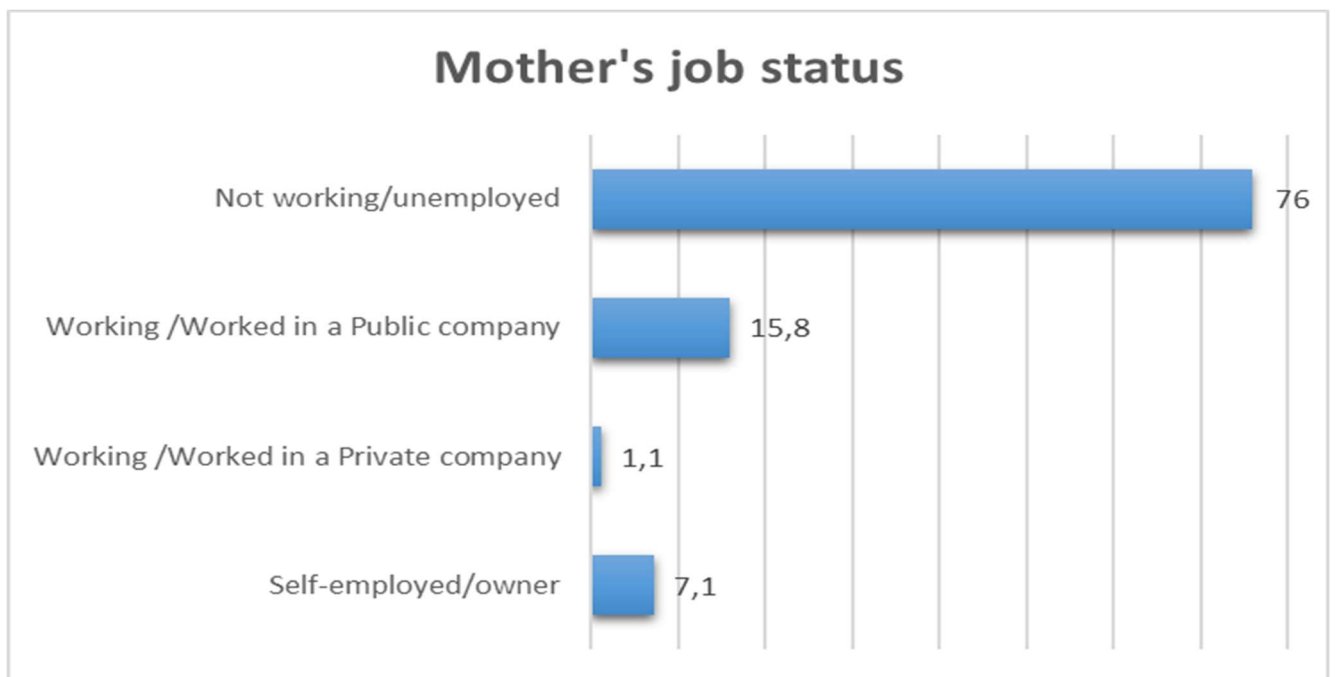
The following table summarizes the job status of students' mothers.

Table 9: Sample demographic data frequency and percentages(Mother's Job-status)

job status	Frequency	Percent%
Self-employed/owner	25	7,1
Working /Worked in a Private company	4	1,1
Working /Worked in a Public company	56	15,8
Not working/unemployed	269	76

Source: prepared by the researcher based on the outputs of SPSS V25

Figure 17: Sample demographic data frequency and percentages(Mother's Job-status)



Source: prepared by the researcher based on the outputs of SPSS V25

The graph above shows the employment status of students' Mothers, with 76 % are unemployed, 15.8% having mothers who work in the public sector, and 7.1% having mothers who own a business Finally, only 7% of students say their mothers work for a private company.

Income

Below we find the declarations of the students regarding their income

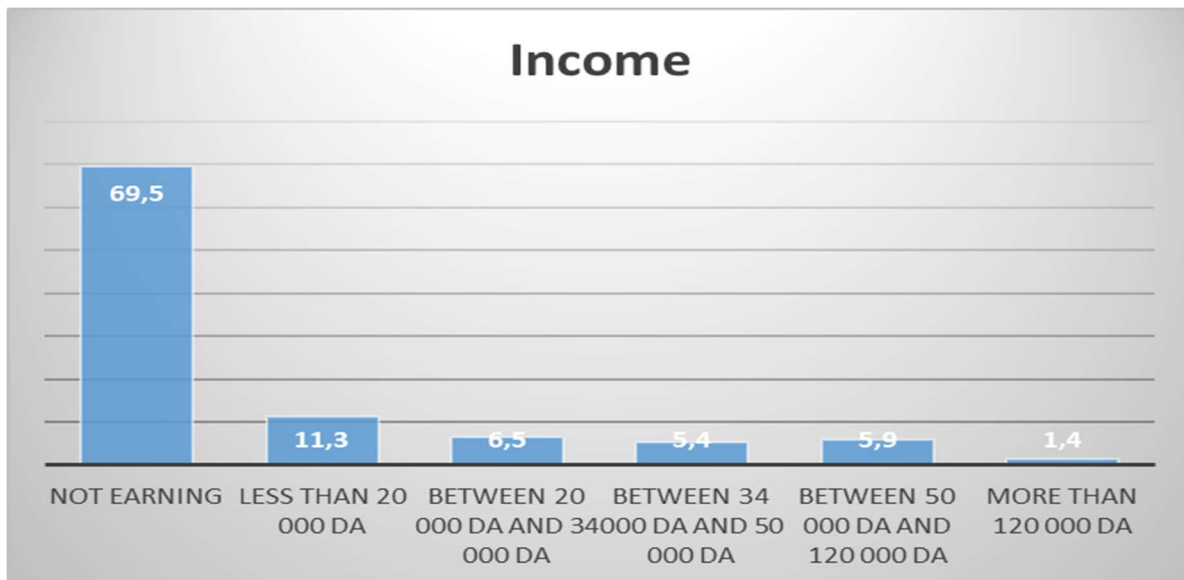
Table 10: Sample demographic data frequency and percentages(Income)

Income	Frequency	Percent%
Earning nothing	246	69,5
Less than 20 000 Da	40	11,3
Between 20 000 DA and 34 000 DA	23	6,5
Between 34 000 DA and 50 000 DA	19	5,4
Between 50 000 DA and 120 000 DA	21	5,9
More than 120 000 DA	5	1,4

Source: prepared by the researcher based on the outputs of SPSS V25

Figure 18:

Figure 18: Sample demographic data frequency and percentages(Income)



Source: prepared by the researcher based on the outputs of SPSS V25

As shown in the histogram above, the majority of students claim to have an income of less than 20 000 Da, which equals of 11.3 %; otherwise, the majority 69.5% claims to have no income.

3.3.1.2 Field of Study * Parent's Job-status Crosstabulation

We cross tabulate distribution of students by their parents' career in the two tables that follow, regarding their field of study.

Table 11: Field of Study * Father's job status Crosstabulation

Field of study	Self-employed/owner	Working /Worked in a Private company	Working /Worked in a Public company	Not working/unemployed
Others	26,70%		46,70%	26,70%
Business, Economics & Administration	35,10%	6,20%	40,20%	18,60%
Arts			25,00%	75,00%
Humanities and Social Sciences	30,00%	20,00%	30,00%	20,00%
Engineering	33,90%	8,50%	44,10%	13,60%
Mathematical sciences and their interactions	50,00%	16,70%	33,30%	
Medical sciences	9,10%	36,40%	45,50%	9,10%
Sciences of physics and chemistry	14,30%	14,30%	28,60%	42,90%
Earth and universe sciences	50,00%		50,00%	
Nature and life sciences	41,80%	1,80%	32,70%	23,60%

Source: prepared by the researcher based on the outputs of SPSS V25

Table 12: Field of Study * Mother's job status Crosstabulation

Field of study	Self-employed/owner	Working /Worked in a Private company	Working /Worked in a Public company	Not working/unemployed
Others	3,30%		10,00%	86,70%
Business, Economics & Administration	8,20%	1,00%	18,60%	72,20%
Arts	25,00%			75,00%
Humanities and Social Sciences			10,00%	90,00%
Engineering	4,20%		13,60%	82,20%
Mathematical sciences and their interactions	16,70%		33,30%	50,00%
Medical sciences	18,20%	9,10%	27,30%	45,50%
Sciences of physics and chemistry	14,30%		14,30%	71,40%
Earth and universe sciences		50,00%	50,00%	
Nature and life sciences	3,60%		18,20%	78,20%

Source: prepared by the researcher based on the outputs of SPSS V25

In terms of the fields of study in which the sample is largely representative, We can reasonably claim that the fathers' job status of students, whether students in business,

engineering, or science field ,are mainly from the public sector, followed by those who run their own businesses.

Entrepreneurship Education and Training Attendance

The proportions of students who participate in entrepreneurial education activities are shown below:

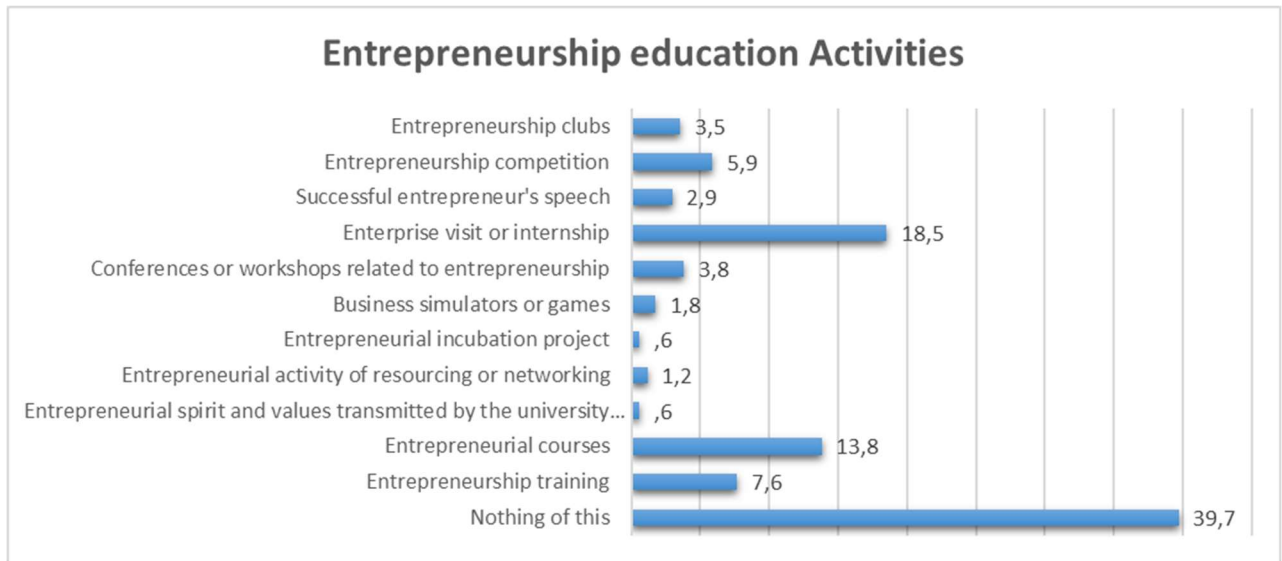
Table 13: Entrepreneurship Education and Training Attendance

Entrepreneurship education Activities	Frequency	Percent%
Entrepreneurship clubs	12	3,5
Entrepreneurship competition	20	5,9
Successful entrepreneur's speech	10	2,9
Enterprise visit or internship	63	18,5
Conferences or workshops related to entrepreneurship	13	3,8
Business simulators or games	6	1,8
Entrepreneurial incubation project	2	,6
Entrepreneurial activity of resourcing or networking	4	1,2
Entrepreneurial spirit and values transmitted by the university or colleges	2	,6
Entrepreneurial courses	47	13,8
Entrepreneurship training	26	7,6
Nothing of this	135	39,7

Source: prepared by the researcher based on the outputs of SPSS V25

The majority of students (39,7%) say they have not participated in any of the listed activities, while the rest are split between Enterprise visit or internship (18,5%) and Entrepreneurial courses (13,8%). Meanwhile the Entrepreneurship training appear with a very low rate of (7,6%).

