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**Do Proximal Social Context and Entrepreneurship  
Education shape Entrepreneurial Intention? A Social  
Cognitive Theory Approach in the context of Greece**

**Supervisor:** Irini Voudouris - Professor

Υποβληθείσα ως μέρος των απαιτήσεων για την απόκτηση  
Μεταπτυχιακού Διπλώματος (MSc) στη Διοικητική Επιστήμη και Τεχνολογία

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### Βεβαίωση εκπόνησης Διπλωματικής εργασίας

«Δηλώνω υπεύθυνα ότι η συγκεκριμένη μεταπτυχιακή εργασία για τη λήψη του μεταπτυχιακού τίτλου σπουδών του ΠΜΣ στη Διοικητική Επιστήμη και Τεχνολογία του Τμήματος Διοικητικής Επιστήμης και Τεχνολογίας του Οικονομικού Πανεπιστημίου Αθηνών έχει συγγραφεί από εμένα προσωπικά και δεν έχει υποβληθεί ούτε έχει εγκριθεί στο πλαίσιο κάποιου άλλου μεταπτυχιακού ή προπτυχιακού τίτλου σπουδών στην Ελλάδα ή το εξωτερικό. Η εργασία αυτή έχοντας εκπονηθεί από εμένα, αντιπροσωπεύει τις προσωπικές μου απόψεις επί του θέματος. Οι πηγές στις οποίες ανέτρεξα για την εκπόνηση της συγκεκριμένης διπλωματικής αναφέρονται στο σύνολό τους, δίνοντας πλήρεις αναφορές στους συγγραφείς, συμπεριλαμβανομένων και των πηγών που ενδεχομένως χρησιμοποιήθηκαν από το διαδίκτυο».

(Υπογραφή)

*Konstantinos Kamposos*  
.....

<ΚΑΜΠΟΣΟΣ ΚΩΝΣΤΑΝΤΙΝΟΣ>

Φοιτητής MSc στη Διοικητική Επιστήμη και Τεχνολογία



## Περίληψη

**Στόχος:** Αυτή η διπλωματική εργασία έχει ως στόχο να απαντήσει στα ακόλουθα ερωτήματα στο πλαίσιο της Ελλάδας: «Το εγγύς κοινωνικό πλαίσιο διαμορφώνει την επιχειρηματική πρόθεση ενός ατόμου;» και «Η επιχειρηματική αυτο-αποτελεσματικότητα διοχετεύει την επίδραση της επιχειρηματικής εκπαίδευσης στις επιχειρηματικές προθέσεις;». Στη βιβλιογραφία της κοινωνικής ψυχολογίας, οι προθέσεις είναι ο καλύτερος ενιαίος προγνωστικός παράγοντας της συμπεριφοράς, οπότε η αποκάλυψη των πηγών της πρόθεσης θα μας επιτρέψει να κατανοήσουμε πώς θα μπορούσαμε να δώσουμε έναυσμα για μια συμπεριφορά. Αυτή η ιδέα από τον χώρο της κοινωνικής ψυχολογίας εφαρμόζεται και στις επιχειρηματικές προθέσεις και συμπεριφορές. Προηγούμενες έρευνες δείχνουν ότι η σχέση μεταξύ της επιχειρηματικής εκπαίδευσης και των επιχειρηματικών προθέσεων είναι αδύναμη και ασήμαντη αφού ελέγξουμε για τις προ-εκπαιδευτικές προθέσεις. Επίσης, σε πρόσφατες μελέτες, οι μελετητές προτείνουν να δοθεί περαιτέρω προσοχή στον τρόπο με τον οποίο το κοινωνικό κεφάλαιο και οι κοινωνικές νόρμες επηρεάζουν τις επιχειρηματικές προθέσεις των ατόμων. Για τους λόγους αυτούς, σε αυτή τη διπλωματική εργασία, ελέγχουμε δύο υποθέσεις στο πλαίσιο της Ελλάδας. Πρώτον, κατά πόσον η επιχειρηματική αυτο-αποτελεσματικότητα μεσολαβεί στην επίδραση της επιχειρηματικής εκπαίδευσης στις επιχειρηματικές προθέσεις και, δεύτερον, κατά πόσον η γνωριμία με έναν εκκολαπτόμενο επιχειρηματία επηρεάζει θετικά τις επιχειρηματικές προθέσεις των ατόμων.

**Μεθοδολογία:** Πραγματοποιήσαμε μια «βολική» (convenient) διαδικασία δειγματοληψίας, ενώ το δείγμα μας αποτελείται από άτομα με τουλάχιστον ένα έτος επαγγελματικής εμπειρίας που έχουν σπουδάσει στην Ελλάδα. Η συλλογή δεδομένων πραγματοποιήθηκε μέσω δομημένου ψηφιακού ερωτηματολογίου. Εφαρμόσαμε την πιο πρόσφατη αναλυτική διαδικασία στην ανάλυση αιτιώδους διαμεσολάβησης για την ποσοτική μας ανάλυση. Εκτός από την ανάλυση ευαισθησίας των αποτελεσμάτων μας, πραγματοποιήσαμε κι έναν έλεγχο ευρωστίας μέσω της μοντελοποίησης δομικών εξισώσεων με τη μέθοδο των μερικών ελάχιστων τετραγώνων.

**Αποτελέσματα:** Τα αποτελέσματά μας δεν παρέχουν επαρκείς αποδείξεις ότι η γνώση ενός εκκολαπτόμενου επιχειρηματία επηρεάζει τις επιχειρηματικές προθέσεις ενός ατόμου. Ωστόσο, επαληθεύσαμε την υπόθεση ότι η αιτιώδης επίδραση της επιχειρηματικής εκπαίδευσης στην επιχειρηματική πρόθεση μέσω της επιχειρηματικής αυτο-αποτελεσματικότητας είναι θετική. Ωστόσο, η ανάλυση ευαισθησίας μας έδειξε ότι το αποτέλεσμα της διαμεσολάβησης δεν είναι αρκετά ισχυρό. Τα αποτελέσματα που προέκυψαν από την μοντελοποίηση δομικών εξισώσεων με τη μέθοδο των μερικών ελάχιστων τετραγώνων ήταν τα ίδια.

**Θεωρητικές Επιπτώσεις:** Χρειάζεται περαιτέρω διερεύνηση η σχέση μεταξύ εγγύτατου κοινωνικού περιβάλλοντος και επιχειρηματικών προθέσεων στην Ελλάδα. Στη διερεύνηση προτείνεται να συμπεριληφθούν τα κοινωνικά και πολιτισμικά χαρακτηριστικά της Ελλάδας.

**Πρακτικές Επιπτώσεις:** Τα ευρήματά μας δείχνουν ότι οι υπεύθυνοι χάραξης πολιτικής και τα ελληνικά πανεπιστήμια θα μπορούσαν να καταστήσουν τις προσπάθειές τους για την ενίσχυση της επιχειρηματικής δραστηριότητας πιο αποτελεσματικές, εστιάζοντας στην ανάπτυξη της αυτο-αποτελεσματικότητας των φοιτητών. Αντιθέτως, δεδομένου ότι η επιχειρηματική εκπαίδευση που προσανατολίζεται στη μετάδοση γνώσης σχετική με την επιχειρηματικότητα δείχνει να επηρεάζει αρνητικά τον σχηματισμό επιχειρηματικών προθέσεων, χρειάζεται ανασχεδιασμός των προγραμμάτων επιχειρηματικής εκπαίδευσης στην Ελλάδα.

