

**IMPACT OF ENTREPRENEURSHIP EDUCATION ON ENTREPRENEURIAL CAREER PERCEPTIONS:  
EVIDENCE FROM AN EMERGING ECONOMY**

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**ABSTRACT:** Entrepreneurship education becomes a great focal point of interest for researchers and national policy makers for stimulating students to pursue entrepreneurial careers. However, in literature there are conflicting views about the desired impacts of entrepreneurship education. This study tries to contribute to a better understanding of the intended impacts of entrepreneurship education. We investigated the impact of entrepreneurship education on the cognitive factors and psychological attributes of participants by relying on the socio-cognitive and trait approaches. For this purpose we conducted a quantitative research. We found a negative and insignificant impact of entrepreneurship education. Therefore, to understand how and in what ways entrepreneurship education impacts the participants we conducted interview-based qualitative research.

**Keywords:** Entrepreneurship Education; Personality Traits; Entrepreneurial Career; Socio-Cognitive Factors; Theory of Planned Behavior, Emerging Economy

**JEL Classification:** L26, A22

**GİRİŞİMCİLİK EĞİTİMİNİN GİRİŞİMCİ KARIYER ALGISI ÜZERİNDEKİ ETKİSİ: GELİŞMEKTE OLAN BİR EKONOMİDEN KANITLAR**

**ÖZ:** Girişimcilik eğitimi, öğrencilere, girişimcilik kariyerini seçmeleri için ilham veren, araştırmacıların ve ulusal politikacıların büyük bir odak noktası haline gelmektedir. Fakat, literatürde girişimcilik eğitiminden beklenen etkiler konusunda çelişkili görüşler vardır. Bu çalışma, girişimcilik eğitiminde amaçlanan etkilerinin daha iyi bir şekilde anlaşılmasına katkıda bulunmaya çalışmaktadır. Bu çalışmada biz sosyo-bilişsel yaklaşım ve karakter yaklaşımlarına istinaden katılımcıların bilişsel faktörleri ve psikolojik özellikleri hususunda girişimcilik eğitiminin etkisini inceledik. Bu amaç dahilinde, niceliksel bir araştırma yürüttük. Çıktı olarak girişimcilik eğitiminin negatif ve önemsiz bir etkisi olduğunu gördük. Bu sebepten ötürü, girişimcilik eğitiminin, katılımcıları nasıl ve ne şekilde etkilediğini anlamak için, görüşmeye dayalı niteliksel bir araştırma yürüttük.

**Anahtar Kelimeler:** Girişimcilik Eğitimi; Kişilik Özellikleri; Girişimcilik Kariyeri; Sosyo-Bilişsel Faktörler; Planlı Davranış Teorisi, Gelişmekte Olan Ekonomi

**JEL Sınıflandırması:** L26, A22

**1. Introduction**

Sensing the importance of entrepreneurial careers for job creation and sustainable development governments around the globe are encouraging the students to pursue entrepreneurial careers. For the development of motivated students who have entrepreneurial awareness, competencies, knowledge and skills, governments and higher education institutions have started to design education programs and training. The robust growth in the number of courses offered and the related content of entrepreneurship education

(EE) programs showed that entrepreneurship is considered to have a positive impact on the social, economic, cultural and political infrastructure of a country (Matlay 2008; Matlay and Carey 2007). This globally emergent branch of EE as a promising research field (Jones, Penaluna and Pittaway, 2014), has also gained the significant attention of entrepreneurship researchers. For instance, the special issues of Education+Training and the special section of the International Journal of Management Education (Vol. 12:3) about the theory and practice of EE with global perspective, shows the importance of this realm of research.

Though governments and policy makers are placing emphasis on EE, scholars in this realm of research have conflicting views about the impact of EE imparted by universities (Bae et al. 2014). Some scholars are of the view that teaching entrepreneurship as an alternative career is beyond both the time and scope of an academic institution (Johannison 1991; Rae 1997). Furthermore, it has been argued that traditional skills taught at entrepreneurship courses and business schools are not sufficient for the pursuit of a successful entrepreneurial career (Oosterbeek, van Praag and Ijsselstein, 2010; Rae 1997). On the other hand, scholars have offered valuable insights into how EE can positively impact the perceptions, attitudes and intentions of potential entrepreneurs (Gibb 2002; Kuratko 2005; Mitra and Matlay 2004; Neck and Greene 2011). The researchers of this belief argued that EE is an important motivating factor, which increases entrepreneurial attitudes and intentions, and enhances the probability that participants of EE will pursue an entrepreneurial career in their future. The lack of agreement warrants further investigation about the impact of EE.

In the light of this debate in EE literature, we aimed to investigate the impact of EE in the context of an emerging economy, Turkey. As an emerging economy with high growth rates, entrepreneurial behavior and EE is an important phenomenon for Turkey. The Global Entrepreneurship Monitor (GEM) in their 2012 report observed that entrepreneurship had increased in highly educated regions of Turkey (Xavier et. al., 2012). Additionally, Turkey is experiencing an exponential rise of SMEs owned by the 'Anatolian Tigers'- a breed of Turkish entrepreneurs emerging after the neo-liberal policies of different Turkish governments since the mid 1980s (Bayirbag 2010).

Recognising the importance and scope of entrepreneurship, the Turkish government has started to aggressively develop the policies and institutions that support and promote entrepreneurship. Although many governmental and private institutions play an important role for the promotion of entrepreneurship, Small and Medium Enterprise Development Organisation (KOSGEB) and The Scientific and Technological Research Council of Turkey (TUBITAK) are the main actors. KOSGEB focuses on SMEs in terms of guidance and financial supports, and founded the first 'Entrepreneurship Institution' in Turkey in 1998, which imparts EE to the aspiring entrepreneurs and to the owners of small and medium enterprises.

TUBITAK is the other important government institution that leads the government policy on the entrepreneurship and innovation through its Supreme Council for Science and Technology (SCST), chaired by the Prime Minister. Major focus of government policies and support programs through TUBITAK is on the training and education of potential entrepreneurs. In pursuance of government's effort to encourage the entrepreneurial careers, TUBITAK is conducting EE programs with the collaboration of different Turkish universities in order to redirect the human resources to the entrepreneurial activities and careers.

One such program was opened in 2013, by TUBITAK to conduct and support EE in universities. This program included 120 hour training on different subjects of entrepreneurship for bachelor, master and doctorate students. TUBITAK not only supported the program financially but also provided the content to be taught. This program provides a theoretical based education to students including the courses of business plan development, finance, marketing, production, project management, business modeling and strategy. This study examined one of the TUBITAK supported EE programs conducted by a state university situated in Ankara.