Figure 19: Entrepreneurship Education and Training Attendance



Source: prepared by the researcher based on the outputs of SPSS V25

In the following table we describe the proportion of students who have participated or never in one of the entrepreneurial education activities mentioned in the list and that according to their field of study.

Table 14: Field of Study * Entrepreneurship Education and Training Attendance
Crosstabulation

Field of Study	Nature and life sciences	Engineering	Business, Economics & Administration
Entrepreneurship training	19,20%	34,60%	30,80%
Entrepreneurial courses	10,60%	46,80%	31,90%
Entrepreneurial spirit and values transmitted by the university or colleges		50,00%	
Entrepreneurial activity of resourcing or networking		25,00%	25,00%
Entrepreneurial incubation project	50,00%		50,00%
Business simulators or games		83,30%	
Conferences or workshops related to entrepreneurship	7,70%	23,10%	15,40%
Enterprise visit or internship	14,30%	38,10%	25,40%
Successful entrepreneur's speech	20,00%	40,00%	10,00%

Entrepreneurship competition	25,00%	40,00%	20,00%
Entrepreneurship clubs	33,30%	41,70%	16,70%
Nothing of this	17,00%	26,70%	34,80%

Source: prepared by the researcher based on the outputs of SPSS V25

Students enrolled in engineering fields have the highest proportion of attendance education activities 46 %, followed by Business and Economics fields with a rate of 31.90 %, while the distribution of entrepreneurial training activity is 34,60 % for engineering, 19,20 % for Nature and Life Sciences, and finally 30,80 % for Business and Economics. The indicators of

3.3.1.3 Activities related to entrepreneurship education and training in terms of gender distribution attendance

Participation in entrepreneurship education activities based on gender are displayed in the table below.

Table 15: Entrepreneurship Education and Training Attendance* Gender Crosstabulation

Entrepreneurship education Activities	Male	Female
Nothing of this	43,00%	57,00%
Entrepreneurship training	38,50%	61,50%
Entrepreneurial courses	53,20%	46,80%
Entrepreneurial spirit and values transmitted by the university	50,00%	50,00%
Entrepreneurial activity of resourcing or networking	25,00%	75,00%
Entrepreneurial incubation project	50,00%	50,00%
Business simulators or games	83,30%	16,70%
Conferences or workshops related to entrepreneurship	61,50%	38,50%
Enterprise visit or internship	49,20%	50,80%
Successful entrepreneur's speech	30,00%	70,00%
Entrepreneurship competition	50,00%	50,00%
Entrepreneurship clubs	50,00%	50,00%

. **Source:** prepared by the researcher based on the outputs of SPSS V25

Among female students, 61 % pursue entrepreneurship training, compared to 38 % of male students. While this form of training is considered an elective course, it represents a greater inclination for ladies to start businesses than boys.

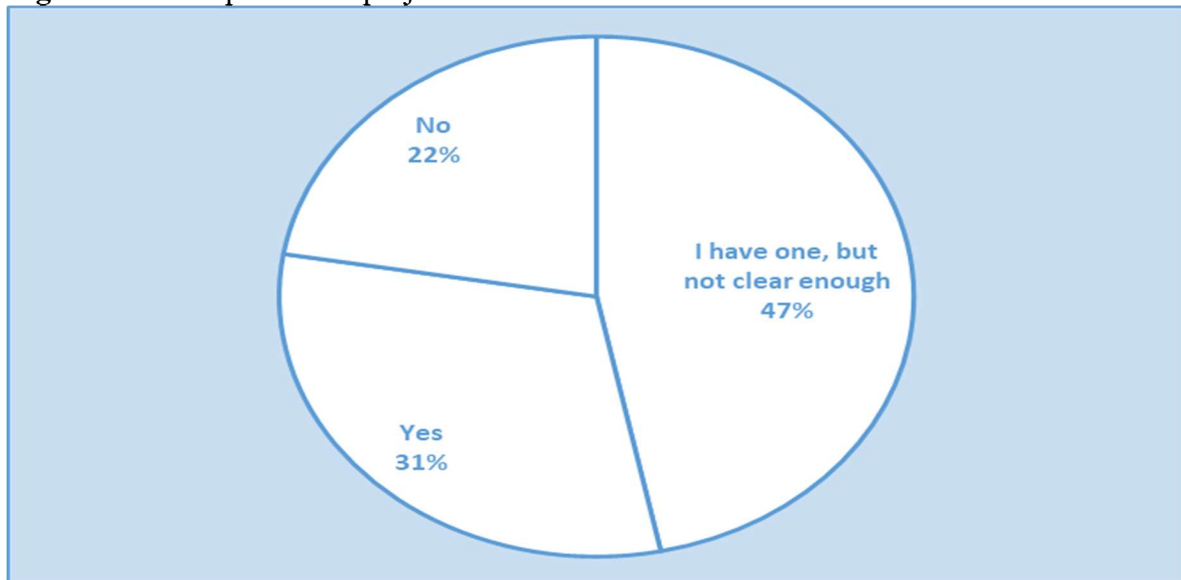
Table 16: Entrepreneurial project Idea

Statement	Frequency	Percent%
I have one, but not clear enough	159	46,8
Yes	105	30,9
No	76	22,4

Source: prepared by the researcher based on the outputs of SPSS V25

In table16 above we present responses of students after have asked them the following question to see if they have a concrete idea about their future business project and to gauge their entrepreneurial inclination (Do you have a concrete and clear idea for your future entrepreneurial project?)

Figure 20: Entrepreneurial project Idea



Source: prepared by the researcher based on the outputs of SPSS V25

The table below shows the gender distribution of students in terms of project idea existence. Whereas 48 % of women say they have a clear idea about their future project, 53.9 % of men say they do not. Men tend to have a clear idea than women, with 51 % having a clear idea and 44 % having a project idea but not clearly enough.

Table 17: Entrepreneurial project Idea * Gender Crosstabulation

Statement	Male	Female
No	46,1%	53,9%
Yes	51,4%	48,6%
I have one, but not clear enough	44,0%	56,0%

Source: prepared by the researcher based on the outputs of SPSS V25

As describe in the table below the distribution of students in terms of the existence of project ideas by field of study . there is more than 38% of students in the field of engineering who are state that they have no idea about their future project ,33.3% have one but not clear enough and only 33.3% with a clear idea. on the other hand concerning the Business, Economics field 27.6% of them have not ,while just 28.6%% have a clear idea one , .

Table 18: Field of Study * Entrepreneurial project Idea Crosstabulation

Statement	Nature and life sciences	Engineering	Business, Economics & Administration
No	11,8%	38,2%	27,6%
Yes	21,0%	33,3%	28,6%
I have one, but not clear enough	15,1%	34,0%	28,9%

Source: prepared by the researcher based on the outputs of SPSS V25

3.3.1.4 The analyse of intention determination according to the gender criterion and field of study

The table that follows depicts the dispersion of student responses to various items under the assessment of entrepreneurial intent based on gender.

Table 19: Entrepreneurial Intention's Items * Gender Crosstabulation

Gender	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
One of my professional goals is to become an entrepreneur					
Female	5,50%	8,80%	14,90%	30,40%	40,30%
Male	6,30%	3,10%	13,20%	37,10%	40,30%
I will make every effort to start and run my own or co-owned firm					
Female	4,40%	6,60%	14,90%	39,80%	34,30%
Male	3,80%	4,40%	18,90%	37,70%	35,20%
How likely are you to become an entrepreneur?					
Female	7,20%	7,20%	17,70%	38,70%	29,30%
Male	3,80%	6,30%	22,60%	43,40%	23,90%
I want to start my own or co-owned business sometime in the future					
Female	7,20%	4,40%	19,30%	37,00%	32,00%
Male	2,50%	3,10%	18,20%	45,30%	30,80%
My intention is to be employed by others rather than being self-employed					
Female	31,50%	20,40%	23,20%	14,40%	10,50%
Male	37,70%	17,60%	24,50%	11,90%	8,20%
I am determined to create my own or co-owned business in the near future.					
Female	4,40%	8,30%	21,50%	33,70%	32,00%
Male	1,90%	5,70%	20,10%	44,70%	27,70%

I have very seriously thought of starting my own business.					
Female	3,90%	8,30%	26,00%	28,70%	33,10%
Male	5,70%	6,30%	22,60%	33,30%	32,10%
In the next three years, I am very likely to start my own or co-owned business.					
Female	7,20%	9,40%	29,80%	26,50%	27,10%
Male	5,70%	9,40%	25,80%	31,40%	27,70%

Source: prepared by the researcher based on the outputs of SPSS V25

In the table below, we compare student statements on the groups of questions that determine their entrepreneurial intention based on their field of study.

Table 20: Entrepreneurial Intention's Items * Gender Crosstabulation

Field of study	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
One of my professional goals is to become an entrepreneur.					
Business, Economics & Administration	11,30%	4,10%	11,30%	28,90%	44,30%
Engineering	2,50%	6,80%	14,40%	33,90%	42,40%
Nature and life sciences	1,80%	12,70%	16,40%	32,70%	36,40%
I will make every effort to start and run my own or co-owned firm.					
Business, Economics & Administration	6,20%	4,10%	16,50%	38,10%	35,10%
Engineering	1,70%	4,20%	15,30%	41,50%	37,30%
Nature and life sciences	5,50%	9,10%	20,00%	43,60%	21,80%
How likely are you to become an entrepreneur?					
Business, Economics & Administration	7,20%	8,20%	15,50%	43,30%	25,80%
Engineering	2,50%	6,80%	22,90%	41,50%	26,30%
Nature and life sciences	1,80%	7,30%	18,20%	41,80%	30,90%
I want to start my own or co-owned business sometime in the future.					
Business, Economics & Administration	3,10%	4,10%	25,80%	38,10%	28,90%
Engineering	2,50%	2,50%	13,60%	44,90%	36,40%
Nature and life sciences	7,30%	9,10%	14,50%	36,40%	32,70%
My intention is to be employed by others rather than being self-employed.					
Business, Economics & Administration	39,20%	23,70%	24,70%	7,20%	5,20%
Engineering	36,40%	18,60%	24,60%	11,00%	9,30%
Nature and life sciences	36,40%	14,50%	20,00%	16,40%	12,70%
I am determined to create my own or co-owned business in the near future.					
Business, Economics & Administration	5,20%	8,20%	22,70%	33,00%	30,90%
Engineering	2,50%	4,20%	15,30%	46,60%	31,40%
Nature and life sciences		14,50%	29,10%	32,70%	23,60%
I have very seriously thought of starting a firm					
Business, Economics & Administration	5,20%	14,40%	20,60%	27,80%	32,00%
Engineering	5,10%	4,20%	26,30%	34,70%	29,70%
Nature and life sciences	3,60%	3,60%	29,10%	25,50%	38,20%