**Περιορισμοί:** Η μελέτη μας είναι μεθοδολογικά περιορισμένη γιατί για να απομονώσουμε την άμεση επίδραση της επιχειρηματικής εκπαίδευσης στην επιχειρηματική πρόθεση, θα έπρεπε να είχαμε μετρήσει την επιχειρηματική πρόθεση πριν και μετά την



εκπαίδευση της επιχειρηματικότητας για συγκεκριμένα εκπαιδευτικά προγράμματα επιχειρηματικότητας. Επιπλέον, το δείγμα μας διαφέρει από τον επικρατών τύπο δείγματος στον ερευνητικό χώρο της επιχειρηματικότητας ο οποίος απαρτίζεται από νέους προπτυχιακούς φοιτητές σε σχολές Οικονομικών και Διοίκησης Επιχειρήσεων. Για τον λόγο αυτό θεωρούμε πως η σύγκριση των αποτελεσμάτων μας με αυτά άλλων ερευνών χρήζει προσοχής.

**Λέξεις Κλειδιά:** <<Επιχειρηματική Εκπαίδευση, Επιχειρηματική Αυτό-Αποτελεσματικότητα, Κοινωνικό Πλαίσιο, Επιχειρηματική Πρόθεση>>



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## Abstract

**Purpose:** This dissertation aims to answer the following questions in the context of Greece: "Does proximal social context shape an individual's entrepreneurial intent?" and "Does entrepreneurial self-efficacy mediate the effect of entrepreneurship education on entrepreneurial intent?". In the social psychology literature, intentions are the best single predictor of behavior, so uncovering the sources of intention enables us to understand how behavior could be triggered. This notion has been applied to entrepreneurial intentions and behavior. Past research shows that the relationship between entrepreneurship education and entrepreneurial intentions is weak and insignificant after controlling for pre-education intentions. Additionally, in recent studies, scholars suggest that further attention should be given to how social capital and norms influence individuals' entrepreneurial intentions. For these reasons, we test two hypotheses in the context of Greece. Firstly, whether entrepreneurial self-efficacy mediates the effect of entrepreneurship education on entrepreneurial intentions, and secondly, whether knowing a nascent entrepreneur influences positively individuals' entrepreneurial intentions.

**Methodology:** We performed a convenient sampling procedure, and our sample consists of individuals with at least one year of professional experience who have studied in Greece. The data collection was performed through a structured digital questionnaire. We employed the most recent analytical procedure in causal mediation analysis for our quantitative analysis. Apart from the sensitivity analysis of our results, we performed a robustness check through partial least squares structural equation modeling.

**Findings:** Our results could not provide sufficient proof that knowing a nascent entrepreneur influences an individual's entrepreneurial intent. However, we validated that the causal mediation effect of entrepreneurship education on entrepreneurial intent through entrepreneurial self-efficacy is positive. Nevertheless, our sensitivity analysis indicated that the mediation effect is not robust enough. Our results were the same through partial least squares structural equation modeling.

**Theoretical Implications:** The relationship between the proximal social context and entrepreneurial intentions in Greece needs further investigation. It is proposed to include the social and cultural characteristics of Greece in the research.

**Practical Implications:** Our findings suggest that policymakers and Greek universities could make their efforts towards boosting entrepreneurial activity more effective by focusing on developing students' self-efficacy. On the contrary, since entrepreneurship education focused on the transfer of knowledge related to entrepreneurship seems to negatively affect the formation of entrepreneurial intentions, there is a need to redesign business education programs in Greece.

**Limitations:** Our study is methodologically limited because to isolate the direct effect of entrepreneurship education on entrepreneurial intent, we should have measured entrepreneurial intent before and after entrepreneurship education for specific entrepreneurship education programs. Furthermore, our sample is different from the dominant kind of sample in entrepreneurship research, consisting of young undergraduate students with Economics and Management degrees. Therefore, we believe that comparing our results with those of other studies requires attention.



**Keywords:** <<Entrepreneurship Education, Entrepreneurial Self-Efficacy, Social Context, Entrepreneurial Intent>>



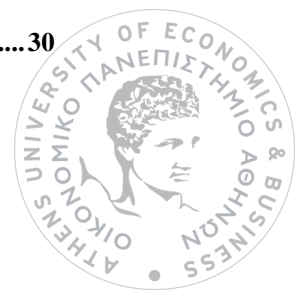


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# 1

## *Introduction*

In this study, we test whether the effect of entrepreneurship education on entrepreneurial intent is positively mediated by entrepreneurial self-efficacy and whether knowing a nascent entrepreneur serving as a proxy for proximal social context has a positive effect on entrepreneurial intent in the context of Greece. Entrepreneurial intent, in our study, is defined as the "self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future" (Thompson, 2009). Entrepreneurial self-efficacy, in simple words, is defined as the self-perceived confidence of an individual to perform entrepreneurship activities and tasks. Moreover, we refer to formal education for entrepreneurial attitudes and skills as entrepreneurship education. By proximal social context, we refer to the social norms and legitimacy that emerge from knowing a nascent entrepreneur.

Firstly, we choose to study entrepreneurial intent because it is widely accepted that the best single predictor of behavior is intention (Armitage & Conner, 2001; Sheeran, 2002; Downs and Hausenblas, 2005). Therefore, by studying the antecedents of entrepreneurial intention, we can understand the mechanisms to encourage and promote startup behavior in a society, a country, or a so-called ecosystem. Startup activity is essential and beneficial because, as economic research shows, it contributes significantly to job creation, innovation, and economic growth at the macro-level (Carree and Thurik, 2005).

Secondly, the most considerable and recent meta-analytic review of the literature about the relationship between entrepreneurship education and entrepreneurial intent (Bae, T.J. et al., 2014) concluded that the direct effect of entrepreneurship education on entrepreneurial intent is weak. Furthermore, it concludes that the exact relationship becomes insignificant when controlling for pre-education entrepreneurial intent. For this reason, we choose to study entrepreneurial self-efficacy's mediation effect between entrepreneurship education and



entrepreneurial intent instead of the direct effect. Furthermore, we study entrepreneurship education as an indirect antecedent of entrepreneurial intent because by exploring the paths through which entrepreneurship education affects entrepreneurial intent – and, therefore, probably, behavior – our policymaking efforts will become more effective.

Finally, recent advancements in entrepreneurial intent literature (Siu & Lo, 2011; Welter, 2011) suggest that we will understand how entrepreneurial intents are formed if we pay attention to the social context (Schmutzler et al., 2019). For this reason, we include in our study knowing a nascent entrepreneur. This variable serves as a proxy of social norms, legitimacy, and values in an individual's proximal social context.

Methodologically, we build our model on constructs measured at the individual level. We collected our responses through a digital questionnaire, which is the dominant study design in this area of research. Our analytical approach, causal mediation analysis (Imai et al., 2010), was performed utilizing the most recent analytical method embedded in the "mediation" package (R. Hicks, D. Tingley; 2011) in Stata/MP 17.0.