We analysed the impact of EE on the participants' perceptions and attitudes towards entrepreneurship, which were enrolled in the TUBITAK supported EE program. The central aim of this study is to investigate that EE program has what kind of impact on the entrepreneurial attitudes and psychological attributes of the participants. Therefore, we address the question: does entrepreneurship education have a positive impact on the socio-cognitive factors and psychological attributes of the EE participants? By relying on the socio-cognitive and trait approach we measured this impact.

We used the pre-test post-test design for measuring the impact of EE. The results of our quantitative research showed that most of the socio-cognitive factors and psychological attributes either decrease or show negligible increase after EE. Therefore, we

took our research one step further and conducted in-depth interviews to understand the reasons why EE does not have an impact on the participants in the desired manner and in what ways EE influence the participants.

By drawing together previously published work our study has both theoretical and practical implications. By integrating both socio-cognitive and trait approaches for measuring the impact of EE, this study allows for a robust understanding of the impact of EE, particularly in the context of an emerging economy. The results of this study could be useful to policymakers to understand not only the pattern of relationships among the different dimensions of impact of EE, but may also have implications for the development of appropriate EE programs and their course content.

The remainder of this paper is organized as follows. The first part of the study involves theoretical background on EE and its anticipated impact on perceived desirability, self-efficacy, subjective norm, entrepreneurial intent, achievement motivation and locus of control. Whilst the second part of the study presents the methodology and results of quantitative study, the following section describes the methodology and findings of the qualitative study. This part is followed by the discussion and implications of the study. Finally, the study is concluded with conclusion, limitations and future studies section.

## 2. Entrepreneurship education (EE)

Akin to the definitional problems of entrepreneurship, there is no single consensual definition of EE in the literature. The goal of some of the research is to classify the EE based on different criteria (Jamieson 1984; Garavan and O'Conneide 1994). Some define EE by specifying the elements which differentiate EE from general education (McMullan and Long 1987) while recent definitions of EE cover an array of situations, aims, methods and teaching approaches (Fayolle and Klandt 2006; Linan 2004). In the context of our research we employed the definition proposed by Fayolle and Klandt (2006) "...any pedagogical program or process of education for entrepreneurial attitudes and skills, which involves developing certain personal qualities (p.1)." This is a comprehensive and concise definition, which not only highlighted the transfer of knowledge and skills to pursue entrepreneurial careers, but also associated attitudes and personality characteristics.

In the existing literature, similar to the definition of EE, there are different categories of EE depending on the particular program objectives, content and delivery modes (Henry and Treanor 2010, Jamieson 1984; Linan 2004). One such categorization is proposed by Linan (2004). He classified the EE in four categories. The objective of the first category of *entrepreneurial awareness education* is to enrich and enhance the alternative career perspective of the attendees by enhancing their feasibility, desirability and motivation for entrepreneurship. The objective is not for the immediate creation of entrepreneurs. Short EE courses represent this category. The second category *education for start-up* is focused on the issues related to start-up phase e.g. how to obtain financing, legal regulations, taxation, etc. (Curran and Stanworth 1989), and is designed for the preparation of individuals to be the owner of a small conventional business. Linan's (2004) third category *education for entrepreneurial dynamism* addresses the entrepreneurial behavior after the start-up phase. The objective is not to increase the intention but to increase the entrepreneurial dynamism necessary for the expansion of business. The fourth and last category is *continuing education for entrepreneurs*. Its objective is to bring improvement in the existing entrepreneur's abilities (Weinrauch 1984), and is a specialized version of adult education.

The selection criterion for the entrepreneurship program, which we looked on, rely excessively on already having a viable business idea and has the contents centered on the specific practical aspects related to the start-up phase. Since the EE program possesses the characteristics of education for start-up, we henceforth use the term EE for *education for start-up*.

In addition to the definition and classification of EE the impact of EE has been a prominent theme in the literature over the years (Charney, Libecap and Center, 2000; Peterman and Kennedy 2003). Scholars argued that entrepreneurial skills could be taught through EE (Gundry, Ofstein and Kickul, 2014; Piperopoulos and Dimov 2014) however; there is a considerable debate over the desired outcomes, effectiveness and value of the EE. The research on the impact of EE has yielded mixed results. Results of some research showed positive impact of EE (Peterman and Kennedy 2003; Zhao, Seibert and Hills 2005). Peterman and Kennedy (2003) in their study found that EE brings positive changes in an individual's perceptions of entrepreneurship and this change is related to the positiveness of prior experience and to the positiveness of experience in the EE program.

In contrast with the studies, which found the positive impact of EE, some studies found mixed or minimal impact (Olomi and Sinyamule 2009; Souitaris, Zerbinati and Al-Laham, 2007; Lorz, Mueller and Volery, 2011). Moreover, recent evidence

suggests a negative impact of EE on the students' entrepreneurial intentions (Oosterbeek, van Praag and Ijsselstein, 2010; Von Graevenitz, Harhoff and Weber, 2010). Oosterbeek et al. (2010) and Graevenitz et al. (2010) attributed this insignificant or negative impact of EE on the perceptions of entrepreneurship to the fact that, during and after EE courses, students have obtained more realistic perspectives both on themselves as well as on what it takes to be an entrepreneur.

In the Turkish context, Ipcioglu and Taser (2011) found no impact of business education on the entrepreneurial traits of the undergraduate students. However, Bozkurt, Aslan and Goral (2011) in their study found a positive effect in terms of entrepreneurial tendencies of EE students in Turkish universities. The inconsistency and ambiguity in the results of the impact of EE programs led the researchers to call for more research into the impact of EE (Bae et al. 2014).

To get an insight into the impact of EE on the desired outcomes researchers used different theoretical frameworks. In existing literature, theoretical frameworks from social psychology and the trait approach has been widely used for investigating the impact of EE (Hansemark 1998). Relating to the trait approach it is argued that in general traits do not change over time, and are therefore assumed to be unaffected by program participation. However, in the context of our study, trait scores may change during the course of EE programs since the sample consists of young adults, and trait scores become stabilized – on average – when people are 30 years old, and traits also develop very much during young adulthood, i.e., the university period (Roberts et al., 2001; Robins et al., 2001). Moreover, it has been suggested that personality traits can be inculcated and enhanced through socialisation and training (Chell 2008).

### **2.1. Socio-cognitive approach and impact of EE**

Grounded in social psychology, the socio-cognitive approach contributes significantly to understanding entrepreneurial behavior. The socio-cognitive perspective gained the interest of researchers by providing the tools that contribute to the scientific understanding of the shaping of entrepreneurial mind-set of the individuals planning to pursue an entrepreneurial career in future. The main approach within this stream of research is to understand entrepreneurial behavior through the lens of different cognitive determinants of intention, and other contextual factors (Krueger, Reilly and Carsrud, 2000). Arguably the most widely researched of these socio-cognitive perspectives is Ajzen's (1991) theory of planned behavior (TPB).