The probability of starting my own or co-owned business is high in the next 3 years.					
Business, Economics & Administration	8,20%	12,40%	32,00%	19,60%	27,80%
Engineering	5,10%	11,00%	26,30%	34,70%	22,90%
Nature and life sciences	3,60%	7,30%	29,10%	34,50%	25,50%

Source: prepared by the researcher based on the outputs of SPSS V25

The table below describe the distribution of students according to both their responses regarding the entrepreneurship intention statements and their participation in the different entrepreneurship activities

Table 21: Entrepreneurial Intention's Items * Entrepreneurship Education and Training Attendance Crosstabulation

Entrepreneurship education Activities	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
One of my professional goals is to become an entrepreneur					
Nothing of this	5,90%	6,70%	14,80%	28,90%	43,70%
Entrepreneurship training	11,50%	7,70%	7,70%	30,80%	42,30%
Entrepreneurial courses	2,10%	4,30%	17,00%	42,60%	34,00%
Entrepreneurial spirit and values transmitted by the university			50,00%	50,00%	
Entrepreneurial activity of resourcing or networking	25,00%			50,00%	25,00%
Entrepreneurial incubation project			50,00%	50,00%	
Business simulators or games	16,70%			16,70%	66,70%
Conferences or workshops related to entrepreneurship	15,40%			46,20%	38,50%
Enterprise visit or internship	4,80%	7,90%	12,70%	33,30%	41,30%
Successful entrepreneur's speech	10,00%	10,00%	20,00%	40,00%	20,00%
Entrepreneurship competition		10,00%	20,00%	35,00%	35,00%
Entrepreneurship clubs			16,70%	33,30%	50,00%
I will make every effort to start and run my own or co-owned firm					
Nothing of this	5,20%	6,70%	11,10%	40,70%	36,30%
Entrepreneurship training	11,50%		11,50%	34,60%	42,30%
Entrepreneurial courses		4,30%	27,70%	36,20%	31,90%
Entrepreneurial spirit and values transmitted by the university or colleges			50,00%	50,00%	
Entrepreneurial activity of resourcing or networking			50,00%	25,00%	25,00%
Entrepreneurial incubation project			50,00%	50,00%	
Business simulators or games		16,70%		16,70%	66,70%
Conferences or workshops related to entrepreneurship	15,40%		7,70%	46,20%	30,80%
Enterprise visit or internship	1,60%	6,30%	20,60%	34,90%	36,50%
Successful entrepreneur's speech	10,00%	10,00%	10,00%	40,00%	30,00%
Entrepreneurship competition		5,00%	25,00%	50,00%	20,00%
Entrepreneurship clubs		8,30%	16,70%	41,70%	33,30%
How likely are you to become an entrepreneur?					
Nothing of this	8,10%	6,70%	20,00%	37,80%	27,40%

Entrepreneurship training	3,80%	3,80%	19,20%	30,80%	42,30%
Entrepreneurial courses	8,50%	2,10%	21,30%	42,60%	25,50%
Entrepreneurial spirit and values transmitted by the university			50,00%	50,00%	
Entrepreneurial activity of resourcing or networking		25,00%		25,00%	50,00%
Entrepreneurial incubation project			50,00%	50,00%	
Business simulators or games			33,30%	16,70%	50,00%
Conferences or workshops related to entrepreneurship		30,80%	15,40%	53,80%	
Enterprise visit or internship	3,20%	4,80%	20,60%	44,40%	27,00%
Successful entrepreneur's speech		10,00%	30,00%	30,00%	30,00%
Entrepreneurship competition	5,00%	10,00%	20,00%	55,00%	10,00%
Entrepreneurship clubs		8,30%		58,30%	33,30%
I want to start my own or co-owned business sometime in the future					
Nothing of this	8,10%	3,70%	16,30%	37,00%	34,80%
Entrepreneurship training	3,80%		26,90%	38,50%	30,80%
Entrepreneurial courses		10,60%	17,00%	40,40%	31,90%
Entrepreneurial spirit and values transmitted by the university			50,00%	50,00%	
Entrepreneurial activity of resourcing or networking				50,00%	50,00%
Entrepreneurial incubation project			50,00%	50,00%	
Business simulators or games				33,30%	66,70%
Conferences or workshops related to entrepreneurship	7,70%		23,10%	61,50%	7,70%
Enterprise visit or internship	4,80%	1,60%	20,60%	41,30%	31,70%
Successful entrepreneur's speech			30,00%	30,00%	40,00%
Entrepreneurship competition	5,00%	10,00%	20,00%	55,00%	10,00%
Entrepreneurship clubs			16,70%	50,00%	33,30%
My intention is to be employed by others rather than being self-employed					
Nothing of this	42,20%	18,50%	20,70%	10,40%	8,10%
Entrepreneurship training	30,80%	15,40%	34,60%	11,50%	7,70%
Entrepreneurial courses	23,40%	25,50%	27,70%	14,90%	8,50%
Entrepreneurial spirit and values transmitted by the university	50,00%		50,00%		
Entrepreneurial activity of resourcing or networking	50,00%	25,00%			25,00%
Entrepreneurial incubation project	50,00%		50,00%		
Business simulators or games	66,70%		16,70%		16,70%
Conferences or workshops related to entrepreneurship	15,40%	23,10%	38,50%	7,70%	15,40%
Enterprise visit or internship	33,30%	14,30%	22,20%	17,50%	12,70%
Successful entrepreneur's speech	10,00%	30,00%	10,00%	50,00%	
Entrepreneurship competition	30,00%	30,00%	30,00%		10,00%
Entrepreneurship clubs	25,00%	16,70%	16,70%	33,30%	8,30%
I am determined to create my own or co-owned business in the near future.					
Nothing of this	4,40%	3,70%	17,00%	40,70%	34,10%
Entrepreneurship training	3,80%	3,80%	23,10%	34,60%	34,60%
Entrepreneurial courses	2,10%	6,40%	19,10%	38,30%	34,00%
Entrepreneurial spirit and values transmitted by the university			50,00%	50,00%	
Entrepreneurial activity of resourcing or networking	25,00%		25,00%		50,00%

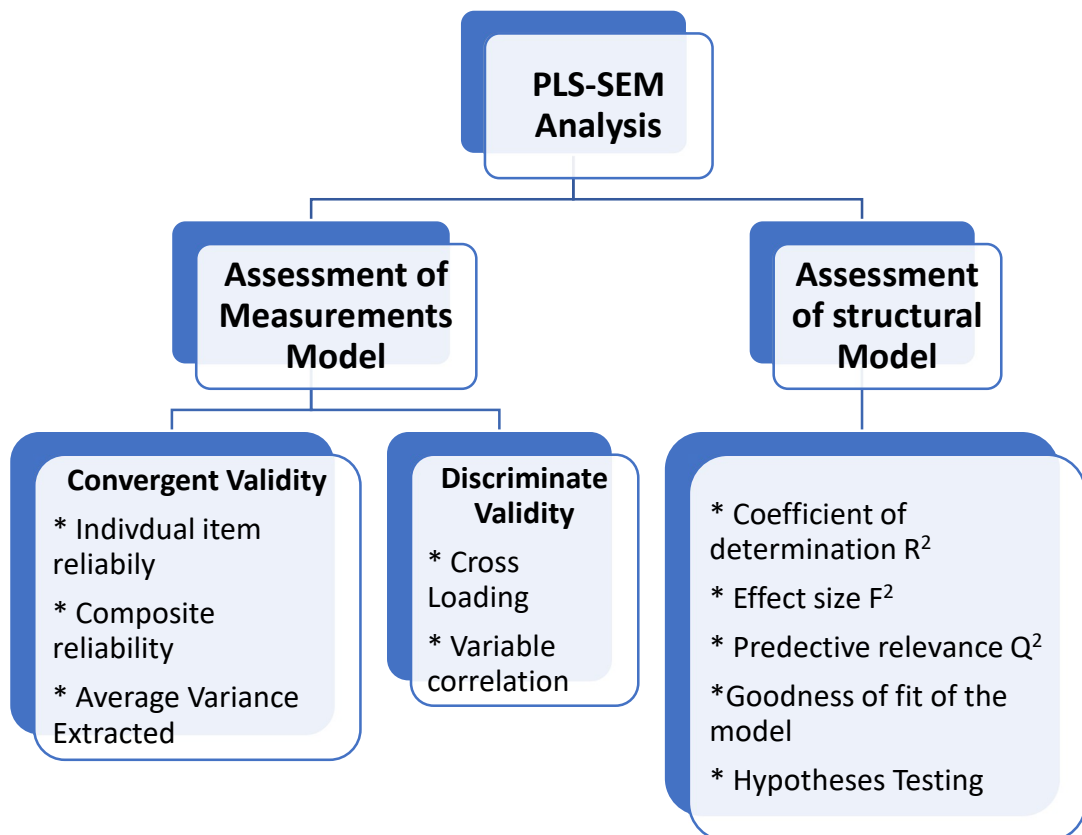
Entrepreneurial incubation project			50,00%	50,00%	
Business simulators or games		33,30%	16,70%	16,70%	33,30%
Conferences or workshops related to entrepreneurship		15,40%	38,50%	30,80%	15,40%
Enterprise visit or internship	1,60%	11,10%	20,60%	42,90%	23,80%
Successful entrepreneur's speech			20,00%	30,00%	50,00%
Entrepreneurship competition	5,00%	15,00%	35,00%	40,00%	5,00%
Entrepreneurship clubs		8,30%	16,70%	41,70%	33,30%
I have very seriously thought of starting a firm					
Nothing of this	5,20%	8,90%	24,40%	26,70%	34,80%
Entrepreneurship training	3,80%	3,80%	30,80%	26,90%	34,60%
Entrepreneurial courses	6,40%	6,40%	17,00%	31,90%	38,30%
Entrepreneurial spirit and values transmitted by the university			50,00%	50,00%	
Entrepreneurial activity of resourcing or networking			50,00%	25,00%	25,00%
Entrepreneurial incubation project			50,00%	50,00%	
Business simulators or games	16,70%		16,70%	33,30%	33,30%
Conferences or workshops related to entrepreneurship	7,70%		38,50%	23,10%	30,80%
Enterprise visit or internship	1,60%	12,70%	19,00%	31,70%	34,90%
Successful entrepreneur's speech			20,00%	60,00%	20,00%
Entrepreneurship competition	5,00%	5,00%	35,00%	45,00%	10,00%
Entrepreneurship clubs	8,30%		25,00%	33,30%	33,30%
The probability of starting my own or co-owned business is high in the next 3 years					
Nothing of this	7,40%	12,60%	23,70%	27,40%	28,90%
Entrepreneurship training	3,80%	3,80%	38,50%	23,10%	30,80%
Entrepreneurial courses	6,40%	8,50%	29,80%	23,40%	31,90%
Entrepreneurial spirit and values transmitted by the university			50,00%	50,00%	
Entrepreneurial activity of resourcing or networking			25,00%	25,00%	50,00%
Entrepreneurial incubation project			50,00%	50,00%	
Business simulators or games			33,30%	50,00%	16,70%
Conferences or workshops related to entrepreneurship		15,40%	23,10%	30,80%	30,80%
Enterprise visit or internship	9,50%	7,90%	28,60%	27,00%	27,00%
Successful entrepreneur's speech		10,00%	20,00%	40,00%	30,00%
Entrepreneurship competition	10,00%	10,00%	35,00%	35,00%	10,00%
Entrepreneurship clubs			33,30%	50,00%	16,70%

Source: prepared by the researcher based on the outputs of SPSS V25

3.1 Structural model and hypothesis testing

The study's structural model consists of six variables, including a completely independent variable, Entrepreneurship education and training(EET), and an entirely dependent variable, entrepreneurial intention(EI). The other four variables, which are the perceived attitude toward entrepreneurship(PA), subjective norms(SN), perceived opportunity(PO) and perceived self-efficacy(PSE), are all the mediating variables. The structural model contains 39 items, including 10 items to measure entrepreneurship education and training, 8 items for entrepreneurial intention, 6 items to measure subjective norms, 4 items for perceived opportunity, 6 items regarding perceived self-efficacy, and 5 items for perceived attitude toward entrepreneurship. The study's structural model is made up of four mediator factors: attitude toward entrepreneurship, subjective norms, perceived self-efficacy, and perceived opportunity. Finally, to analyse the results of the structural model, we also adopted the PLS analysis method using SmartPLS version 3 software and the 5000 bootstrap method (Boot Model Analysis) to estimate the direct and indirect effects, with the aim of evaluating the mediation effect.