Our dissertation structure is the following; in the second section, we make a literature review and hypothesize our conceptual model. The third section contains our study's methodology (sampling technique, study design, etc.) and variable measurements, followed by section four, where we report our analytical results. Finally, in section five, we discuss our results, and in section six, we declare our study's limitations.



# 2

## *Literature Review & Theoretical Background*

### *2.1 Entrepreneurial Intent*

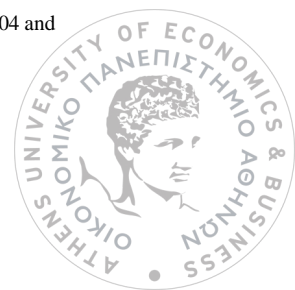
Why do some individuals intend to start their own business whereas others do not? This question has troubled scholars for decades. Entrepreneurial intentions are a cognitive state that precedes entrepreneurial action and are deeply rooted in psychological antecedents (Hindle, Klyver, & Jennings, 2009; Krueger, 2005). There are two major strands in the development of the entrepreneurial intention literature (Liñán & Fayolle, 2015). First, theoretical advances in social psychology examine intentions and behaviors in general. Fishbein and Ajzen's (1975) Theory of Reasoned Action, Ajzen's Theory of Planned Behavior (1985, 1991), and the construct of self-efficacy as one of the essential elements of Bandura's social learning theory are examples of notable contributions (1971, 1977, 1982; Wood & Bandura, 1989). The second strand of theoretical developments is entrepreneurship specific, and within this strand, various entrepreneurial intention models have emerged (Bird, 1988; Boyd & Vozikis, 1994; Shapero & Sokol, 1982; Shapero, 1984). While both strands of research have increasingly converged (Liñán & Fayolle, 2015), some scholars acknowledge that constructs related to entrepreneurial intention drivers overlap to a large extent<sup>1</sup>, others disagree.

Liñán and Fayolle (2015) performed a citation analysis<sup>2</sup> to categorize the main areas of specialization in the EI research. These, according to them, are the area of the core entrepreneurship intention model, the area of personal-level variables, the area of entrepreneurship education, the area of context and institutions, and, finally, the area of the entrepreneurial process and the intention-behavior link. Our intention is not to present in detail the research area of EI. Instead, we intend to clarify how scholars have tried to explain entrepreneurial intent, which variables consider its antecedents, which models and frameworks

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<sup>1</sup> Examples are Krueger and Brazeal (1994), Boyd and Vozikis (1994), and Kolvereid (1996a, b)

<sup>2</sup> This citation analysis was performed on a total of 409 papers that address entrepreneurial intention, published between 2004 and 2013 (inclusive)



utilize, and so on. From Liñán and Fayolle's (2015) analysis, it is clear that the prevailing theory in EI research is the Theory of Planned Behavior (TPB). The Theory of Planned Behavior contends that an individual's intention for action will be greatest when they hold a favorable attitude toward a behavior, experience strong subjective norms regarding that behavior, and anticipate that they can perform the behavior successfully. A pretty large proportion of EI literature studies the effect of personal-level variables on EI. Papers test the effect of personal traits such as extraversion, psychological variables such as risk perception (Segal et al. 2005), demographics such as gender or experience on EI. Scholars test, also for the effect of background variables such as prior family exposure to entrepreneurship (Carr and Sequeira, 2007) and previous entrepreneurial exposure (Gird and Bagraim, 2008). Into the same group fall papers that study the influence of university studies (Guerrero et al., 2008), social capital (Liñán and Santos, 2007), and gender issues (Gupta et al., 2008, 2009; Wilson et al., 2007). Another group of papers evaluates the entrepreneurship education programs' effect on intentions. Pittaway and Cope (2007) carry out a systematic literature review of entrepreneurship education literature and find that entrepreneurship education has positive results on the EI of the participants. This finding remains consistent with Tae Jun Bae et al.'s (2014) meta-analytic review findings. In addition, scholars have given importance to the role of context and institution in shaping entrepreneurial intentions. Mainly, they study the influence of regional, cultural, or institutional environments by comparing samples from different countries to spot context-related differences in the intentions of the participants (Kristiansen and Indarti, 2004; Veciana et al., 2005; De Pillis and Reardon, 2007; Engle et al. 2010). Finally, some papers go beyond EI to predict actual behavior (Kolvereid and Isaksen, 2006) and papers that study the transition from student to founding a company (Nabi et al., 2006) to identify gaps in this process that need to be addressed.

In the psychology literature, the intention is the best predictor of planned behavior, especially when that behavior is rare, difficult to observe, or involves unpredictable time lags; entrepreneurship is a typical example of such planned, intentional behavior (Bird, 1988; Katz and Gartner, 1988; Krueger and Brazeal, 1994). Entrepreneurial intentions are central to understanding entrepreneurship as they are the first step in the process of discovering, creating, and exploiting opportunities (Gartner, Shaver, Gatewood, & Katz, 1994). As a result, models of employment status choice that focus on entrepreneurial intention have piqued the interest of entrepreneurship researchers (Krueger and Carsrud, 1993; Kolvereid, 1996b). Career intention is viewed as the immediate antecedent of behavior in these models. Attitudes, in turn, determine intentions, and attitudes are influenced by "exogenous influences" such as traits and situational variables (Ajzen, 1991; Krueger et al., 2000).



Intentions have been studied as an antecedent of human behavior in the social psychology literature (Ajzen, 1991; Ajzen & Fishbein, 1977). Specifically, intentions indicate a person's readiness to perform a given behavior, and it is regarded as the immediate antecedent of behavior (Ajzen, 2002). The hypothesis that intention is the best single predictor of actual behavior is scientifically supported and robust (Armitage & Conner, 2001; Sheeran, 2002; Downs and Hausenblas, 2005). Undoubtedly, though, not all performed startup behaviors are intended by the individuals (Bhave, 1994). A few examples of such not intended startup behaviors are the hobbyists who gradually discover that their hobby can be commercialized and the startup through effectuation (Sarasvathy, 2001), in which individuals who never had the goal to create a venture eventually create ventures. However, even in such cases, individuals realize and start to exploit the business opportunity with the purposeful intention that precipitates action (Thompson, 2009).

As "good science has to begin with good definitions" (Bygrave and Hofer, 1992), entrepreneurial intent in this study is operationalized as per Thompson's paper "Individual Entrepreneurial Intent: Construct Clarification and Development of an Internationally Reliable Metric 2009". Thompson distinguishes entrepreneurial intent from previously ambiguous and vague operationalizations, such as entrepreneurial proclivity (Bruyat and Julien, 2001; Reynolds and Miller, 1992; Thomas and Mueller, 2000; Vivarelli, 2004), business ownership, and nascent entrepreneurs. According to Edmund R. Thompson, a robust definition of Individual Entrepreneurial Intent is "a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future ." That point in the future might be imminent or indeterminate and may never be reached. That entrepreneurial intent does not necessarily lead to entrepreneurial activity, and entrepreneurial intent intensity may vary from person to person (Thompson 2009). It is also theorized that individual entrepreneurial intent may differ in degree and intensity over time and from person to person. It is explicitly acknowledged that intention does not always imply actual behavior.