The core premise of TPB is that human social behavior is reasoned, controlled and planned in anticipation of the likely consequences of such considered behavior (Ajzen and Fishbein 2000); in other words, TPB simply holds that an individual acts on the basis of a given intention (Ajzen 1991). TPB posits that intentions to perform behaviors of different kinds can be predicted with high accuracy through three cognitive constructs: (1) the individual's attitude toward the behavior (2) subjective norm and (3) perceived behavioral control.

Attitude toward the behavior refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. In entrepreneurship literature this construct of TPB is reflected as the perceived desirability of entrepreneurial behavior, and refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the outcomes of being self-employed versus an organizational employment (Krueger, Reilly and Carsrud, 2000).

Subjective norm refers to the perceived social pressure to perform or not to perform the behavior. This construct of TPB in the domain of entrepreneurship studies appears as the perceived social pressure to enter an entrepreneurial career or to pursue an organizational employment. In particular, it taps the input of significant others, such as family, friends and colleagues, about pursuing an entrepreneurial career (Krueger, Reilly and Carsrud 2000).

Perceived behavioral control refers to a person's perception of the ease or difficulty of performing a particular act. This concept builds on Bandura's (1977) view of self-efficacy (Bandura 1997; Krueger, Reilly and Carsrud 2000). Perceived behavioral control appears as entrepreneurial self-efficacy in entrepreneurship literature (Drnovšek, Wincent and Cardon, 2010). Entrepreneurial self-efficacy refers to a person's perception of the ease or difficulty of performing an entrepreneurial act.

Intention is a representation of a future course of action to be performed, which is not simply an expectation or prediction of future actions but a proactive commitment to bringing them about (Bandura 2001). Social-psychological theorists (Bandura 2001; Fischben and Ajzen 1975) have demonstrated the importance of intentions on the likelihood of actions at a future point in time. By drawing heavily on the works in social psychology (Ajzen 1991; Bandura 1977) scholars in the entrepreneurship field

suggested the concept of entrepreneurial intentions for better understanding of the cognitive infrastructure undergirding the entrepreneurial mindset. (Bird 1988; Krueger and Carsrud 1993) In her seminal contribution, Bird (1988) described intentions as entrepreneurial intentions, which are aimed at creating a new venture. Entrepreneurial intentions thus exhibit one's desire to own one's own business or to start a business (Krueger, Reilly and Carsrud 2000).

Entrepreneurship scholars are of the view that the aforementioned cognitive factors of TPB are underlying structures, which play an instrumental role in a person's entrepreneurial behavior (Linan, Nabi and Krueger 2013). This suggests that entrepreneurial behavior is a deliberate and planned behavior, driven by cognitive factors, which in turn are influenced by many exogenous factors including the exposure to educational experience (Ba et al. 2014; Krueger et al. 2000; Moriano et al. 2012).

Because of its highly predictive power, TPB has also been widely used in the specific context of EE (Fayolle, Gailly and Lassas-Clerc, 2006). Exposure to EE may influence the perceptions about the desirability and feasibility of entrepreneurial behavior, subjective norm and entrepreneurial intentions (Shapero and Sokol 1982; Krueger, Reilly and Carsrud 2000). All of these elements can contribute to knowing how one sees oneself, and whether one believes he or she is able to become a successful entrepreneur (Fayolle, Gailly and Lassas-Clerc, 2006). Hence, by measuring the differential impacts of EE on the elements of TPB, impact of EE can be evaluated.

### **2.1.1. Perceived desirability and EE**

An individual's perceived desirability of entrepreneurship is an affective attitudinal judgment regarding the value of an expected entrepreneurial career. The correlation to this proposition may be stated as follows: that perceived desirability is, in turn, affected by personal attitudes, values and feelings, which are influenced by many social factors including the experience of EE (Bird 1988; Peterman and Kennedy 2003). Because the participation in EE provides social experiences such as opportunities to exercise significant responsibilities, lecture sessions with successful and unsuccessful entrepreneurs and to observe role models, therefore, EE could be expected to influence the perceived desirability of pursuing an entrepreneurial career (Peterman and Kennedy 2003). Therefore, it is proposed that:

*H1: Students' participation in EE program will increase their perceived desirability of entrepreneurial career.*

### **2.1.2. Self-efficacy and EE**

In entrepreneurship literature there are divergent views about the use of self-efficacy as a general measure or entrepreneurship-specific entrepreneurial self-efficacy measure. Some theorists argue that a general self-efficacy (GSE) construct is sufficient, as it is a relatively stable, trait-like, generalized competence belief (Chen, Greene and Crick, 1998), which refers to an individual's confidence about his/her general competencies. On the other side of the spectrum some scholars have argued that since entrepreneurial tasks are focused on a specific context and activity domain, therefore, for the purpose of greater predictive power it is more appropriate to use the context-specific measure of self-efficacy, called entrepreneurial self-efficacy (ESE) (e.g., De Noble, Jung, D. and Ehrlich, 1999; Begley and Tan 2001; Forbes 2005; Kolvareid and Isaksen 2006). ESE is therefore, associated with the core entrepreneurial competencies and skills. Since generalized competencies and entrepreneurial competencies are critical for an entrepreneurial career we therefore measured both the GSE and ESE.

The notion of GSE, relates to an individual's perception about whether he/she has the abilities perceived as important to produce high levels of performance in tasks undertaken in life (Bandura 1977). GSE is concerned not with the skills one possesses, but with one's judgments of what one can do with whatever skills one possesses (Kickul et al. 2009). Individuals with high self-efficacy for a certain task are more likely to pursue and then persist in that task than those individuals who possess low self-efficacy (Bandura 1997). Exposure to a trustful teaching environment that produces the belief in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in one's life (Wood and Bandura 1989) can enhance an individual's low GSE. Since EE provides a fertile ground in the form of teaching practices and course contents that focus on role modeling, verbal persuasion and mastery experiences, therefore, it is expected that exposure to such education will elevate the GSE of the participants.