Figure 21: Data Analysis process Using PLS-SEM



Source: Prepared by the researcher

3.1.1 Measurement model

The measurement model was assessed through convergent validity and discriminant validity. However, the convergent validity was assessed through Average Variance Extracted (AVE) and reliability test. Meanwhile, the discriminant validity was tested using the Fornell and Larcker (1981) criterion and cross-loadings criterion test.

3.1.1.1 Convergent Validity

According to Fornell and Larcker (1981), convergent validity can be assessed through Average Variance Extracted (AVE). Therefore, to establish convergent validity, the AVE scores should be greater than 0.50 (Fornell and Larcker, 1981). Based on the results in Table 22, the AVE scores for the construct are all above 0.50, as recommended by Fornell and Larcker (1981). According to Hair et al. (2014), the construct loadings scores should be greater than 0.70; and at the same time, the Average Variance Extracted (AVE) scores also must be greater than 0.50 in order to establish validity. Besides that, the composite reliability CR scores also must be greater than 0.70 in order to establish questionnaire reliability. Based on the results obtained, convergent validity was established.

Table 22: The results of reliability and validity test

Construct	Items	Cross-Loading	AVE	CR
Entrepreneurship education and Training (EET)	EET2	0,764	0,562	0,865
	EET3	0,722		
	EET5	0,785		
	EET6	0,748		
	EET7	0,728		
Entrepreneurial Intention	EI1	0,784	0,638	0,876
	EI2	0,826		
	EI3	0,789		
	EI4	0,795		
Percieved Attitude	PA2	0,708	0,618	0,828
	PA3	0,862		
	PA4	0,78		
Percieved Opportunity	PO2	0,725	0,596	0,815
	PO3	0,854		
	PO4	0,731		
Percieved Self-Efficacy	PSE2	0,719	0,561	0,793
	PSE3	0,787		
	PSE4	0,739		
Subjective Norms	SN1	0,765	0,712	0,881
	SN4	0,853		
	SN5	0,907		

Source: Prepared by the researcher based on the outputs of SmartPLS v3

Table 23: The results of construct loading

Variables	Items	Entrepreneurship education and Training (EET)	Entrepreneurial Intention	Percieved Attitude	Percieved Opportunity	Percieved Self-Efficacy	Subjective Norms
Entrepreneurship Education and Training	EET2	0,764	0,113	0,123	0,254	0,166	0,154
	EET3	0,722	0,197	0,169	0,225	0,130	0,124
	EET5	0,785	0,167	0,073	0,323	0,275	0,167
	EET6	0,748	0,195	0,197	0,276	0,209	0,205
	EET7	0,728	0,139	-0,011	0,205	0,084	0,237
Entrepreneurial Intention	EI1	0,166	0,784	0,414	0,238	0,399	0,350
	EI2	0,190	0,826	0,360	0,355	0,401	0,373
	EI3	0,188	0,789	0,339	0,311	0,460	0,419
	EI4	0,147	0,795	0,207	0,283	0,413	0,325
Percieved Attitude	PA2	0,130	0,360	0,708	0,235	0,177	0,162
	PA3	0,149	0,348	0,862	0,142	0,278	0,095
	PA4	0,620	0,246	0,780	0,122	0,252	0,054
Percieved Opportunity	PO2	0,271	0,266	0,123	0,725	0,389	0,272
	PO3	0,317	0,306	0,182	0,854	0,513	0,227
	PO4	0,218	0,290	0,209	0,731	0,276	0,860
Percieved Self-Efficacy	PSE2	0,142	0,380	0,190	0,312	0,719	0,126
	PSE3	0,140	0,455	0,307	0,513	0,789	0,225
	PSE4	0,270	0,339	0,159	0,316	0,739	0,245
Subjective Norms	SN1	0,234	0,434	0,099	0,306	0,378	0,765
	SN4	0,162	0,344	0,139	0,123	0,124	0,853
	SN5	0,183	0,370	0,126	0,180	0,131	0,907

Source: prepared by the researcher based on the outputs of SmartPLS v3

3.1.1.2 Discriminant validity

Discriminant validity is the extent to which a construct is truly distinct from other constructs by empirical standards. The Fornell-Larcker criterion and the cross-loadings are checked for discriminant validity. According to the Fornell-Larcker criterion, the square root of the AVE of each construct should be higher than the construct's highest correlation with any other construct in the model. Cross-loadings are an alternative to AVE as a method of assessing discriminant validity for reflective models. When analysing cross-loadings, each indicator's

outer loading on a construct should be higher than all its cross-loadings with other constructs. Based on the test results obtained, there is no discriminant validity issue for the research.

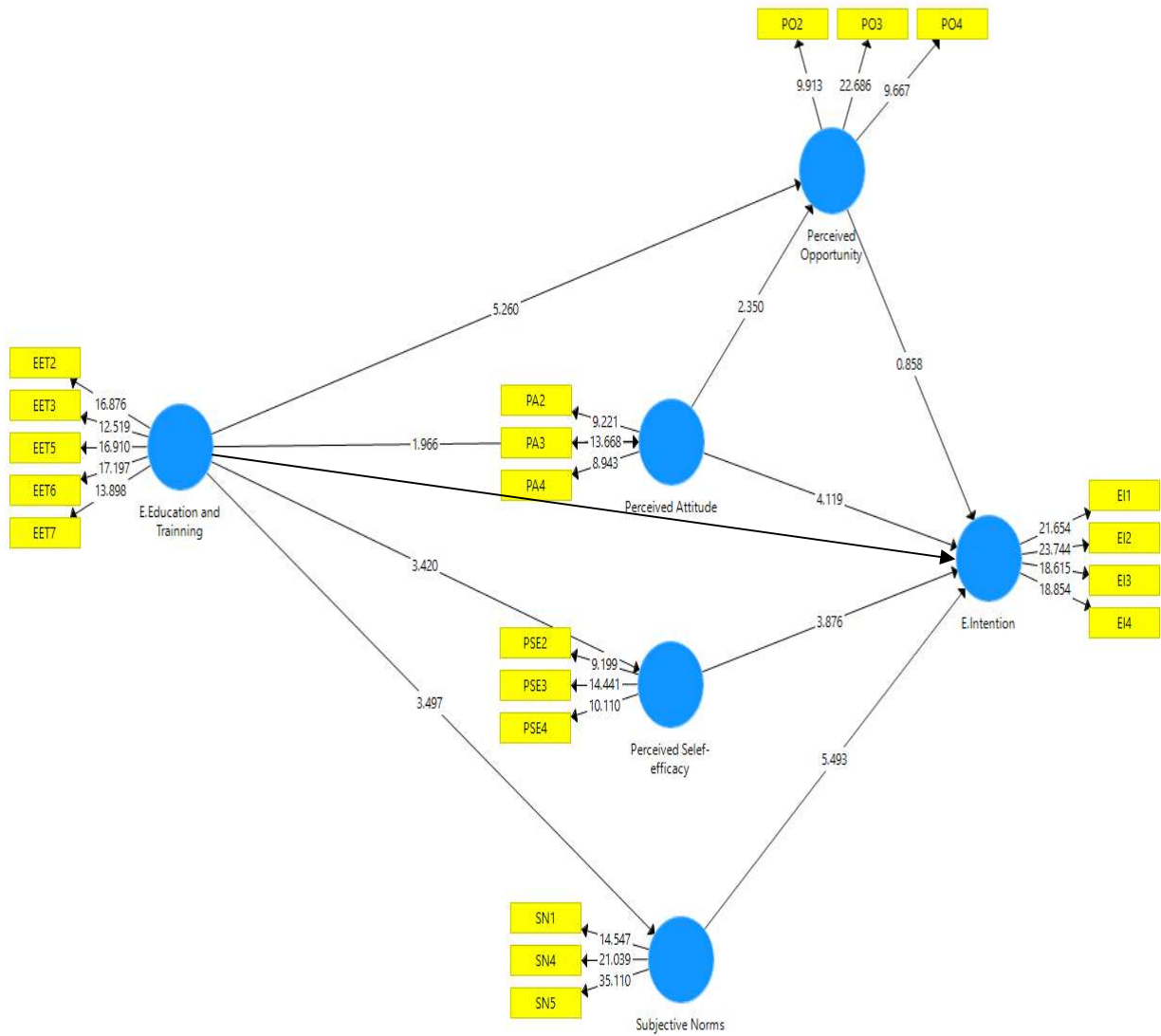
Table 24 indicates that the square root of AVE is higher than the correlations among latent variables.