## ***2.2 Entrepreneurial Self-Efficacy***

Entrepreneurial self-efficacy is an extensively studied and important construct of Bandura's social cognitive theory. Bandura defines self-efficacy as the individuals' estimate of their "capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives" (Wood & Bandura, 1989, p. 364). Self-efficacy, therefore, reflects the individual's thoughts regarding the skills and abilities that are considered essential to task performance and the individual's belief that they will be able to convert those abilities and skills to the desired outcome (Bandura 1997). Self-efficacy is strongly correlated



with effort, perseverance, resilience, serenity, and optimism in the face of adversity. In other words, as Henry Ford said, "Whether you think you can or you cannot, you are usually right".

Scholars' debate over which construct between self-efficacy and entrepreneurial self-efficacy is suitable in entrepreneurship research is inconclusive (McGee et al., 2009; Schmutzler et al., 2019). In this study, we employ entrepreneurial self-efficacy following Bandura's approach in that self-efficacy should be focused on a specific context and activity domain (Bandura, 1977, 1989, 1997; Wilson et al., 2007). This approach implies that a person can have high self-efficacy in a specific domain or area but low self-efficacy in another. Therefore, entrepreneurial self-efficacy is defined as an individual's confidence in successfully performing entrepreneurial roles and tasks (Zhao et al. 2005).

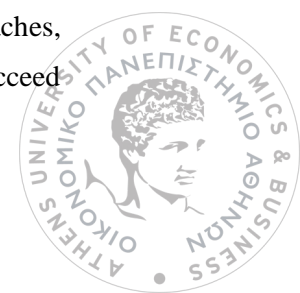
It is essential to mention that scholars distinguish entrepreneurial self-efficacy based on conceptual reasons and their effect on entrepreneurial intent from the conceptually related locus of control and perceived behavioral control (Bandura, 1992; Kautonen et al., 2013). The former is a generalized construct that refers to individuals' overall belief in the power of their actions across various situations (Boyd & Vozikis, 1994; Wilson et al., 2007). The latter refers to an individual's belief about being able to execute the planned behavior and the perception that the behavior is within the individual's control (Ajzen, 2002; Conner & Armitage, 1998).

According to Bandura's social cognitive theory, self-efficacy can be influenced through four processes, (1) enactive mastery, (2) vicarious experience, (3) verbal persuasion, and (4) emotional arousal (Bandura, 1982, 1986). In other words, self-efficacy – and therefore entrepreneurial self-efficacy – can be influenced by "exogenous influence" (Bandura, 1986).

Enactive mastery, mastery experiences, or performance outcomes can be used interchangeably to describe the experiences people gain when they take on a new challenge and are successful at doing so. According to Bandura (1977), enactive mastery is "the most influential source of efficacy information because they provide the most authentic evidence of whether one can muster whatever it takes to succeed ." Practicing is one of the most effective ways to learn a new skill or improve one's performance in a specific activity. In most cases, part of the reason this works so well is that people unknowingly teach themselves that they are capable of learning new skills throughout the process.

Vicarious experiences occur when people observe others completing a task successfully. Observing these positive role models succeeding through sustained efforts raises their beliefs about their capabilities to master the activities needed to succeed in that area. Bandura (1977) posits that "Seeing people similar to oneself succeed by sustained effort raises observers' beliefs that they too possess the capabilities to master comparable activities to succeed."

Verbal persuasion occurs when influential people, such as teachers, managers, coaches, and role models, strengthen people's beliefs about having the capabilities and skills to succeed





in the activity area by encouraging and giving positive verbal feedback. When people are persuaded that they possess the capabilities to master a particular activity, they will be more likely to engage, put in the effort and sustain towards potential obstacles.

Emotional arousal is the emotional and psychological state of people. The notion is that this state can influence how people feel about their capabilities in a particular situation. For example, people struggling with depression or anxiety will find it more challenging to build self-efficacy. On the other hand, when people feel well and are in a good psychological state, it is much easier to build self-efficacy in a specific activity. On top of this, as Bandura (1977) states, "it is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. People who have a high sense of efficacy are likely to view their state of affective arousal as an energizing facilitator of performance. In contrast, those beset by self-doubts regard their arousal as a debilitator."

The positive relationship between entrepreneurial self-efficacy and intentions is broadly confirmed in empirical research (Barbosa et al., 2007; Boyd & Vozikis, 1994; Chen et al., 1998; Douglas, 2013; Fitzsimmons & Douglas, 2011; Sequeira et al., 2007; Zhao et al., 2005) and is self-evident today (Schmutzler et al., 2019). Entrepreneurial self-efficacy is defined as an individual's confidence in successfully performing entrepreneurial roles and tasks (Chen et al., 1998). Individuals with higher entrepreneurial self-efficacy demonstrate higher entrepreneurial intent (Chen et al., 1998; DeNoble et al., 1999; Krueger, Reilly, & Carsrud, 2000; Scott & Twomey, 1988; Segal, Borgia, & Schoenfeld, 2002; Wang, Wong, & Lu, 2002). We, therefore, form the following hypothesis.

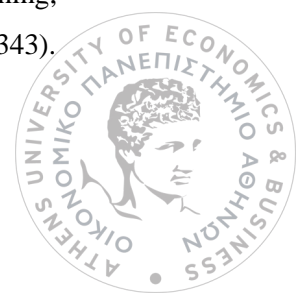
Hypothesis 1: Entrepreneurial self-efficacy will positively affect entrepreneurial intent.

## ***2.3 Entrepreneurship Education, Entrepreneurial Self-***

### ***Efficacy & Entrepreneurial Intent***

Substantial light has been shed upon the relationship between entrepreneurship education and entrepreneurial intent. In this area of research, there have been identified two theoretical perspectives that argue that entrepreneurship education is positively related to entrepreneurial intentions: (1) human capital theory (Becker, 1975) and (2) entrepreneurial self-efficacy (Chen et al., 1998).

First, entrepreneurship scholars have identified human capital as a predictor of entrepreneurial intentions (Davidsson & Honig, 2003). Human capital is defined as "the skills and knowledge that individuals acquire through investments in schooling, on-the-job training, and other types of experience" (Becker; Unger, Rauch, Frese, & Rosenbusch, 2011, p. 343).

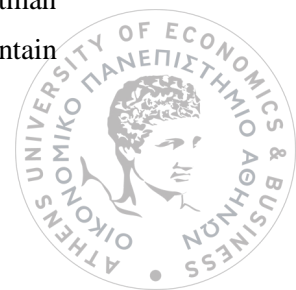


Entrepreneurship education can shape a student's attitudes and intentions and the formation of a new company (Liñán, 2008). According to Martin et al. (2013), there is a statistically significant relationship between entrepreneurship education and human capital outcomes such as entrepreneurship-related knowledge and skills ( $rw = .237$ ), a positive perception of entrepreneurship ( $rw = .109$ ), and intentions ( $rw = .137$ ).

Second, entrepreneurship education is associated with entrepreneurial self-efficacy, which may increase entrepreneurial intentions (Wilson et al., 2007; Zhao et al., 2005; Chen, 2010). Also, provided that self-efficacy across domains is not a static trait but instead can be changed (Hollenbeck & Hall, 2004), entrepreneurship education could enhance entrepreneurial self-efficacy because it is associated with four of its determinants, which are (1) enactive mastery, (2) vicarious experience, (3) verbal persuasion, and (4) emotional arousal (Bandura, 1982, 1986). Chen (2010) found that entrepreneurial self-efficacy was a positive mediator of the relationship between entrepreneurship education and entrepreneurial intentions.