ESE relates to the dynamic interaction between the individual and the environment by explaining what cognitive, motivational and affective processes are involved in an individual's decision to engage in entrepreneurial activities (Baron 2004), and how

these processes are shaped by environmental factors (Mitchell et al. 2002). It has been argued that entrepreneurial self-efficacy is influenced and developed by experience and social influence (Boyd and Vozikis 1994; Shapero and Sokol 1982), by observational learning, vicarious experiences, verbal and social persuasion, and physiological arousal (Boyd and Vozikis 1994; Drnovsek et al. 2010). In this context, exposure to EE is expected to increase the ability to master the necessary cognitive, memory processing, and behavioral facilities to deal effectively with the entrepreneurial task, and strengthen their self-confidence regarding entrepreneurial careers. Based on the aforementioned arguments we proposed that:

*H2a: Student's participation in EE program will increase their GSE.*

*H2b: Student's participation in EE program will increase their ESE.*

### **2.1.3. Subjective norm and EE**

The subjective norm is a product of two components: normative beliefs and the motivation to comply with these beliefs (Ajzen 1991). Normative beliefs involves the opinion of valued others about performing or not performing a behavior. The motivation to comply reflects an individual's willingness to conform to these norms. Therefore, the social surroundings in which an individual is embedded can, through the cognitive path of subjective norm, catalyze or hinder their entrepreneurial aspirations (Moriano et al. 2012). EE in the form of feedback and encouragement by mentors, family and friends provides a social ambience, which may bring a positive change in the normative beliefs and motivation to comply of the participants. Hence, it is proposed that:

*H3: Student's participation in EE program will positively impact subjective norm.*

### **2.1.4. Entrepreneurial intentions and EE**

Scholars in the realm of EE have extensively used entrepreneurial intentions as a measure to evaluate the impact of EE programs (Krueger, Reilly and Carsrud 2000). EE influences the entrepreneurial intentions of students by providing the image of entrepreneurship as an alternative career (Slavtchev, Laspita and Patzelt 2012), along with the role played by resources and other support mechanisms available in the education environment. In a similar vein, EE is expected to enhance the participant's entrepreneurial intentions by projecting positive entrepreneurial perceptions (Linan 2008; Martin, McNally and Kay, 2013). By offering courses in new business development or business planning, EE promote a participant's employment prospects, increase risk-taking propensity by enhancing their opportunity recognition skills, and imparts entrepreneurial skills, which may enhance participant's entrepreneurial intentions. Hence, we proposed that:

*H4: Student's participation in EE program will increase their entrepreneurial intentions.*

## **2.2. Trait approach and EE impact**

Along with the socio-cognitive approach many researchers have pursued the trait approach to entrepreneurship, in an attempt to separate entrepreneurs from non-entrepreneurs and to identify a list of character traits specific to the entrepreneur (e.g., Douglas and Shepherd 2000; Henry, Hill, and Leitch, 2003; van Gelderen and Jansen 2006). In the trait approach the focus is on the individual character traits (McClelland, 1961; Brockhaus and Horwitz 1986). Research suggests that individual characteristics in the form of psychological traits are vital for a person's possibility and interest in acting in an entrepreneurial way (Hansemark 1998). Particularly, in an educational situation, the trait approach seems to be the most promising approach (Hansemark 1998), and the significance of a psychological trait for entrepreneurial activity is considered to be important (Shaver and Scott 1991).

One of the fundamental objectives of EE is to develop the participants' psychological characteristics (Hansemark 1998). Hence, for a better understanding of the impact of EE psychological characteristics are appropriate measures. However, there are very few studies that take into account psychological characteristics for this purpose.

Over the years many psychological attributes have been studied in relation to entrepreneurship e.g., risk-taking propensity (Stewart and Roth 2001), tolerance of ambiguity uncertainty (McMullen and Shepherd 2006), desire for autonomy (Kirby 2003) and need for power (Hatch and Zweig 2000). Among an array of psychological attributes, achievement motivation and internal locus of control have been significantly associated with entrepreneurial behavior (Hansemark 1998; Johnson 1990). In a similar vein, achievement motivation and internal locus of control are considered to be the two most suitable psychological attributes for evaluating the impact of EE (Hansemark 1998).

### 2.2.1. Achievement motivation and EE

The construct of achievement motivation is based on McClelland's research (1961). Achievement motivation is defined as a motive to do well and to achieve a goal to a set of standards. The basis of this motive is to do the tasks better and more quickly than other people, or to do the tasks much better than a person's own prior achievements (Hansemark 1998).

Achievement motivation in relation to entrepreneurs refers to their need to achieve as a motivational factor. McClelland (1961) argued that high achievement motivation influenced the decision to pursue an entrepreneurial career. Further, McClelland suggested that achievement motivation is associated with setting and achieving goals, a desire for feedback and the likelihood of entering an entrepreneurial career (Brockhaus 1982; McClelland 1961). Hence, it is the prospect of achievement (not just money) that drives the entrepreneurs.

McClelland (1965) presents a strong argument in support of the view that achievement motivation can be taught (Henry, Hill, and Leitch, 2003). EE by offering feedback and personal task exercises is expected to elevate the achievement motivation of the participants. Based on these arguments we proposed that:

*H5: Student's participation in EE program will result in a higher level of achievement motivation.*

### 2.2.2. Internal locus of control

The theory of locus of control was developed by Rotter (1966). This psychological attribute refers to the degree to which an individual perceives events in his/her life to be under his/her control (internal), or as unrelated to his/her action and therefore beyond his/her control (external) (Rotter 1966). People will relate the reason to the happenings in their lives, either to themselves or to the external environment. Individuals who seem to have control over occurrences have an internal locus of control. Individuals who seem to think the control over what happens is due to external factors have an external locus of control (Rotter 1966).

The concept of locus of control has been extensively used by entrepreneurship scholars for differentiating entrepreneurial personality from non-entrepreneurial personality (Cromie and Johns 1982; Hansemark 1998, 2003; Mueller and Thomas 2001). However, research on the locus of control of the entrepreneur has yielded conflicting results. Some researchers exhibit that higher internal locus of control is associated with entrepreneurial potential (e.g. Hansemark 1998, 2003; Mueller and Thomas 2001) while some studies found no relationship between internal locus of control and entrepreneurial behavior (e.g. Brockhaus and Nord 1979; Engle, Mah and Sadri, 1997). Because of its less predictive power researchers proposed to combine the internal locus of control with other personality traits rather than consider internal locus of control as a single measure of the entrepreneurial behavior.

Chell (1985) stated that Rotter's concept of locus of control is a learned behavior. Similarly, in their study of university students, Mueller and Thomas (2001) concluded that traits such as internal locus of control and innovativeness are learned and not immutable. This suggests that it may be important to discover the conditions that may affect the development of internal locus of control. The environment of EE programs is one such condition, which may help to enhance the internal locus of control. EE, by offering the cognitive process of developing and implementing business plans and strategies through competitions and simulations, is an effort to steer an individual's attempt to control and manage the environment. This strategy is designed to create a situation where the odds of success outweigh possible failure. Thus, participants of EE are expected to learn that they can control their environment through learned internal locus of control. Therefore, we proposed that:

*H6: Student's participation in EE program will result in a higher level of internal locus of control.*

## 3. Methodology

### 3.1. Sample

The practical research focus of the paper is a Turkish state university situated in Ankara. The university offered the EE program with the support of TUBITAK. The program got a great interest and response from the students of the university. However, as per requirements of the TUBITAK, the university offered limited number of seats for the EE program, therefore, interviews were conducted for the selection of suitable participants. In these interviews the criteria for selection was the entrepreneurial idea, logical and financial potential of this idea and level of willingness to attend the program. After the process of interviews 40 out

of 200 applicants were selected however only 21 students attended the program regularly. These 21 students of the EE program and a control group of 26 business management department students of the university constituted our research subjects. The reason for selecting the business management students as a control group is that it is assumed that business management education enhances the chances of new venture creation (Krueger and Brazeal 1994).