Table 24: Fornell-Larcker criterion test

Constructs	EET	EI	PA	PO	PSE	SN
Entrepreneurship education and Training	0,750					
Entrepreneurial Intention	0,218	0,799				
Percieved Attitude	0,154	0,419	0,786			
Percieved Opportunity	0,350	0,373	0,223	0,772		
Percieved Self-Efficacy	0,240	0,525	0,296	0,515	0,749	
Subjective Norms	0,235	0,462	0,143	0,253	0,267	0,844

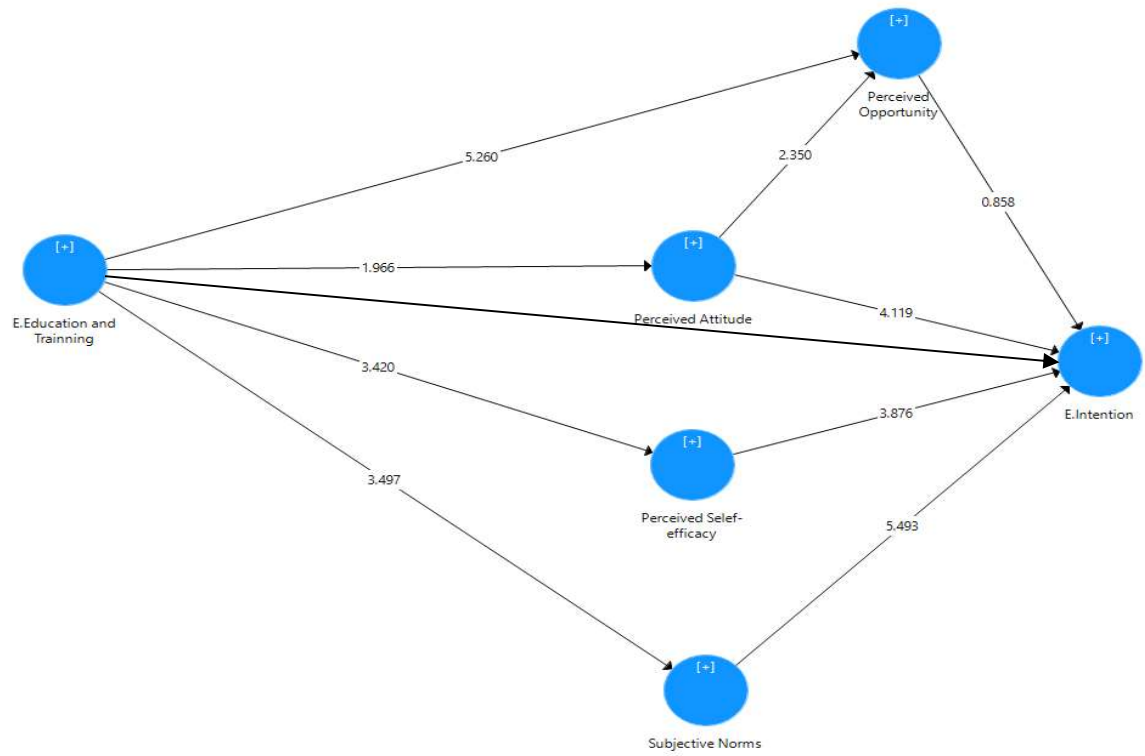
Source: prepared by the researcher based on the outputs of SmartPLS v3

Figure 22: Measurement Model



Source: Prepared by the researcher based on the outputs of SmartPLS v3

Figure 23: Construct Model



Source: Prepared by the researcher based on the outputs of SmartPLS v3

3.1.2 Structural model

The structural model will be assessed through three (3) steps coefficient of determination (R²), Predictive relevance (Q²), and effect size (f²). Table 25 displayed the coefficient of determination (R²) for the direct relationship. Moreover, the bootstrapping procedure (5000) was conducted to detect standard error and generate the t-values. Meanwhile, Figure 23 illustrates the endogenous construct and the path coefficient for the direct relationship.

3.1.2.1 Coefficient of Determination R²

Another important criterion for assessing the structural model in PLS-SEM is the *R*-squared value, which is also known as the coefficient of determination (Hair et al., 2011; .Hair et al., 2012; Henseler et al., 2009). The *R*-squared value **represents the proportion of variation in the dependent** variable that can be explained by one or more predictor variable (Elliott & Woodward, 2007; Hair et al., 2010; Hair et al., 2006). Although the acceptable level of *R*² value depends on the research context (Hair et al., 2010), Falk and Miller (1992) propose an *R*-squared value of **0.10** as a minimum acceptable level. Meanwhile, Chin (1998) suggests that the *R*-squared values of 0.67, 0.33, and 0.19 in PLS-SEM can be considered as substantial, moderate, and weak, respectively.

The square of the correlation coefficient R² represents the degree of model interpretation for the dependent variables (Raykov & Marcoulides, 2012), as well as Table 25 provides the square of the correlation coefficient of the model's dependent variables.

Table 25: Coefficient of determination (R²)

Constructs	R ²	Result
Entrepreneurial Intention	0,454	Moderate
Perceived Attitude	0,024	Weak
Perceived Opportunity	0,151	Weak
Perceived Self-efficacy	0,059	Weak
Subjective norms	0,055	Weak

Source: Prepared by the researcher based on the outputs of SmartPLS v3

Table 25 shows the value of the correlation square for the dependent factors, so the model interpretation according to Chin (1998), the values of R² that **above 0.67** considered high, while values ranging from **0.33 to 0.67** are moderate, whereas values between **0.19 to 0.33** are weak and any R² values less than **0.19** are unacceptable. While Falk and Miller (1992) propose an *R*-squared value of 0.10 as a minimum acceptable level. Which is weak for each

of the Perceived Attitude, Perceived Opportunity, the Perceived Self-efficacy, and Subjective norms 2 %, 15.1 %,5.9% and 5.5 %, respectively, and the value of R² for entrepreneurial intention in the study model is 45.4% %, which mean that 45.4% of the dependent variable entrepreneurial intention is explained by model factors, while 55.6% is explained by other factors.

3.1.2.2 Assessment of Effect Size (f²)

Effect size indicates the relative effect of a particular exogenous latent variable on endogenous latent variable(s) by means of changes in the R-squared (Chin, 1998). It is calculated as the increase in R-squared of the latent variable to which the path is connected, relative to the latent variable's proportion of unexplained variance (Chin, 1998).

The effect size could be expressed using the following formula (Cohen,1988; Selya, Rose, Dierker, Hedeker, Mermelstein, 2012; Wilson, Callaghan,Ringle, & Henseler, 2007)

$$f^2 = \frac{R_{included}^2 - R_{excluded}^2}{1 - R_{included}^2}$$

Interpreting Effect Size (f²)

- f² above 0.35 are considered large effect size.
- f² ranging from 0.15 to 0.35 are medium effect size.
- f² between 0.02 to 0.15 considered small effect size.
- f² values less than 0.02 are considering with NO effect size

Table 26: Effect Size (f²)

	E.Intention	Perceived Attitude	Perceived Opportunity	Perceived Self-efficacy	Subjective Norms
E.Education and Training		0.024	0.140	0.063	0.058
Perceived Attitude	0.112				
Perceived Opportunity	0.005				
Perceived Self-efficacy	0.135				
Subjective Norms	0.171				

Source: prepared by the researcher based on the outputs of SmartPLS v3

In addition to evaluating the R² values of all endogenous constructs, This measure of f² effect size represents the change in the R² value when a specified exogenous construct is

omitted from the model can be used to evaluate whether the omitted construct has a substantive impact on the endogenous constructs (Hair Jr et al., 2021).

The effect sizes f^2 for all structural model relationships for all combinations of endogenous constructs and corresponding exogenous. Subjective Norms; Perceived Self-efficacy; Perceived Attitude has a medium effect size of 0.171, 0.135 respectively on E.Intention and Perceived Attitude of 0.112 on E.Intention. On the contrary, Perceived Opportunity has no effect on E.Intention (0.005).

3.1.2.3 Predictive Relevance (Q^2)

For this purpose we will look into **Cross Validated redundancy (cv-red)** According to Fornell and Cha (1994) a cv-red value of >0 shows that there is predictive relevance while a value of <0 indicates the model lacks predictive relevance

Table 27: Cross Validated redundance

Constructs	SSO	SSE	$Q^2 (=1-SSE/SSO)$
E.Education and Training	1025.000	1025.000	
E.Intention	820.000	597.921	0.271
Percieved Attitude	615.000	608.950	0.010
Percieved Opportunity	615.000	565.524	0.080
Percieved Selef-efficacy	615.000	598.053	0.028
Subjective Norms	615.000	594.051	0.034

Source: prepared by the researcher based on the outputs of SmartPLS v3.

According to Fornell and Cha (1994), and the value of the Q^2 (**0.271**) (see Table 4.5) which is >0 , it can be concluded that there is predictive relevance of the model.

3.1.2.4 Goodness of Fit of the Model (GoF)

Tenenhaus, Vinzi, Chatelin, and Lauro (2005), defined GoF as the global fit measure, it is the geometric mean of both average variance extracted (AVE) and the average of R^2 of the endogenous variables. The purpose of GoF is to account on the study model at both level, namely measurement and structural model with focus on the overall performance of the model (Chin, 2010; Henseler & Sarstedt, 2013). The calculation formula of GoF is as follow:

$$GoF = \sqrt{(R^2 \times AVE)}$$

The criteria of GoF to determine whether GoF values are no fit, small, medium, or large to be considered as global valid PLS model have been given by Wetzels, Odekerken-Schröder, and Van Oppen (2009). Table 4.6 below presents these criteria:

According to the below Table 28, and the value of the **Gof (0.147)**, it can be concluded that the GoF model of this study is small enough to be considered sufficient global PLS model validity.

Table 28: Goodness of Fit criteria

GoF less than 0.1	No fit
GoF between 0.1 to 0.25	Small
GoF between 0.25 to 0.36	Medium
GoF greater than 0.36	Large

Source: Wetzels, Odekerken-Schröder, and Van Oppen (2009).

3.1.3 Direct hypothesis test:

Table 29: Coefficient of the direct Research Hypotheses

Hypotheses Relationship		Std. Beta	Std. Error	T-value	P-value	Decision
H1.1	Entrepreneurial education and Training -> Perceived Attitude toward entrepreneurship	0,154	0,076	2,073	0,043	Supported*
H1.2	Entrepreneurial education and Training -> Perceived Opportunity	0,322	0,064	4,948	0,000	Supported***
H1.3	Entrepreneurial education and Training -> Perceived Self-efficacy	0.243	0,073	3,393	0,001	Supported**
H1.4	Entrepreneurial education and Training -> Subjective norms	0,235	0.064	3,71	0,000	Supported***
H2.1	Perceived attitude toward entrepreneurship -> Entrepreneurial Intention of university students	0,261	0,060	3,984	0,000	Supported***
H2.2	Perceived Opportunity -> Entrepreneurial Intention of university students	0,064	0,077	0,807	0,410	Unsupported
H2.3	Perceived Self-efficacy -> Entrepreneurial Intention of university students	0,329	0,080	3,742	0,000	Supported***
H2.4	Subjective norms -> Entrepreneurial Intention of university students	0,320	0,062	5,106	0,000	Supported***

***p<0.001, **p<0.01, *p<0.05, Based on two tailed test: t(p<0.001) = 3.29, t(p<0.01) = 2.58, t(0.05) = 1.96

Source: prepared by the researcher based on the outputs of SmartPLS v3.

As shown in Table 30, through the use of SEM structural equation modelling with the help of SmartPLS V3 software, we find that the entrepreneurship education and training (EET) affects the perceived attitude toward entrepreneurship at the level of significance ($p < 0.05$) ($\beta = 0.154$, $t = 2.073$), then hypothesis **H1.1** is acceptable, as well the EET has a positive effect on each perception opportunity at the level of significance ($p < 0.001$) ($\beta = 0.322$, $t = 4.948$) as well as on the perceived self-efficacy at the level of significance ($p < 0.001$) ($\beta = 0.243$, $t = 3.393$) and on subjective norms ($p < 0.001$) ($\beta = 0.235$, $t = 3.710$), and from it we accept the hypothesis **H1.2**, **H1.3** and **H1.4**.