Entrepreneurship education consists of "any pedagogical program or process of education for entrepreneurial attitudes and skills" (Fayolle et al., 2006b, p. 702). Tae Jun Bae et al. (2014) performed a thorough meta-analytic review (73 studies with a total sample size of 37,285 individuals) to shed light on the relationship between entrepreneurship education and entrepreneurial intent. This study considered entrepreneurship education programs that targeted students who had not decided yet which career to pursue or students who had no experience starting their own business before. The correlation between these two constructs resulted from Tae Jun Bae's et al. (2014) meta-analytic review was significant but small. However, the same relationship was not significant when they controlled for pre-education entrepreneurial intents.

For this reason, in this study, we follow the second strand of research; we hypothesize that entrepreneurial self-efficacy positively mediates the relationship between entrepreneurship education and entrepreneurial intent (Zhao et al., 2005; Chen, 2010). For example, programs that expose students to business exercises, best business case competitions, and other activities closely related to actual entrepreneurial activities promote enactive mastery of the students. Enactive mastery, in simple words, "learning by doing," is one of the primary determinants of self-confidence in performing future tasks that are perceived to be similar or related (Cox et al., 2002). Guest entrepreneurs and startup founders typically summoned in programs' events consist of role models to the students and therefore help vicarious learning to occur. Moreover, social persuasion is employed by instructors and professors when they positively encourage and give feedback on students' work and when they mentor students regarding their career goals. Eventually, students' exposure to successful entrepreneur cases will help them develop their psychological coping strategies (Zhao et al. 2005). According to Stumpf, Brief, & Hartman (1987), psychological coping strategies in a career path context may help individuals maintain



motivation and control work or career-related anxiety, leading to higher expectations of success. These good practices and embodiments of entrepreneurship education will most probably lead to a positive effect on self-perception of one's abilities, effort, and therefore performance over entrepreneurship tasks and activities, and hence on entrepreneurial self-efficacy.

Hypothesis 2: Entrepreneurship education will positively affect entrepreneurial self-efficacy.

Hypothesis 3: Entrepreneurship education will positively affect entrepreneurial intent.

Hypothesis 4: Entrepreneurial self-efficacy will positively mediate the effect of entrepreneurship education on entrepreneurial intent.

## ***2.4 Social context, Entrepreneurial Self-Efficacy, and***

### ***Entrepreneurial Intent***

Recent advancements in entrepreneurial intent literature (Siu & Lo, 2011; Welter, 2011), elaborating on the work of Shapero & Sokol (1982), suggest that we will understand how entrepreneurial intents are formed if we pay attention to the interaction between their individual (micro) and contextual (macro) antecedents (Schmutzler et al., 2019). A significant challenge in examining individual behavior is to uncover how context affects it (Thornton, Ribeiro-Soriano, & Urbano, 2011; Welter, 2011). Undoubtedly, during the last years, there has been a call for contextualization of entrepreneurship research supported by the notion that social cognitions regarding career choice (Lent, Brown, & Hackett, 2000) and entrepreneurial intent (Siu & Lo, 2011) are affected by context (Schmutzler et al., 2019). Welter (2011), inspired by Mowday and Sutton (1993), approaches the latter challenge by employing theoretical constructs related to the proximate social interactions and to the distal political and cultural systems. On this theoretical basis, Schmutzler et al. (2019) contend that entrepreneurial intentions are "properly studied only when we account for the multiple interactions among the individual predisposition and the proximate and distal context."

Entrepreneurship is perceived as a social phenomenon, and the procedure of creating a business venture is deeply influenced by social interactions (Newbert & Tornikoski, 2011, 2012). Scholars whose research is rooted in these notions agree that (potential) entrepreneurs can benefit from their proximate social environment by accessing tangible and intangible resources (Hoang & Yi, 2015). Some tangible resources could be information, knowledge, skills, advice, and even financial resources. These resources could help (potential) entrepreneurs in growing (Rindova et al., 2012) and in internationalizing (Al-Laham & Souitaris, 2008; Tang, 2011) their ventures. They could also enable them to recognize



entrepreneurial opportunities (Anderson et al., 2007; Ozgen & Baron, 2007). On the other hand, emotional support to overcome adversities (Brüderl & Preisendörfer, 1998), facilitation of persistence (Gimeno et al., 1997), and creation of trust (Aldrich & Zimmer, 1986) are great examples of intangible resources that emerge from social interaction. Social norms and legitimacy are established in this context, forming a prism that influences one's entrepreneurial intentions (Schmutzler et al., 2019).

Kandori (1992) concluded that social norms – defined as the unwritten rules of conduct of a group (Hechter & Opp, 2001) – determine the opportunity cost for specific behavior and define sanctions for deviating from it within a particular community. Social norms are robustly associated with individuals' intentions (Kautonen et al., 2013). Moreover, social legitimacy is understood as one's perception that a specific activity or behavior is "desirable, proper, or appropriate" (Suchman, 1995, p. 574). According to Aldrich & Zimmer (1986) and Zimmerman & Zeitz (2002), social legitimacy can be acquired through social networks. Furthermore, social networks facilitate the appearance of social norms (Portes, 1998).

Schmutzler et al. (2019) utilize the concepts of social norms and social legitimacy to evaluate the impact of proximate nascent entrepreneurs on entrepreneurial intentions. Schmutzler et al.'s (2019) theorization is mainly based on the argument that transmission of entrepreneurial values, norms, and legitimacy comes with exposure to peers (Kacperczyk, 2013). This argument is based on the notion that one's interest to become an entrepreneur is influenced by the social status of entrepreneurship (Begley & Tan, 2001) and by the recognition of entrepreneurship as an acceptable career path (Busenitz et al., 2000).

In sum, we theorize that social norms and legitimacy that emerge from knowing a nascent entrepreneur influence one's perceived social value of entrepreneurship activity. Etzioni (1987) suggests that "the extent to which entrepreneurship is legitimate, the demand for it is higher; the supply of entrepreneurship is higher, and more resources are allocated to the entrepreneurial function" (p. 175). Therefore, we hypothesize that

Hypothesis 5: Knowing a nascent entrepreneur will be positively related to an individual's entrepreneurial intent.