The contents of the EE program were composed of technical based EE, including the courses on Introduction to Entrepreneurship, Business Plan Development, Finance, Strategy and Leadership, Project Planning and Marketing. The control group had the following first year general management courses: History of Science and Technology, Calculus for Business, Introduction to Economics, Introduction to Business, Computer Programming, Academic English, English for Business and Turkish Language.

The average age of EE participants is 25 while the average age of the control group is 20. The educational background of EE participants is varied. However, the control group consists of first year students of business school. Demographic details are given in table 1.

**Table 1:** Demographics of Quantitative Study

	<b>EE Participants</b>	<b>Control Group</b>
<b>n</b>	<b>21</b>	<b>26</b>
<b><i>Participants Background</i></b>		
% female	33%	42%
% male	67%	58%
% family own business	52%	38%
% worked in family business	29%	23%
% entrepreneurial experience	38%	15%
<b><i>Age</i></b>		
20-22	57%	100%
23-27	19%	0%
28-42	24%	0%
<b><i>Education</i></b>		
% bachelor	62%	100%
% master	24%	0%
% doctorate	14%	0%
<b><i>Department</i></b>		
Business Management	43%	100%
Engineering	24%	0%
Economics and Administrative Sciences	24%	0%
Bio Statistics	10%	0%

### **3.2. Measurement Scale**

Our quantitative study is based on measuring the difference in participants' socio-cognitive factors and the psychological attributes differences before and after the program. To measure socio-cognitive factors we used the cognitive factors based on TPB. These measures include: *perceived desirability*, *subjective norm*, *entrepreneurial self-efficacy*, *entrepreneurial intention*, and *general self-efficacy*. For the psychological attributes we used *internal locus of control*, and *achievement motivation*.



The study used existing scales found in the literature. The entrepreneurial self-efficacy scale was taken from Wilson, Kickul and Marlino (2007), which broadly relates to the entrepreneurial self-efficacy measures of Chen et al. (1998) and DeNoble et al. (1999). The scale for general self-efficacy was taken from Schwarzer and Jerusalem (1995). The perceived desirability scale was taken from Krueger (1993), while subjective norm and entrepreneurial intention, were measured by items taken from Linan and Chen (2009). For the measurement of internal locus of control we used the Rotter's (1966) scale. The scale for achievement motivation was taken from Guay, Mageau and Vallerand (2003). The English language version of the questionnaire was used because English is the teaching language at the university.

#### **4. Results**

Socio-cognitive and trait variables which are the most important determinants of successful entrepreneurship in the literature (Krueger, Reilly, and Carsrud, 2000; Hansemark 1998) were measured on the 7-point Likert scale. A questionnaire was distributed at T1 (at the beginning of semester) and at T2 (towards the end of semester) to both EE participants and control group. The data was collected by one of the authors during scheduled lecture periods in weeks two and twelve of the fourteen week semesters. The obtained data was transferred into SPSS v20.0 files and statistical analyses were conducted by running t-test.

For the purpose of the reliability of the data we ensure the construct validity of all scales for internal validity and overall scale reliability with Cronbach alpha measures both at T1 and T2. Cronbach's alpha of all scales was found above the critical value of 0.70 both at T1 and T2 (Table 2). The results of Cronbach alpha show that the data collected is consistent and reliable, considering the exploratory character and small sample size of this survey.

The main statistical analysis, which we used to measure the differences of average scores of variables at T1 and T2, was sample t-tests (Hansemark 1998; Oosterbeek, van Praag and Ijsselstein, 2010). We used t-tests to measure the difference between pre and post education for EE participants and also for the control group. Further, we also measured the difference between the EE participants and control group.

**Table 2:** Cronbach's Alpha at T1 and T2

<b>Items</b>	<b>No. of items</b>	<b>Cronbach's Alpha-T1</b>	<b>Cronbach's Alpha-T2</b>
Internal Locus of Control	24	0.85	0.87
Percieved Desirability	5	0.89	0.85
Subjective Norm	4	0.71	0.74
Entrepreneurial Self Efficacy	10	0.92	0.90
Motivation	16	0.81	0.83
General Self Efficacy	8	0.94	0.92
Entrepreneurial Intention	5	0.90	0.92

The answers of the participants who attended the program have a normal distribution both at T1 and T2. The paired sample t-test is applied in order to see whether a significant change results from the education. First we applied paired t-test to EE participants. Table 3 summarizes the differences of average scores of variables at T1 and T2. Results showed insignificant or no increase in any measured variable. Therefore, all of our hypotheses were rejected. On the other hand, the scores showed a significant decrease in the scores of entrepreneurial intentions ( $\bar{x}_{t-1}=5.37$ ;  $\bar{x}_{t-2}=4.92$ ;  $p=0.047$ ). These results are surprising given the objective of the EE program was to enhance the desirability towards entrepreneurial careers, motivation and entrepreneurial

intention of the participants. The insignificant and negative impact of EE showed the ineffectiveness of the EE program on the socio-cognitive and psychological attributes of the participants, at least as it is executed at the university of our analysis.

In the control group all the variables had a normal distribution. When paired sample t-test is applied to the variables, we observe no significant increase in the scores of any measured variable. However, scores for the internal locus of control showed a significant decrease ( $\bar{x}_{t-1}=4.35$ ;  $\bar{x}_{t-2}=4.90$ ;  $p=0.001$ ). Since the content of the business management courses were not focused on the entrepreneurship therefore these results were expected. No impact on the socio-cognitive factors and a decrease in the internal locus of control of the students of control group exhibited that the business management course is highly focused on preparing the students to pursue a paid job career.