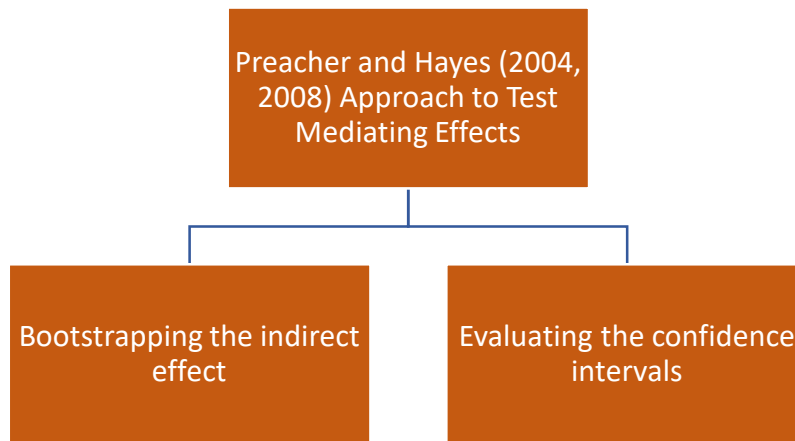
In addition it was found that the hypothesis in **H2.1** is acceptable, as there is a positive impact of perceived attitude toward entrepreneurship on entrepreneurial intention of university students at the level of significance ($p < 0.001$) ($\beta = 0.261$, $t = 3.984$). Also, the results proved the validity of the two hypotheses in **H2.3** and **H2.4** That perceived self-efficacy and subjective norms affects both positively the entrepreneurial intention at the significance level ($\beta = 0.329$, $t = 3.742$) ($p < 0.001$) and ($\beta = 0.320$, $t = 5.106$) ($p < 0.001$) respectively. Whereas, the hypothesis **H2.2** that perceived opportunity influences university students' entrepreneurial intentions is rejected.

3.1.4 Indirect hypotheses testing

According to Preacher and Hayes (2004, 2008), researchers should bootstrap the indirect impact sample distribution. This strategy has also been proposed in a regression context (Preacher & Hayes, 2004, 2008a), and Hayes' SPSS-based PROCESS macro has been applied. Bootstrapping¹ makes no assumptions about the form of the variables' distributions or the statistics' sampling distributions, therefore it may be used with greater confidence with small sample sizes. As a result, the methodology is ideal for the PLS-SEM method. Furthermore, as compared to the Sobel test, bootstrapping the indirect impact offers greater levels of statistical power.

¹ is a resampling technique that extracts a large number of subsamples (with replacement) from the original data and estimates models for each subsample. It is used to calculate standard errors of coefficients without relying on distributional assumptions in order to assess their statistical significance.

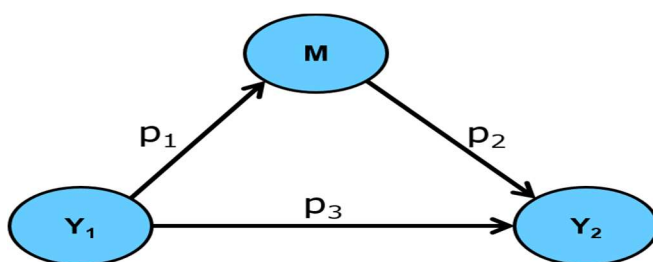
Figure 24: Test Mediating Effects approach



Source: prepared by the researcher

Mediation analysis is based on the assumption that there is a substantial association between the independent variable (X) and the result (Y) via the mediator (M). We should bootstrap the sample distribution of the indirect effect, as recommended by Preacher and Hayes (2004, 2008). Bias-corrected bootstrapping, in particular, is thought to be a strong tool for detecting mediation. An indirect effect that is statistically significant (t-value > 1.96, two-tailed, p 0.05) should be considered evidence for mediation (Preacher & Hayes, 2004; Zhao et al., 2010). Another important condition to confirming a mediation effect is analysing confidence intervals. The presence of a mediation effect is supported if the confidence interval for the indirect effect does not straddle a zero in between (and vice versa).

Figure 25: indirect effect



Source: prepared by the researcher

Total effect : refers to the effect of independent variable (IV) on dependent variable (DV) without the presence of mediation variable (see figure 4.4) represented by (**P3**)

Direct effect : refers to the effect of IV on the DV in the presence of mediating variable in the model (see figure 4.4) represented by (**c'**)

Indirect effect : refers to the effect of IV on DV through the mediator variable (**a x b**) .

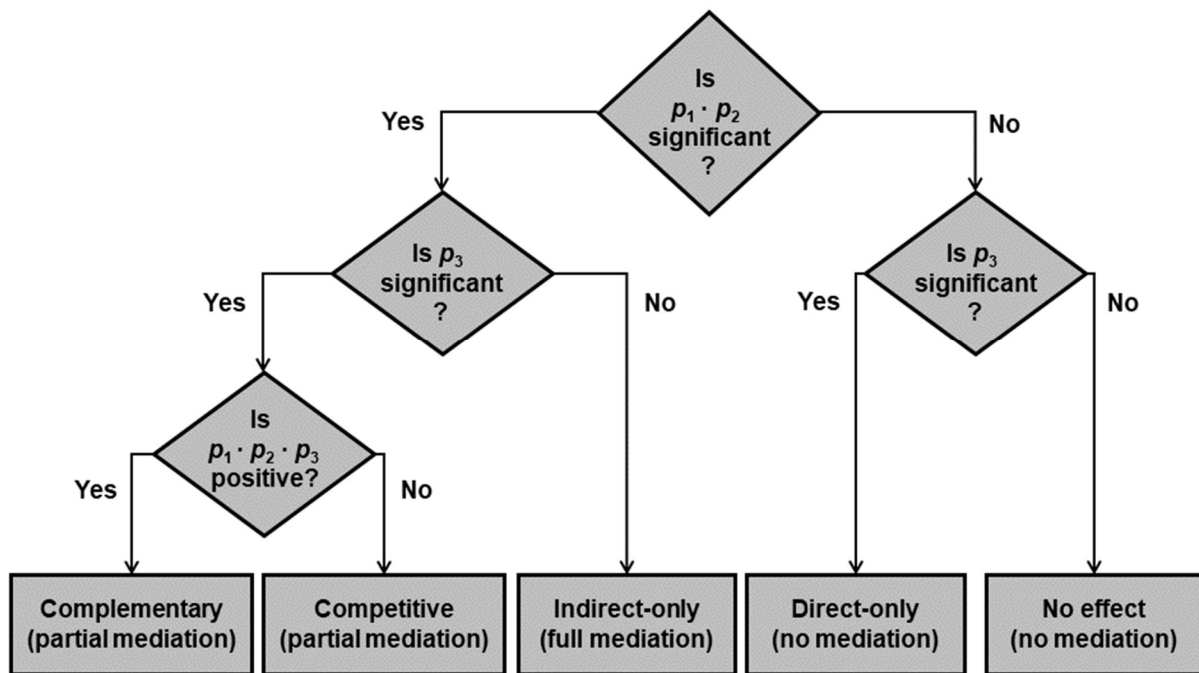
Zhao et al (2010) establish three patterns compatible with mediation and two patterns consistent with nonmediation in a nonrecursive three-variable causal model:

1. *Complementary mediation*: Both the **mediated (a x b)** and the **direct (c) effects** exist and point in the same direction.
2. *Competitive mediation*: Both the **mediated (a x b)** and **direct (c) effects** exist, but they point in different directions.
3. *Only indirect mediation*: There is a **mediated effect (a x b)**, but there is no **direct effect**.
4. *Direct-only nonmediation*:: There is a **direct effect (c)**, but no **indirect effect**.
5. *Nonmediation with no effect*: There is no **direct** or **indirect effect**.

According to Zhao et all (2010) PLS researchers have to start by testing the indirect effect (a x b) when analysing mediating effects. The indirect effect can also be formulated as the difference between the total and direct effect: Indirect effect (a x b) = total effect (c) – direct effect (c’)

Zhao et al. (2010) present a model, as shown in the following figure 4-7, for analysing a mediator model, which Hair et al. (2017) also propose for PLS-SEM:

Figure 26: analysing mediation model process



Source: Zhao et al. (2010)

Table 30: Direct Effect (EET -> E.Intention)

Construct	Coefficient (Std B)	P-Value
E.Education and Training -> Perceived Attitude	0,154	0.043
E.Education and Training -> Perceived Opportunity	0,323	0.000
E.Education and Training -> Perceived Selef-efficacy	0,244	0.001
E.Education and Training -> Subjective Norms	0,235	0.000
Perceived Attitude -> E.Intention	0,262	0.000
Perceived Opportunity -> E.Intention	0,064	0.410
Perceived Selef-efficacy -> E.Intention	0,329	0.000
Subjective Norms -> E.Intention	0,321	0.000

Source: prepared by the researcher based on the outputs of SmartPLS v3

Table 30:Total Effect (EET -> E.Intention)

Construct(Direct Effect)	Coefficient (Std B)	P-Value
E.Education and Training -> E.Intention	0.218	0.000

Source: prepared by the researcher based on the outputs of SmartPLS v3

The hypothesis **H4** ($\beta=.218, p<.000$) is accepted based on the results in the table above (see table 31), which confirm that entrepreneurship education and training has a significant impact on university students' entrepreneurial intentions.

3.1.4.1 Indirect hypothesis testing

Table 32 below shows the estimation of paths for the indirect relationships in the model

Table 31: Hypotheses result and Indirect Effects (EET on E.Intention)

Hypotheses	Coefficient	SD	T-Value	P-Value	BI [2,5%;97,5%]
H3.1: E.Education and Training -> Subjective Norms -> E.Intention	0.075	0.024	3.091	0.002	[0.030 ; 0.125]
H3.2: E.Education and Training -> Perceived Selef-efficacy -> E.Intention	0.080	0.037	2.184	0.029	[0.025 ; 0.162]
H3.3: E.Education and Training -> Perceived Attitude -> E.Intention	0.040	0.024	1.646	0.100	[-0.003 ; 0.092]
H3.4: E.Education and Training -> Perceived Opportunity -> E.Intention	0.021	0.026	0.780	0.436	[-0.025 ; 0.076]

Bootstrapping analysis was used at a confidence level of 95% (two-tailed test).

***p<0.001, **p<0.01, *p<0.05, Based on tow tailed test: t(p<0.001) = 3.29, t(p<0.01) = 2.58, t(0.05) = 1.96

Source: prepared by the researcher based on the outputs of SmartPLS v3

The indirect effect analysis was performed to assess the mediating role of Perceived Attitude (PA), Perceived Opportunity (PO), Perceived Self-efficacy(PSE), and Subjective Norms(SN) on the Relationship between EET and E.Intention the results (see Table 30) revealed that the total effect of EET on E.Intention **H4** was significant (H4:β=.218,t=3.105,p<.000). Whereas by proceeding to the analysis of confidence intervals, where the indirect effect does not straddle a zero in between, as it's for the case of the variables Subjective Norms(H6:β=0.075,t=3.091,p<.002 [0.030 ; 0.125]) and Perceived Self-efficacy (H7:β=0.080,t=2.184,p<.029, [0.025 ; 0.162]), that why we accept **H3.1** and **H3.2**, which confirm the presence of a mediation effect between entrepreneurship education and entrepreneurial intention, on the other hand, we reject the hypotheses **H3.3,H3.4** that's the impact of EET on E.Intention through Perceived Attitude and Perceived Opportunity were insignificant and unsupported.