## 2.5 Visualization of Theorized Model

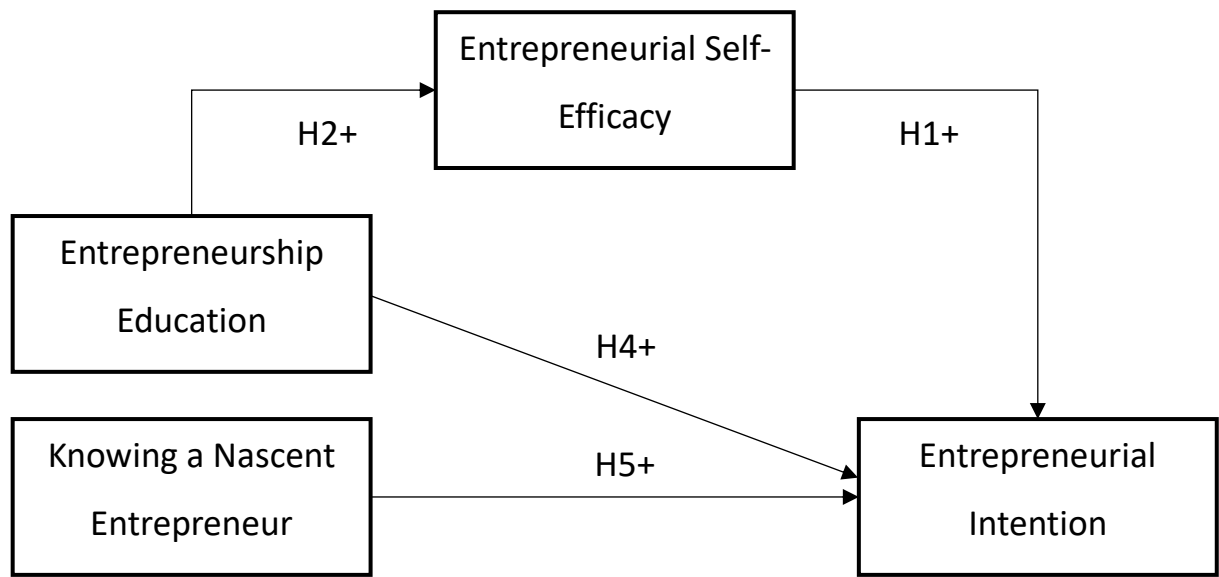


Figure 1: Theorized Model

# 3

## *Methodology*

### ***3.1 Research Method, Design, Data Collection, Sampling***

We collected our data via a digital questionnaire; particularly, we forwarded a questionnaire created in Google Forms to participants via email. Of the 91 questionnaires sent, 73 were returned, resulting in a response rate of approximately 80%. The sample consists of individuals with at least one year of professional experience who have studied for at least one degree in Greece. More precisely, the sample consists of 32 (43.8%) male and 41 (56.2%) female, while 50 (68.5%) respondents of our sample belong to the 20-34 age group followed by 15 (20.5%) in 35-44 and 8 (11%) in 45-54. We designed the questionnaire to contain multiple-choice type questions. Nonprobability sampling was applied, particularly convenience sampling (also known as availability sampling). The quantitative data analysis was conducted utilizing Stata/MP 17.0 statistical package. Fieldwork was carried out between December 2021 and January 2022.

### ***3.2 Measures***

#### ***3.2.1 Entrepreneurial Intent***

Entrepreneurial intent was measured utilizing Individual Entrepreneurial Intent Scale (Thompson, 2009). We asked respondents to answer the following question

"Thinking of yourself, how true or untrue is it that you:" for the following items:

1. Intend to set up a company in the future
2. Plan your future carefully\*
3. Read business newspapers\*
4. Never search for business startup opportunities (R)
5. Read financial planning books\*
6. Are saving money to start a business
7. Do not read books on how to set up a firm (R)



8. Plan your finances carefully\*
9. Have no plans to launch your own business (R)
10. Spend time learning about starting a firm

Notes: Items appeared as a single block in the order given. Those marked with an asterisk are distracter items that act as red herrings and are not included in scale analyses. Items marked (R) are reverse coded in scale analyses. Interval measure runs 1 = very untrue, 2 = untrue, 3 = slightly untrue, 4 = slightly true, 5 = true, 6 = very true. Scale reliability coefficient: Cronbach's alpha = 0.8292. Variable name: EI\_FINAL

### ***3.2.2 Entrepreneurship Education***

We followed Zhao et al.'s (2005) approach to measuring Entrepreneurship Education. We asked individuals to declare their self-perception about how much they have learned regarding typical areas of entrepreneurship. Each area corresponds to one item: 1) opportunity recognition, 2) opportunity evaluation, 3) starting a business, and 4) corporate entrepreneurship. We used a 5-point Likert scale (1: Very Little to 5: A Great Deal) for each item. The overall score was obtained by averaging the responses to these four items. Scale reliability coefficient: Cronbach's alpha = 0.8052. Variable name: EEd\_FINAL

### ***3.2.3 Entrepreneurial Self-Efficacy***

Entrepreneurship self-efficacy was measured by averaging four items asking about the respondent's self-perception regarding their confidence level in performing entrepreneurial activities and tasks (Zhao et al., 2005). Specifically, we asked respondents to declare how confident they are in:

1. successfully identifying new business opportunities,
2. creating new products/services,
3. thinking creatively, and
4. commercializing an idea or new development

A 5-point Likert scale was used (1: No Confidence to 5: Complete Confidence). Entrepreneurship Education scale reliability coefficient Cronbach's alpha = 0.7826. Variable name: ESE\_FINAL

### ***3.2.4 Proximate Social Context (Knowing a Nascent Entrepreneur)***

Knowing a nascent entrepreneur (know entrepreneur) is a dummy variable that takes the value of 1 if the respondent answers affirmatively to the question: "Do you personally know someone who started a business in the past 2 years?" and 0, otherwise.



Schmutzler et al. (2019) acknowledge that utilizing this dummy variable as a proxy for the individuals' proximate social environment contains limitations, as it was not designed to capture the complexity of social networks or (entrepreneurial) role models. By attributing no more than what the variable measures, namely knowing a nascent entrepreneur, we refrain from common but overreaching interpretations while still being able to study the role of an individual's proximate social context. Variable name: Knowing\_a\_Nascent\_Entrepreneur

### ***3.2.5 Theory of Planned Behavior Control Variables***

Subjective norms, Attitudes toward entrepreneurship, and Perceived behavioral control are the three primary constructs of the Theory of Planned Behavior (TPB). These variables hold a central position in research as antecedents of entrepreneurial intent. For this reason, we selected and included them in our analysis as control variables. More specifically, we have chosen the same operationalization of the constructs mentioned above as that utilized by Kautonen et al. (2013) in their study about the robustness of TPB in predicting entrepreneurial intentions and actions.

#### ***3.2.5.1 Subjective Norms***

We computed subjective norms items (all measured on a 6-point Likert-style rating scale) by multiplying the following attitude items

1. "How well do the following statements describe your situation?"
  - a. My closest family members think that I should take steps to start a business in the next 12 months
  - b. My best friends think that I should take steps to start a business in the next 12 months
  - c. People who are important to me think that I should take steps to start a business in the next 12 months

with their respective motivation-to-comply items

2. "And how much would you care about what these people think, if you wanted to take steps to start a business in the next 12 months?"
  - a. My closest family members think that I should take steps to start a business in the next 12 months
  - b. My best friends think that I should take steps to start a business in the next 12 months
  - c. People who are important to me think that I should take steps to start a business in the next 12 months





However, to reduce the dimensionality and simplify this construct's effect on our analysis, we split the construct into three separate items. Subjective norms related to family, friends, and important people. The resulting three items were measured on a 1-36 scale. Variable names: SN\_Family, SN\_Friends, and SN\_Important\_People

### 3.2.5.2 *Attitudes Towards Entrepreneurship*

Attitudes towards entrepreneurship variable was measured with six bipolar scales (6 levels), attaching the idea of engaging in startup activities in the next 12 months to a set of adjectives. The question was "Please rate the following statement based on the word pairs provided: 'For me, taking steps to start a business in the next 12 months would be . . .'", and the respondents were to select a point on a 1-6 Likert scale with 1 being the adjective on the left and 6 the adjective on the right:

. . . unpleasant–attractive

. . . useless–useful

. . . foolish–wise

. . . negative–positive

. . . insignificant–important

. . . tiresome–inspiring

Scale reliability coefficient: Cronbach's  $\alpha = 0.9251$ . Variable name: AtE\_FINAL

### 3.2.5.3 *Perceived Behavioral Control*

The scale for PBC comprised four items; two addressed the perceived ease of performing entrepreneurial activities, and two captured the control that the respondents felt they would have over such behavior (Ajzen, 2002). The respondents were to select a point on a 1-6 Likert scale for the following items:

"Please indicate your opinion on the following statements"

1. If I wanted to, I could take steps to start a business in the next 12 months
2. If I took steps to start a business in the next 12 months, I would be able to control the progress of the process to a great degree myself
3. It would be easy for me to take steps to start a business in the next 12 months
4. If I wanted to take steps to start a business in the next 12 months, no external factor, independent of myself, would hinder me in taking such action

Scale reliability coefficient: Cronbach's  $\alpha = 0.7847$ . Variable name: PBC\_FINAL



### ***3.2.6 Demographics and other control variables***

Furthermore, the questionnaire requested demographic and biographical information of the respondents. We included a dummy variable indicating the respondent's gender to account for the potential effect of gender on entrepreneurial intentions. Although, recent literature (Gupta et al., 2008; Gupta et al., 2009) suggests that biological gender is a poor predictor of entrepreneurial intentions and that more sophisticated constructs, such as gender-role stereotypes and gender identification, need to be studied. Six age groups (Less than 20, 20-34, 35-44, 45-54, 55-64, and "More than 64") accounted for the aging effect on entrepreneurial intentions. We also included a dummy variable to capture the previous entrepreneurial experience in the model as a control dummy variable. This variable takes the value of 1 if the respondent answers affirmatively to the question: "Have you had prior entrepreneurial experience?" and 0 otherwise. The latter variable has been found to increase an individual's entrepreneurial intentions (Parker; Rotefoss & Kolvereid, 2005). At last, we captured respondents' level of formal education. Variable names: Gender, Age\_Group, Entrepreneurial\_Experience, Level\_of\_Education

## ***3.3 Variables***

Scholars and statisticians often dispute whether Likert scale items could be averaged or summed to create a score for a latent variable. However, we followed the same analytical and methodological approach as the papers we were based on (Thompson, 2009; Zhao et al., 2005; Schmutzler et al., 2019; Kautonen et al., 2013)

## ***3.4 Analytical Strategy***

We use Imai et al.'s (2010) method for causal mediation analysis because the existing methods have one fundamental practical limitation, the inability to conduct sensitivity analyses to the SI assumption. The blind application of earlier methods without respect to the nonrandomization of the mediator has received severe criticism (Bullock, Green, and Ha 2010). Alternatively, Imai et al. (2010) suggest conducting sensitivity analyses. Sensitivity analysis allows us to state how the average causal mediation effect would change for different degrees of violation of the sequential ignorability assumption (Rosenbaum 2002). Furthermore, since the SI assumption can never be tested directly, sensitivity analysis is critical for causal mediation analysis. The estimations were performed using the Stata/MP 17.0 software and specifically the mediation package (R. Hicks, D. Tingley; 2011). We performed a partial least squares structural equation modeling to cross-validate our results.



# 4

## *Results*

In this part, we present our empirical analysis results and findings.

### *4.1 Exploratory Data Analysis*

#### *4.1.1 Descriptive Statistics*

*Table 1: Descriptive Statistics for Model Variables*

Variable	Obs	Mean	Std. dev.	Min	Max
EI_FINAL	73	3.97	1.21	1.00	6.00
ESE_FINAL	73	3.50	0.76	1.75	5.00
EEd_FINAL	73	2.76	0.84	1.00	4.50
Knowing_a_Nascent_Entrepreneur	73	0.74	0.44	0.00	1.00
AtE_FINAL	73	3.67	1.17	1.17	6.00
PBC_FINAL	73	3.43	1.12	1.25	6.00
SN_Family	73	10.51	8.38	1.00	36.00
Gender	73	0.44	0.50	0.00	1.00
Entrepreneurial_Experience	73	0.47	0.50	0.00	1.00



#### 4.1.2 Correlation Analysis

Correlation Matrix with statistical significance indication \* ( $\alpha=5\%$ ):

Table 2: Pearson correlation matrix. Note: KaNE = Knowing a Nascent Entrepreneur, Entr\_Exp = Entrepreneurial Experience

	Entr_Exp	Gender	KaNE	PBC_FINAL	AtE_FINAL	EEd_FINAL	ESE_FINAL	El_FINAL
El_FINAL	0.2266	0.0354	0.3151*	0.1439	0.4883*	0.0525	0.4103*	1
ESE_FINAL	0.3232*	0.3613*	0.3081*	0.5129*	0.4175*	0.2853*	1	
EEd_FINAL	-0.0645	0.0185	0.1869	0.2156	0.3122*	1		
AtE_FINAL	0.0902	0.1972	0.4058*	0.5036*	1			
PBC_FINAL	0.2262	0.2981*	0.3044*	1				
KaNE	0.1783	-0.0422	1					
Gender	0.3374*	1						
Entr_Exp	1							

We excluded subjective Norms variables from Pearson correlation analysis due to non-normality assumption violation.

From the table above, we can infer that Entrepreneurial Intent is moderately correlated with Entrepreneurial Self-Efficacy, Attitudes Towards Entrepreneurship, and Knowing a Nascent Entrepreneur with statistical significance at a 5% significance level. Entrepreneurial Intent correlation with Entrepreneurship Education and Gender is not only negligible but also statistically not significant. Furthermore, the correlation matrix indicates that the correlation between Entrepreneurial Intent, Entrepreneurial Experience, and Perceived Behavioral Control is low and statistically not significant.

Entrepreneurial Self-Efficacy is substantially correlated with Perceived Behavioral Control with statistical significance at  $\alpha=5\%$ , expected since these two constructs are theoretically related. A moderate and statistically significant correlation is observed between Entrepreneurial Self-Efficacy and Knowing a Nascent Entrepreneur, Attitudes towards Entrepreneurship, Gender, and Entrepreneurial Experience, when the correlation between Entrepreneurship Education is low and statistically significant. We also observe a not statistically significant relationship between Gender, Entrepreneurship Education, Entrepreneurship Experience, Perceived Behavioral Control, and Entrepreneurial Intent.

We performed a non-parametric Spearman correlation to capture the relationship between the three variables that violate the normality assumption.

*Table 3: Spearman correlation coefficient matrix*

	EI_FINAL	ESE_FINAL	EEd_FINAL	AtE_FINAL	PBC_FINAL	SN_Family	SN_Friends	SN_Important_People
SN_Family	0.2093	0.3881*	0.1378	0.4810*	0.3961*	1		
SN_Friends	0.2765*	0.4317*	0.2337*	0.4894*	0.3787*	0.7839*	1	
SN_Important_People	0.2642*	0.3909*	0.1011	0.4645*	0.4240*	0.7425*	0.8484*	1

SN\_Family with statistical significance (for  $\alpha=5\%$ ) is moderately correlated with ESE, AtE, and PBC and very highly correlated with SN\_Friends and SN\_Important\_People. SN\_Friends low EI and EED, moderately ESE, AtE, PBC, and very highly with SN\_Important\_People. SN\_Important\_People low EI, moderately ESE, AtE, and PBC.