**Table 3:** Pre and post education differences

Items	EE Participants (n=21)			Control group (n=26)		
	T1	T2	diff.	T1	T2	diff.
Internal Locus of Control (LoC)	5.03	4.72	-0.32	4.90	4.35	-0.54**
Percieved Desirability (PD)	5.41	5.48	0.07	4.88	4.79	-0.09
Subjective Norm (SN)	4.89	5.06	0.17	4.93	4.40	-0.53
Entrepreneurial Self Efficacy (ESE)	4.96	4.96	0.00	5.00	4.86	-0.14
Entrepreneurial Intention (EntInt)	5.37	4.92	-0.45*	5.01	4.73	-0.28
Motivation (MOT)	4.82	4.62	-0.21	4.78	4.77	-0.01
General Self Efficacy (GSE)	5.49	5.48	0.00	5.30	5.14	-0.16

Note: \*/\*\* indicates significance at the 5% - 1%-level

Besides intra-group differences we also explore and compare the inter-group differences. To test whether there is a significant difference in terms of the variables between the participants of EE and control group we applied independent samples t-tests both at T1 and T2. At T1 results showed that there is no significant difference between the EE participants and control group. In other words, both the participants of the EE program and the students in the control group were almost at the same score in their socio-cognitive factors and psychological attributes at T1. Scores at the T2 indicated high scores for the participants of the EE program as compared to the control group for the perceived desirability ( $\bar{x}_{Exp}=5.48$ ;  $\bar{x}_{Cont}=4.79$ ;  $p=0.039$ ) and subjective norm ( $\bar{x}_{Exp}=5.06$ ;  $\bar{x}_{Cont}=4.40$ ;  $p=0.039$ ). Table 4 summarizes these results.

**Table 4:** Difference between EE participants and control group at T1 and T2

Items	Group	n	Mean	Std. Deviation	Std. Error Mean	Sig. (2-tailed)
LOC_t1	Participants	21	5.03	0.64	0.14	0.415
	Control	26	4.90	0.47	0.09	
PD_t1	Participants	21	5.41	1.20	0.26	0.151
	Control	26	4.88	1.28	0.25	
SN_t1	Participants	21	4.89	1.06	0.23	0.907
	Control	26	4.93	1.22	0.24	
ESE_t1	Participants	21	4.96	0.85	0.18	0.879
	Control	26	5.00	0.90	0.18	
EntInt_t1	Participants	21	5.37	1.09	0.24	0.300

	Control	26	5.01	1.25	0.25	
MOT_t1	Participants	21	4.82	0.63	0.14	0.812
	Control	26	4.78	0.67	0.13	
GSE_t1	Participants	21	5.49	0.99	0.22	0.521
	Control	26	5.30	0.98	0.20	
LoC_t2	Participants	21	4.72	0.66	0.14	0.079
	Control	26	4.35	0.71	0.14	
PD_t2	Participants	20	5.48	0.98	0.22	0.039*
	Control	26	4.79	1.17	0.23	
SN_t2	Participants	21	5.06	0.91	0.20	0.029*
	Control	26	4.40	1.05	0.21	
ESE_t2	Participants	21	4.96	0.89	0.19	0.737
	Control	26	4.86	1.09	0.21	
EntInt_t2	Participants	21	4.92	1.29	0.28	0.633
	Control	26	4.73	1.43	0.28	
MOT_t2	Participants	21	4.62	0.57	0.12	0.499
	Control	26	4.77	0.85	0.17	
GSE_t2	Participants	21	5.48	0.93	0.20	0.257
	Control	26	5.14	1.10	0.22	

Note: \*/\*\* indicates significance at the 5% - 1%-level

Since gender plays an important role in the development of entrepreneurial attitudes (Cardoso and Moreira 2009) , we also therefore examined the data to uncover the influence of gender on the impact of EE. For this purpose we employed the independent samples t-test. Results showed that at T1 male participants have significantly higher scores in perceived desirability as compared to female students ( $\bar{x}_M=5.83$ ;  $\bar{x}_F=4.60$ ;  $p=0.024$ ). When we measured the differences at T2 we found significant score differences between male and female participants for entrepreneurial intention ( $\bar{x}_M=5.31$ ;  $\bar{x}_F=4.14$ ;  $p=0.047$ ), achievement motivation ( $\bar{x}_M=4.82$ ,  $\bar{x}_F=4.22$ ;  $p=0.019$ ) and entrepreneurial self-efficacy ( $\bar{x}_M=5.24$ ,  $\bar{x}_F=4.39$ ;  $p=0.034$ ). These results showed that the EE program has a far less and more negative impact on the female participants' socio-cognitive factors and psychological attributes as compared to the male participants.

**Table 5:** Differences regarding gender

Items	Male	Female	Diff.	Sign. (2-tailed)
LOC_t1	5.09	4.92	0.17	0.582
PD_t1	5.83	4.60	1.23*	0.024
SN_t1	4.91	4.86	0.05	0.917
ESE_t1	5.14	4.59	0.56	0.160
EntInt_t1	5.73	4.66	1.07	0.104
MOT_t1	4.90	4.68	0.22	0.473
GSE_t1	5.70	5.06	0.65	0.280
LoC_t2	4.82	4.51	0.30	0.334
PD_t2	5.57	5.31	0.25	0.599
SN_t2	5.25	4.68	0.57	0.279
ESE_t2	5.24	4.39	0.86*	0.034
EntInt_t2	5.31	4.14	1.17*	0.047

MOT_t2	4.82	4.22	0.60*	0.019
GSE_t2	5.68	5.09	0.59	0.181

Note: \*\*\*/\*\* indicates significance at the 5%/1%-level

## 5. Qualitative research

Since we did not get support for any of our hypotheses about the desired impact of EE, therefore, we decided to take our research a step further and conducted in-depth interviews to comprehend the reasons of not obtaining the desired impacts of EE and how EE influence the participants. Additionally, the purpose of interviews was to get an opinion of the participants about the benefits of the program and how it can be improved. As a valuable research technique, both accepted in the entrepreneurship (Perren and Ram 2004) and education research streams (Merriam 1998), we adopted an interview-based qualitative research method.

The interviews were conducted with seven participants of EE. These participants were selected randomly among the 21 EE participants considering some demographic criteria. Gender, department, education degree and job were the factors considered in the selection of the interviewees. Open-ended semi-structured questions were directed to the interviewees. Each interview lasted 20-25 minutes. All interviews were recorded and later transcribed verbatim. Data obtained from interview is encoded on the basis of these sub-titles: family background, social environment, benefits of EE and view about EE. Based on a cross comparison of interviews, data analysis occurred and our findings were obtained.