Finally in the following Table 32, the results of the research hypotheses are presented

Table 32: Research hypotheses results

Hypotheses Relationship		Decision
H1.1	Entrepreneurial education and Training -> Perceived Attitude toward entrepreneurship	Accepted
H1.2	Entrepreneurial education and Training -> Perceived Opportunity	Accepted
H1.3	Entrepreneurial education and Training -> Perceived Self-efficacy	Accepted
H1.4	Entrepreneurial education and Training -> Subjective norms	Accepted
H2.1	Perceived attitude toward entrepreneurship -> Entrepreneurial Intention	Accepted
H2.2	Perceived Opportunity -> Entrepreneurial Intention	Rejected
H2.3	Perceived Self-efficacy -> Entrepreneurial Intention	Accepted
H2.4	Subjective norms -> Entrepreneurial Intention	Accepted
H3.1	Entrepreneurial education and Training -> Subjective Norms -> Entrepreneurial Intention	Accepted
H3.2	Entrepreneurial education and Training -> Perceived Self-efficacy -> Entrepreneurial Intention	Accepted
H3.3	Entrepreneurial education and Training -> Perceived Attitude -> Entrepreneurial Intention	Rejected
H3.4	Entrepreneurial education and Training -> Perceived Opportunity -> Entrepreneurial Intention	Rejected
H4	Entrepreneurial education and Training -> Entrepreneurial Intention	Accepted

Source: prepared by the researcher

3.2 Results & Discussion

3.2.1 Discussing the findings of the research variables and their correlations

The students' responses to the study's factors varied from slightly agree to strongly agree, with a positive entrepreneurial intention to start their own business in the nearish term; as a consequence, we can say that entrepreneurship has a favourable reputation in the university environment. As well the students of the University of Tlemcen and students of the Higher Schools of Management and Applied Sciences in Tlemcen gave overwhelmingly positive responses to the model's other study factors, and entrepreneurial education was also viewed favourably.

3.2.2 Discussing the proportions of the study's variables through the demographic characteristics:

Observing the distribution of students' statements regarding the majority of the items used to determine their inclination toward entrepreneurship and their intention to start their own business, taking into account the significant proportion, around 40% (see Table 21), of students who have stated that they have participated in at least one of the entrepreneurship education activities, in which the large number of those students are concentrated in the Enterprise visit or internship, entrepreneurial courses and training 18.9%,13.5% and 7.5% respectfully. Therefore, we were able to notice the minor differences in the frequency of students (see last table) who stated that they do not participate in any of these activities. Also, a high proportion of students say they don't have a concrete and clear idea for their own future entrepreneurial project. Thus, we presume that it stems from the fact that, on the one hand, both students, including those who have not received any entrepreneurial education, are more aware of the social benefits of entrepreneurship (creating new jobs) or the financial benefits (high income) (Boldureanu et al., 2020), and, on the other hand, the content of entrepreneurship education and training programs delivered to students remains at the level of sensitization and awareness about the importance of entrepreneurial spirit. While the more students require a practical education, which allows them to face real challenges and improves their entrepreneurial abilities, as well as their self-confidence and risk-taking, the more likely they are to establish successful businesses (Russell et al., 2008).

3.2.3 The Predictive potential of the Theory of Planned Behaviour (TPB) model for entrepreneurial intention in the frame of the study

In comparison to previous research, the study model explains 45.4 % of entrepreneurial intention, which is regarded significant. The models closest to this percentage were (Díaz-García et al., 2015; Lián, 2008; Lián & Chen, 2006; Lián et al., 2011c; Miralles et al., 2015; Anwar & Abdullah, 2021), in which explanation of the behaviour ranged between 40% and 60%, and there were some studies' models' explanation rates did not exceed 40%, such as (Lián & Chen, 2006), (Jani et al., 2015), (Sata, 2013), while others had a low explanation rate, such as (Fini et al., 2009, 2012) by 26% (Van Gelderen et al., 2008) by 38%. Therefore, according to (Lián & Chen, 2009), based on PA, PSE, PO, and SN, this model explains 45.4% of the variance in entrepreneurial intention. This is a really good finding, because most prior studies using linear models only explain around 40% of the time.

The theory of planned behaviour was adopted in the study model, with the adding of perceived opportunity factor to the original three factors, and the results confirmed the strength of the model to predict the entrepreneurial intention of university students (45.4%). Among the factors of the modified planned behaviour theory model, except for the hypothesis of the effect of opportunity perception on entrepreneurial intention, it was found that the perceived attitude and the perceived self-efficacy positively affect the entrepreneurial intention (0.173, 0.329 respectively) and this result is consistent with many previous studies, including (Shinnar et al., 2014 ; Alexander & Honig, 2016; Ambad & Damit, 2016; Bagheri & Pihie, 2014; Entrialgo & Iglesias, 2016; Boissin et al., 2009; Liñán & Chen, 2009 ; Hussain & Norashidah, 2015; Delanoë & Brulhart, 2011; M. C. Díaz-García & Jiménez-Moreno, 2010; Hongyi Sun, Choi Tung Lo, Bo Liang, 2016; Karimi et al., 2013; Liñán et al., 2011a; Lüthje & Franke, 2003; Miralles et al., 2015; Obschonka et al., 2015; Ozaralli & Rivenburgh, 2016; Sommer & Haug, 2011; Xu et al., 2016; Shah et al., 2020; Zapkau et al., 2015; Aries et al., 2020)

Although in several studies the influence of the Attitude in their model was higher than the perceived self-efficacy (Hussain & Norashidah, 2015; Kautonen et al., 2010; Liñán, 2008; Mei et al., 2020; Liñán et al., 2013; Liñán et al., 2011c; Mahmoudi et al., 2014 ; Miralles et al., 2015) The results of our study model showed that the perceived self-efficacy has a strong impact on the entrepreneurial intention, slightly more than the perceived attitude toward entrepreneurship , and this result is in agreement with the finding of the study leded by Liñán & Chen, 2009, the positive attitude of university students toward the entrepreneurial

career choice, as well as their awareness of the ability to perform the entrepreneurial activities, positively affected their entrepreneurial intention.

Meanwhile, the subjective norms factor in contrary of what the study of Maresch et al, 2016 end up, the finding reveal a positive impact on the entrepreneurial intention , and the results agreed with many studies such as (Shah et al., 2020; Sánchez, 2013 Küttim et al., 2014 ; Cruz et al., (2015); Entrialgo & Iglesias, 2016; Rauch & Willem Hulsink, 2012). Which goes closely with the fact that the ownership structure of most companies in Algeria is familial (Guessas & Lachachi, 2018) as shown by the majority of research in this area, which has revealed that the many figures of the Algerian entrepreneur share the same reality, namely, the social and familial network either in the creation or management of the business. Indeed, in Algeria, the goal of establishing family cohesiveness is frequently linked to the establishment and growth of businesses (Lachachi, 2014).it will be evident that the influence and the thought of the family circle and the relatives about our career inclination is conceivable. Whereas the perceived opportunity has not a significant impact on although there was a positive impact of entrepreneurship education and training on the perception of opportunity among students which could be influenced by other factors like fear of failure or a lack content program offered to students which allow them to surpass the difficulties that most entrepreneurs face in creating their company.

Noticing that there is consensus that entrepreneurship courses should be taught differently from the traditional management courses (Vesper and McMullen, 1988). while, The courses offered in the majority of the universities are at the basic level including “Introduction to entrepreneurship” and “Fundamentals of entrepreneurship management” and usually consist of some lectures on entrepreneurship concept and theory, business plan writing techniques, BP assignment and inviting a local successful entrepreneur as a guest lecturer. which actually is not concerned too much with the effect of the perception of the opportunity that comes largely from the field of innovation(Wei et al., 2019) and strategic watch (Sukavejworakit et al., 2018) that develops during the practical training.

3.2.4 Discussing the relationship between entrepreneurship education and the research model's mediator factors, as well as their impact on entrepreneurial intention.

First, the findings were in line with earlier studies on the effect of entrepreneurship education and training (EET) but nevertheless also present some differences. That, entrepreneurship education has a positive and significant impact ($\beta=0.218$, $t\text{-value}=3.105$, $p\text{-value}=0.000$) on the entrepreneurial intention of university students, which is in line with the finding of (Chen, 2010, Hernández-Sánchez et al, 2019, Farashah, 2013, Cui et al., 2019, Mei et al., 2020, Raposo & Paço, 2011)

According to the results obtained ($\beta=0.235$, $t\text{-value}=3.710$, $p\text{-value}=0.000$), there is a positive and significant relationship between entrepreneurship education and subjective norm. Many previous studies have established empirical evidence for subjective norms impacting the intention towards entrepreneurial behaviour. Entrialgo & Iglesias (2016). Zhang et al. (2019).

The finding also shows ($\beta=0.243$, $t\text{-value}=3.393$, $p\text{-value}=0.001$), a positive and significant relationship between entrepreneurship education and self-efficacy. Which is consistent with prior studies, which revealed that via entrepreneurial education, a learning method that emphasizes a practical approach can raise students' self-efficacy perception, thus, enhance their entrepreneurial intention (Piperopoulos and Dimov, 2015). This contrasts with the findings of Choi et al. (2019), who showed that entrepreneurship education has no significant impact on achievement desire and self-efficacy. While, traditional universities have always been used as a mean of progressing in society (Ahn et al., 2017). Universities, on the other hand, have recently upgraded their paradigm by delivering university education that promotes entrepreneurship as a career choice. Students may learn and get insight into how real-world business works through using experiential learning methods that will eventually help them gain confidence (Chang & Rieple, 2013). Self-efficacy is one of several important factors in the growth of entrepreneurship in education, according to (Jahani et al., 2018) . An individual with strong self-efficacy and self-confidence, according to (Liñán & Fayolle, 2015), will engage in entrepreneurial action with minimal risk acuity and will be more willing to start a new business.

Similarly, based on the findings of this study, regarding the relationship between entrepreneurship education and the perceived attitudes of students toward entrepreneurship, that is positively significant., which is consistent with the results of (Mwatsika & Sankhulani, 2016), whose found that entrepreneurship education stimulates positive waves in students'

attitudes towards entrepreneurship. As a reason, graduates with a positive mindset are more likely to engage in entrepreneurial activities. Entrepreneurship education and training has a positive association with Perceived attitude of student toward entrepreneurship ($\beta = 0.154$, $t\text{-value} = 3.512$, $p\text{-value} = 0.043$), according to table 5 ($\beta = 0.235$, $t\text{-value} = 3.710$, $p\text{-value} = 0.000$). Likewise, Ambad and Damita (2016) reached the same result.

As well this study reveal the positive impact ($\beta = 0.322$, $t\text{-value} = 4.948$, $p\text{-value} = 0.000$) of entrepreneurship education and training on perceived opportunity which is agreed with the finding of (Karimi et al., 2016a; Baručić & Umihanić, 2016; Wei et al., 2019). In the meanwhile, , the main purpose of this study was to examine the association between entrepreneurship education and entrepreneurial intention, which was examined through the mediating influences of perceived attitude, self-efficacy, subjective norms, and perceived opportunity. where the finding revealed that perceived self-efficacy and subjective norms play a significant mediating roles in the relationship between entrepreneurship education and entrepreneurial intentions. While self-efficacy and subjective norms has been identified in many studies (Nowiński et al., 2019; Piperopoulos & Dimov, 2015; Zhao et al., 2005) as an antecedent of entrepreneurial intention. However, it needs support from people such as family or friends named subjective-norm to start it, which can be developed through entrepreneur education awareness (Utami, 2017). Entrepreneurship education able to enrich the proper psychological disposition includes subjective norms that produce an impact on entrepreneurial behaviour (Takawira M Ndofirepi et al., 2018). Individual attributes, family involvement, entrepreneurial education could affect the students' intention to become entrepreneurs positively and significantly (Mustapha & Selvaraju, 2015).