**Table 6:** General information about the interviewees

	I-1	I-2	I-3	I-4	I-5	I-6	I-7
<b>Common Properties</b>	<i>Taking EE, Having a Business Idea</i>						
<b>Age-Gender</b>	<i>34-Male</i>	<i>20-Female</i>	<i>26-Male</i>	<i>20-Female</i>	<i>22-Male</i>	<i>25-Female</i>	<i>20-Male</i>
<b>Department/Degree/Job</b>	<i>Business/ MBA/Working in a government department. Previously founded his own business and closed down</i>	<i>Business/ Undergraduate/ student and previously helped her father in his business</i>	<i>Business / MBA/ Research Assistant</i>	<i>Business/ Undergraduate/ student</i>	<i>Engineering/ Undergraduate/ student</i>	<i>Biostatistics/ MBA/ Research Assistant</i>	<i>Business/ Undergraduate/ student and works in family business</i>

A common characteristic of all the interviewees is that all of them possess a business idea. Interviewees 1,3,5,7 are male while 2,4,6 are female. Among the interviewees, five interviewees are from the business management department while two interviewees are from engineering faculty. Interviewees 1,3,6 are students at postgraduate level while the other four are undergraduate students. Only interviewee 1 had founded his own business previously while interviewee 7 is currently working in his family business. Interviewee 2 had worked previously in family business. Interviewee 1,3 and 6 are students and also working with salary while the remaining interviewees are full-time student.

### 5.1. Findings of qualitative research

*Finding 1: Influence of family background and social environment is stronger than the impact of EE*

Interviewee 6 and 7 showed a high level of confidence and desire to start their own businesses. Both of these interviewees belong to business owning families. Their social and family environment provided them with the required socio-cognitive infrastructure, such as perceived desirability and self-efficacy for an entrepreneurial career. Therefore, the EE with a focus on the technical aspects does not seem to enhance socio-cognitive factors.

Interviewees 1, 2, 4 and 5 planned to work with salary as a first step before starting their own businesses. All of these interviewees have non-business family backgrounds. Because of lack of business experience, financial funds and necessary business skills these interviewees preferred to do a salaried job first, and started their own businesses later in life after acquiring the essential resources for starting a new business. After the EE these participants understand that managing a business is a tough job, which negatively affected their desirability towards entrepreneurship, ESE and psychological attributes.

Interviewee 3 stated that he would not leave his current salaried job for an entrepreneurial career. For him the entrepreneurial career is not a full time career. His family and socially embedded ambience has a strong influence on him, which is a strong belief in a secure job career rather than pursuit of an entrepreneurial career. This shows that his cognitive path of subjective norm strongly hinders his entrepreneurial intentions.

**Table 7:** Sample statements about the influence of family background and social environment

	<i>I-1</i>	<i>I-2</i>	<i>I-3</i>	<i>I-4</i>	<i>I-5</i>	<i>I-6</i>	<i>I-7</i>	
	<i>Yes- But not in long term</i>	<i>Yes- as a first step</i>	<i>Yes- always</i>	<i>Yes-as a first step</i>	<i>Yes-as a first step</i>	<i>No</i>	<i>No</i>	
<i>Finding 2: contributes</i>	<i>"I started my business in 2002 and then left it because of lack of support from my parents and friends. I hope they will support me when I will start a business in future."</i>	<i>"If after finishing education my father will support me I will prefer my own business but if not ready, I will prefer salary."</i>	<i>"I don't leave the academic career and salary because my family will not allow me but also I like to do my own business I want both of them."</i>	<i>"All of my friends will do a job. This brings financial security For me also salary is first step and a vehicle for business"</i>	<i>"in our society to start a business requires lot of financial and moral support from family. My family don't have resources. I will work then start my business "</i>	<i>"Founding own business is more easy as my family and relatives are there to support me."</i>	<i>"My family is a business family therefore its natural for me to have my own business."</i>	<i>EE towards</i>

*understanding of the complexities of entrepreneurship*

After the analysis of the interviews the major benefits of EE which participants perceived, emerged as; increased knowledge of business accounting, self-improvement in the form of personal self-confidence, learning about the hardness of entrepreneurship, transformation of business ideas to more viable ones and the obtaining of a new perspective about entrepreneurship. This result is consistent with the findings of Kirkwood, Dwyer, and Gray (2014), which also found an increase in the confidence, problem solving, and knowledge of entrepreneurship of the EE program students. Before taking this EE program, participants had a perception of entrepreneurship as a promising career, which will bring more freedom and money with less effort. However, after the EE program participants come to know that entrepreneurship requires a lot of hard work. Depending on this finding, it is

possible to say that EE has an important impact on the participants in the form of a better understanding of the complexities of starting a new business, which helped the participants realize that to start and manage a new business is a hard task.

*Finding 3: Participants suggestions to enrich the program*

The interviewees of the study are in unison about their suggestion for inclusion of courses regarding creative idea generation and innovative thinking. When other suggestions of the participants are considered, suggested areas are; specific mentoring about the personal business ideas, invitation of real entrepreneurs for lectures and information about entrepreneurial support from institutions.

**Table 8:** Brief findings and suggestions about EE

	<i>I-1</i>	<i>I-2</i>	<i>I-3</i>	<i>I-4</i>	<i>I-5</i>	<i>I-6</i>	<i>I-7</i>
<b>Benefits about EE Program</b>	<i>Better understanding of business plan template, Accounting literacy</i>	<i>Self-improvement, Leadership, Planning</i>	<i>Accounting literacy, Keeping the idea hot</i>	<i>Self-improvement, To know the hardness of Entrepreneurship, Self-confidence</i>	<i>Hardness of Entrepreneurship</i>	<i>Accounting literacy, Strategic Approach</i>	<i>Theory of entrepreneurship, Understand Hardness of Entrepreneurship</i>
<b>Suggestion on EE Program</b>	<i>Meeting with Related Institutions  "Education Program could be more rich, for example if Institutions could give information about their funding and grants."</i>	<i>"It was a good program, but can be more beneficial if it would taught us how to get creative."</i>	<i>Mentoring, Idea generation  "Mentoring would be more fruitful I think" I don't think that education can be fruitful to anyone in terms of idea generation."</i>	<i>"I can't gain the things that I gain in from this program."</i>	<i>Invitation of Entrepreneurs, Information about Patent  "Program was so theoretical, entrepreneurs from industry can be invited."  Patent process should be presented deeply which is important for my Project."</i>	<i>Idea generation  "It is not possible to go out from the classes with an business idea if you have not already. I think it is not so beneficial in this way."</i>	<i>"I wanted to learn theoretical side and it was good for me, because I know the practical side."</i>

## 6. Discussion

The quantitative results of our study showed no significant impact of education on the socio-cognitive factors but found a negative impact on the entrepreneurial intentions of EE participants. Similarly, results showed no significant impact of EE on the psychological attributes of the participants of EE, however we noticed a decrease in the internal locus of control of control group. One significant result of our study showed that after participation in EE the entrepreneurial intentions of the participants had decreased. This result is contrary to the majority of studies which found a positive impact of entrepreneurship education (e.g. Mitra and Matlay 2004; Neck and Greene 2011; Souitaris, Zerbinati and Al-Laham, 2007), however it supported the view of rare studies which found that EE program does not have intended impact (Oosterbeek, van Praag and Ijsselstein 2010; Von Graevenitz, Harhoff and Weber, 2010). In the context of our study this negative change can be attributed to the content of entrepreneurship education. The content is directed towards imparting the technical education for the start-ups and is not aimed to enhance the entrepreneurial attractiveness of the participants.

This finding may also be related to the fact that participants have obtained more realistic perspectives both on themselves as well as on what it takes to be an entrepreneur (Oosterbeek, van Praag, M and Ijsselstein 2010). Students get to know that entrepreneurship is not just a *dream career* but really requires a lot of hard work and they need to be equipped with the essential technical tools necessary for entrepreneurial careers. This *reality check* may play a role in decreasing the entrepreneurial intention of EE participants. Since the majority of EE participants are first-year students, therefore entrepreneurial awareness education is more appropriate for the group of students at the beginning of their bachelor education.

When we analyzed the t-test for the psychological attributes of our data we did not find any difference between the EE participants and control group except for a significant decrease in the internal locus of control of the control group. This result may be explained by the reason that business management education is more focused on the preparation of managerial jobs rather than entrepreneurial careers.

Our study further analyzed the data for measuring the differences between EE participants and control group. Results showed that there is a significant difference at T2 in the perceived desirability and subjective norm of EE participants as compared to control group. This shows that though entrepreneurship education has insignificant impact on the EE participants, but when we compare EE participants with the control group, EE has a positive influence on the EE participants as compared to the control group.

Gender is also an important factor regarding the relationship between attitude toward entrepreneurship and career planning (Bagheri and Pihie 2014; Cardoso and Moreira 2009). Our results regarding gender showed that the entrepreneurial intention, ESE and achievement motivation of males are significantly higher at T2 as compared to females. This result reflected the masculine nature of Turkish society. Turkish society being a masculine society associated entrepreneurship as a male job (Hofstede 1980). Therefore participation in the EE program does not have a positive impact on the entrepreneurial perceptions of female participants; on the contrary it enhances the female participants' perception of entrepreneurship as a male job.

The findings of the qualitative study demonstrated that working with salary is perceived as a guaranteed career, while self-employment is seen as a desired future career only after securing certain financial and social guarantees of life. This fact can be explained in two ways: first, living in high uncertainty avoidance Turkish culture (Hofstede 1980) it is not easy to change this perception about entrepreneurship by EE in the short term, but possible in long term. Secondly, feeling not ready in terms of the required skills and resources could be related to low entrepreneurial self-efficacy. Further, embedded in a highly collectivistic Turkish society students decisions are greatly influenced by their family and friends. This collectivistic nature of decision-making leads to a less internal locus of control and low achievement motivation. Thus, the EE program has no impact on its participants, which are embedded in highly collectivistic social structures.

The EE program in our research is focused on technical skills and how to obtain the necessary financial support, however there is a lack of courses on creativity and idea generation. This strategy-focused education allowed the transformation of business ideas into more viable ones, but did not equip the participants with the cognitive skills and psychological attributes which will help to generate creative and innovative ideas. Thus, it is possible to say that EE is directly focused on the exploitative stage of entrepreneurship (Shane 2000). However, EE with a focus on the exploratory stage may prove to be more beneficial for entrepreneurial and innovative ventures. It shows that EE should balance the courses focused on enhancing the psychosocial abilities and the strategic entrepreneurship (Ireland and Webb 2007).

## 7. Theoretical and practical implications

There are rare studies in literature that used both the socio-cognitive and trait approaches for the measurement of impact of EE. Our study, by integrating the socio-cognitive and trait approach, has provided a robust model for future research in this realm of research. Similarly, by combining quantitative and qualitative research methods in a single study this study provides the case for a hybrid methodology as a more appropriate approach for future studies in measuring the impact of EE.

From the policymakers and practical perspective our study showed that EE programs should not be of a 'cocktail' nature, which contains something for everyone. Instead programs should be offered and conducted according to the needs and backgrounds of the participants. The focus of EE for high school and new university-entrants should be on entrepreneurial awareness, while for persons with a background of entrepreneurial experience the focus of EE should be on start-up education.

Another important recommendation of the study is that EE courses and workshops shall have a balance of creativity and technical knowledge aspects of entrepreneurship. This will be more helpful in creating entrepreneurial awareness and stimulating entrepreneurial careers.

The Turkish government is vigorously pursuing policies for the promotion of entrepreneurial culture through the promotion of entrepreneurship education. This research study provides a critical reflection for the Turkish policymakers. In the study, it was found that Turkish students are highly inclined towards EE, however the benefits of EE are insignificant. This shows that given the economic, social, cultural, and religious texture of Turkey's indigenous society policymakers need to devise EE policies and programs that are coherent and consistent with the indigenous culture and needs. It entails the review of the current state of EE by emphasizing that one needs to comprehend the target audiences for EE, their educational objectives and learning styles, and the types of content to be covered for each audience, and which specific pedagogical methods will most effectively meet their educational goals (Sowmya, Majumdar and Gallant, 2010).

## 9. Conclusion, limitations and future research

The results of our study indicates that EE has a minimal or non-significant impact on the socio-cognitive factors i.e. self-efficacy, entrepreneurial self-efficacy, subjective norm and entrepreneurial intention. Our study further reveals that psychological attributes i.e. internal locus of control, decreased at the end of the EE program, while results showed no impact of EE on the achievement motivation. Our study concludes that the desired positive impact of EE depends on the right combination of course contents. Moreover, EE programs should be developed according to the social and cultural contexts of the participants, such programs are more likely to enhance the likeliness of the participants to pursue their entrepreneurial careers. Furthermore, national culture is vital for the development of entrepreneurial careers therefore EE programs should focus on entrepreneurial awareness education in the national contexts, where entrepreneurship is not a desired career due to negative cultural perceptions about entrepreneurship.

Like any other academic study our study has certain limitations. A major limitation of our quantitative study is that the size of our sample is small, which questions the external validity of the study. To overcome this potential limitation we used the pre-test post-test design and control group for our study. Another limitation of this study's quantitative method is that the analyses presented in this paper all rely on cross-sectional data, which limits the conclusions that can be made, as only associations have been identified, not causal relationships. In order to increase the robustness of the findings longitudinal data is needed.

Future studies using national or transnational data may bring more clarity and better understanding of the impact of EE. Further, by adopting qualitative research methods future studies may provide more detailed analysis of the content, design, delivery and impact of EE programs. The results of this study suggest that in the context of emerging economies, where economic, cultural and social structures are different, the desire, motivation and perception of the students about EE programs differ from those in developed nations. Thus, research in the context of emerging economies merits further in-depth research.

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