3.3 Conclusion

The purpose of this research was to examine the impact of entrepreneurship education on the entrepreneurial intentions of students at Tlemcen University and other institutions in the city, using factors such as perceived attitude toward entrepreneurship, subjective norms, perceived opportunity, and perceived self-efficacy, also their direct impact. Moreover our research makes a strong point by investigating the mediation effects of these factors on the association between entrepreneurship education and entrepreneurial intentions in an Algerian context; Which was significant regarding the direct effect, but according to the results the mediating effect was only significant in the case of two factors subjective norms and perceived self-efficacy. The study contributes to expand one of the major theory of

entrepreneurial intention, the theory of planned behaviour developed by Ajzen (1991) . In line with these our study indicates that entrepreneurship training might exert important effects on entrepreneurial intention by encouraging students to choose an entrepreneurial career.

General conclusion:

Initially, this research highlighted the impact of entrepreneurship education on the entrepreneurial intention of university students and the relevance of its effect on the antecedents factors of entrepreneurial intention, which will foster a favourable perception among graduate students not only to engage in entrepreneurial activities, but also to develop a strong sense of self-worth and confidence, as well as stimulating creative thinking.

Meanwhile, the finding of this research work confirm the positive and significative association between entrepreneurship education and entrepreneurial intention, moreover the result revealed that perceived self-efficacy and subjective norms play a significant mediating roles in the relationship between entrepreneurship education and entrepreneurial intentions.

. The study also found that subjective norms have a substantial influence on the development of successful entrepreneurs among university students. But, more importantly, giving them the required skills to enhance their self-confidence. Thus, engaging in entrepreneurial activities based on relevant entrepreneurship education, which takes into consideration cultural factors to encounter the factors of the direct and indirect business environment. Furthermore, entrepreneurship education and training affects attitudes toward entrepreneurship by reducing fear of failure and increasing understanding of environment potential; and second, by displaying social status of entrepreneurs. Also, enhancing the perception of entrepreneurial opportunities. In addition, Entrepreneurship education and training boosts self-efficacy by offering necessary information and skills to creating a business, and raising entrepreneurship's feasibility expectations.

Practical contributions

The valuable contributions of this research work not only enrich the literature review of entrepreneurship research, but also add an important contribution to the empirical study part, which confirms the significant impact of entrepreneurship education and training on entrepreneurial intention among Algerian university students . Furthermore, two TPB model variables, subjective norms and perceived self-efficacy, have a favourably significant indirect impact. However, our distinctive contribution is the fact that we included and assessed the influence of the perceived opportunity factor, despite the fact that the mediating effect of this factor appears to be insignificant in the results.

Meanwhile, the practical contributions of this work could be summarized in two parts. The first part is about education and training. Where entrepreneurship education should be adapted to the cultural particularities of countries in order to improve the entrepreneurial skills of university students. As an illustration, to understand how the learning process influences educational material and pedagogic approach, as we consider the development of a business plan, as the most typical entrepreneurship education training exercise. to explore how the learning process influences educational content and curricula. The "Learning for Entrepreneurship" method proposes focusing on both organizational and strategic dimensions of the planning process and then asking students to apply what they've learned in a virtual environment, for as by developing a business plan based on their own ideas. In the business world, however, this sort of business plan exercise does not help students become entrepreneurs, however it could be used to demonstrate business operations (Honig & Karlsson, 2004). The "learning via entrepreneurship" strategy is a preferable alternative (Galvão et al., 2020). Working on real-business concepts, presenting final business plans in front of an investor committee and creating a business plan award competition, appointing experienced professionals to support student teams during development, and asking students to contact a sample of market segment rather than using secondary data are indeed a couple of good suggestions made during this process. The later phase stresses self-awareness, the personal learning strategy, and experiential aspects in addition to promoting entrepreneurial and start-up abilities. As a result of the preceding, all of these elements work together to foster students' entrepreneurial intention to carry their ideas into action. The second aspect, The Ministry of Higher Education, universities and other institutions, as well as new private incubators, must work to establish futuristic education designs that will assist in the development of a futuristic entrepreneur role. Although this, preliminary research is required to get industry and student opinions on the differences between previous and contemporary entrepreneurship education in higher education institutions, as well as a path forward for future entrepreneurship education. Furthermore, it is feasible that Algerian government agencies develop dynamic education programs that will transform people's social and cultural elements from being hired by others to self-creating enterprises that will develop the country's economy. Likewise, government agencies can examine the educational approaches of some of the world's best higher education institutions and apply similar strategies so that our universities may succeed too, or indeed surpass, them.

Limitations of this study and Suggestions for future research

There are certain limitations to this study that might lead to more investigation. First, a pre-test and post-test approach to the research design (Adelaja & Minai, 2018) would have been suitable for examining variations in entrepreneurial intention before and after receiving entrepreneurship education and training. The results of the causal associations studied should be regarded with caution due to the cross-sectional design of our study. Furthermore, we made the implicit assumption that students participating in entrepreneurship classes are chosen at random. It's possible that a student who desires to be an entrepreneur enrolls in an entrepreneurship course on purpose. These biases might be avoided with the aid of a longitudinal research. In a similar line, it would be fascinating to assess the impact of entrepreneurial education on perceived self-efficacy and attitudes over time. Is it consistent over time? Is this true, and if so, how does it affect intentions and, eventually, entrepreneurial behaviour?

Second, the impacts of entrepreneurship education and training are highly dependent on the program's specific features (objectives, contents, designs, methodologies, teams, etc.). It would be interesting to replicate this study with other curriculum and programs to see if the findings hold up under different educational circumstances.

Third, we relied our findings on a sample from a single country and a single culture from Tlemcen . Thus, care is advised when extrapolating the findings to other contexts. There is growing evidence that certain regions and societies are more conducive to entrepreneurial activity than others (Shirokova et al., 2018), and that variations in entrepreneurial activity between countries may be explained by cultural and/or economic indicators (Hayton et al., 2002; Valliere, 2019). Therefore, it would be interesting to do a multi-country replication of the study to see if the impacts of entrepreneurship education and training are consistent across locations, which could be relevant depending to the context.

Appendix

Research Questionnaire

Section (A) Demographic profil

Gender

- Male
- Female

Age

- Below 20 years
- Between 21 and 25 years
- Between 26 and 30 years
- Between 31 and 35 years
- Between 36 and 40 years
- Above 40 years

Marital status

- Married
- Divorced
- Veuf

Work status

- Employee (Public sector)
- Employee (Private sector)
- Runing my own business
- Pre-Employed
- Unemployed
- Supported by family

father's Profession

- Self-employed/owner
- Working /Worked in a Private company
- Working /Worked in a Public company
- Not working/unemployed

Mother's Profession

- Self-employed/owner
- Working /Worked in a Private company
- Working /Worked in a Public company
- Not working/unemployed

Education level

- Bachelor degree
- Bachelor student
- Master/Engineer degree
- Master student
- PHD degree
- PHD Student
- Doctor degree (medical sciences)
- Doctor student (medical sciences)

which University /High school / Institute you are enrolled in/graduated from?

.....

Field of study:

- Nature and life sciences
- Earth and universe sciences
- Sciences of physics and chemistry
- Medical sciences
- Mathematical sciences and their interactions
- Engineering
- Humanities and Social Sciences
- Arts
- Business, Economics & Administration
- Other

Monthly income (even if it's a family support)

- Not earning
- Less than 20 000 Da
- Between 20 000 DA and 34 000 DA
- Between 34 000 DA and 50 000 DA
- Between 50 000 DA and 120 000 DA
- More than 120 000 DA

Section (B) Entrepreneurship education and Training (Cui et al., 2019; Iwu, Chux Gervase, et al 2019)

EET1: The time allocated for the course in the time table is adequate

EET2: The course covers basic skills required for entrepreneurship

EET3: The course covers how business opportunities can be identified

EET4: Preparation of feasibility studies is contained in the course outline

EET5: The programme encourages students to meet and share business ideas

EET6: The course exposes students to relevant sources of funds for entrepreneurship activities

EET7: Students are encouraged to have practical experience in entrepreneurship through field work and interaction with practicing entrepreneurs

EET9: The studies include mastering the development of a business plan .

EET10: Entrepreneurship education equips graduates with business creation skills

Section (C) Perceived Attitude (Liñán & Chen, 2009; Shook & Bratianu, 2010)

PA1. A career as an entrepreneur is totally unattractive to me

PA2. If I had the opportunity and resources, I would love to start a business

PA3. Amongst various options, I would rather be anything but an entrepreneur

PA4. Being an entrepreneur would give me great satisfaction

PA5. Being an entrepreneur implies more advantages than disadvantages to me
Section (D) Social norms (Liñán & Chen, 2009; Shook & Bratianu, 2010; Kolvereid, 1996)

Section (E) Perceived Self-efficacy (Shook & Bratianu, 2010; K Esfandiar, M Sharifi-Tehrani, S Pratt,2019)

PSE1: I can tolerate unexpected changes in business conditions.

PSE2: I can react quickly to take advantage of business opportunities.

PSE3: I can originate new business ideas and products.

PSE4: I can create products that fulfill customers' unmet needs.

PSE5: I do not have the skills and capabilities required to succeed as an entrepreneur .

PSE6: I can develop a well-conceived plan and presentation to potential investors.

Section (F) Social norms (Liñán & Chen, 2009; Shook & Bratianu, 2010; Kolvereid, 1996)

SN1: If I were to start my own business, my parents would be

SN2:If I were to start my own business, my close friends would be

SN3:If I were to start my own business, my significant other would be

SN4:How important are your parents' opinions to you?

SN5:How important are your close friends' opinions to you?

SN6:How important is your significant other's opinion to you?

Section (G) Perceived opportunity (Bateman Cram's, 1993; GEM, 2016;Tsai, Chang, & Peng, 2016)

PO1: I've perceived strong opportunities for starting a business in their residential area

PO2:I've perceived strong opportunities for starting a business in the near future

PO3:I can spot a good opportunity long before others can

PO4:I am great at turning problems into opportunities

Section (H) E-intention (Botsaris & Vamvaka, 2016; Carsrud et al., 2017; Krueger, 2009; Liñán & Chen, 2009;Chen et al. 1998; Bagozzi et al., 2003; Van Gelderen, et al,2015)

EI1: One of my professional goals is to become an entrepreneur.

EI2: I will make every effort to start and run my own or co-owned firm.

EI3: How likely are you to become an entrepreneur?

EI4: I want to start my own or co-owned business sometime in the future.

EI5: My intention is to be employed by others rather than being self-employed.

EI6: I am determined to create my own or co-owned business in the near future.

EI7: I have very seriously thought of starting a firm.

EI8: The probability of starting my own or co-owned business is high in the next 3 years.

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