## 4.2 Causal Mediation Analysis

Our end goal is twofold. Firstly, we intend to prove that entrepreneurial self-efficacy positively mediates the entrepreneurship education's effect on entrepreneurial intent. Secondly, we intend to prove that knowing a nascent entrepreneur<sup>3</sup> positively influences entrepreneurial intent. For this purpose, we performed causal mediation analysis utilizing R. Hicks, D. Tingley's (2011) mediation package. Statistical procedures applied in the mediation package are described in Imai, Keele, and Tingley (2010a) and Imai, Keele, and Yamamoto (2010c). A critical assumption of this statistical procedure is sequential ignorability<sup>4</sup>, which is a non-refutable assumption; therefore, assumption testing is impossible. For this reason, we employ sensitivity analysis to assess our model's robustness.

The Linear Structural Equation Modeling (LSEM) of our analysis consists of the two following equations:

Equation (1):

$$\begin{aligned} ESE\_FINAL_i = & \alpha_2 + \beta_{11}EEd\_FINAL_i + \beta_{12}Knowing\_a\_Nascent\_Entrepreneur_i \\ & + \beta_{13}AtE\_FINAL_i + \beta_{14}PBC\_FINAL_i + \beta_{15}SN\_Family_i + \beta_{16}Gender_i \\ & + \beta_{17}Entrepreneurial\_Experience_i + \varepsilon_{i1} \end{aligned}$$

Equation (2):

$$\begin{aligned} EI\_FINAL_i = & \alpha_3 + \beta_{21}ESE\_FINAL_i + \beta_{22}EEd\_FINAL_i \\ & + \beta_{23}Knowing\_a\_Nascent\_Entrepreneur_i + \beta_{24}AtE\_FINAL_i \\ & + \beta_{25}PBC\_FINAL_i + \beta_{36}SN\_Family_i + \beta_{27}Gender_i \\ & + \beta_{28}Entrepreneurial\_Experience_i + \varepsilon_{i2} \end{aligned}$$

Provided that R-squared and Adjusted R-squared are equal to 0.4066 and 0.3325, respectively, we could say that model fit to data is barely satisfying. Our model is statistically significant given that P-value for F-Test (Prob > F = 0.0000) is equal to zero.

In Figure 2, we present our final model estimates. All hypotheses are supported except Hypotheses 4 and 5. The results support Hypothesis 1 ( $p < 0.01$ ,  $\beta_{21} = 0.605$ ), which proposes that entrepreneurial self-efficacy positively affects entrepreneurial intent. Supported by the results is Hypothesis 2 ( $p < 0.1$ ,  $\beta_{11} = 0.15$ ), which contends that entrepreneurship education positively affects entrepreneurial self-efficacy. Entrepreneurship education's effect on

<sup>3</sup> Knowing a nascent entrepreneur serves as a proxy for social norms and legitimacy stemming from role models from one's proximal social environment

<sup>4</sup> See Imai, Keele, and Yamamoto (2010c) for a detailed explanation of sequential ignorability assumption



entrepreneurial intent is negative and statistically significant ( $p < 0.1$ ,  $\beta_{22} = -0.22$  & Direct Effect =  $-0.21784$ ); therefore, our results do not support Hypothesis 3. As presented in Table 6, Hypothesis 4 is also supported ( $\rho(\text{ACME}=0) = 0.3479$ ,  $R_M^{2*} R_Y^{2*}(\text{ACME} = 0) = 0.121$ ,  $\text{ACME} = 0.09068$ ), which means entrepreneurial self-efficacy positively mediates entrepreneurship education's effect on entrepreneurial intent. More precisely, entrepreneurship education's marginal causal mediation effect (through entrepreneurial self-efficacy) on entrepreneurial intent equals 0.09068. Moreover, 43.54% (we take the absolute value) of entrepreneurship education's total effect on entrepreneurial intent is mediated through entrepreneurial self-efficacy. It is important to declare that these results assume that sequential ignorability holds (Imai et al.; 2010). However, this assumption is non-refutable, and therefore, to assess the robustness of our results, we need to employ sensitivity analysis. Hypothesis 4 is supported; nevertheless, sensitivity analysis is required.

	Prob > F	R-squared	Adj R-squared
Equation 1	0.0000	0.4314	0.3701
Equation 2	0.0000	0.4066	0.3325

Figure 2: Linear Structural Equation Modeling Goodness of Fit Statistics and Significance Test

Table 4: Equation 1 Linear Multiple Regression Results

Variable	Coefficient	Std. Error
EEd_FINAL	0.151	0.089
Knowing_a_Nascent_Entrepreneur	0.196	0.183
AtE_FINAL	0.020	0.083
PBC_FINAL	0.172	0.077
SN_Family	0.017	0.010
Gender	0.319	0.160
Entrepreneurial_Experience	0.232	0.156
_cons	1.837	0.318

Table 5: Equation 2 Linear Multiple Regression Results

Variable	Coefficient	Std. Error
ESE_FINAL	0.605	0.204
EEd_FINAL	-0.220	0.090



Knowing_a_Nascent_Entrepreneur	0.199	0.305
AtE_FINAL	0.545	0.136
PBC_FINAL	-0.297	0.132
SN_Family	-0.006	0.017
Gender	-0.405	0.271
Entrepreneurial_Experience	0.382	0.261
_cons	1.399	0.644

Table 6: Causal Mediation Analysis Effects Estimates

Effect	Mean	[95% Conf. Interval]	
ACME	0.09068	-0.01241	0.22863
Direct Effect	-0.21784	-0.52449	0.07915
Total Effect	-0.12716	-0.43840	0.18603
% of Total Effect mediated	-0.4354977	-5.90836	7.85383

The estimates in Table 6 are identified if the sequential ignorability assumption holds. However, as we discussed in section 2, the entrepreneurial intention is dependent on entrepreneurial self-efficacy within each treatment condition – i.e., entrepreneurship education level – hence, it is unlikely this assumption holds. Thus, we ask how sensitive these estimates are to violations of this assumption. We employ sensitivity analysis procedures as Imai et al. (2010) proposed to answer this question.

Figure 3 presents the sensitivity analysis results based on the residual correlation ( $\rho$ , Rho). We plot the estimated ACME of the entrepreneurial self-efficacy mediator against differing values of the sensitivity parameter  $\rho$ , which is the correlation between the two error terms of equations (1) and (2). The analysis indicates that the original conclusion about hypothesis 4 about the direction (sign) of the ACME under sequential ignorability assumption would be maintained unless  $\rho$  is larger than 0.3479. The latter implies that hypothesis 4 is plausible given even relatively large departures from the ignorability of the mediator. This result does not hold after we consider the sampling variability, as the confidence interval covers the value of zero for all different values of  $\rho$ . Thus, Hypothesis 4 is relatively weak to the violation of equation (5) of sequential ignorability assumption under the LSEM.





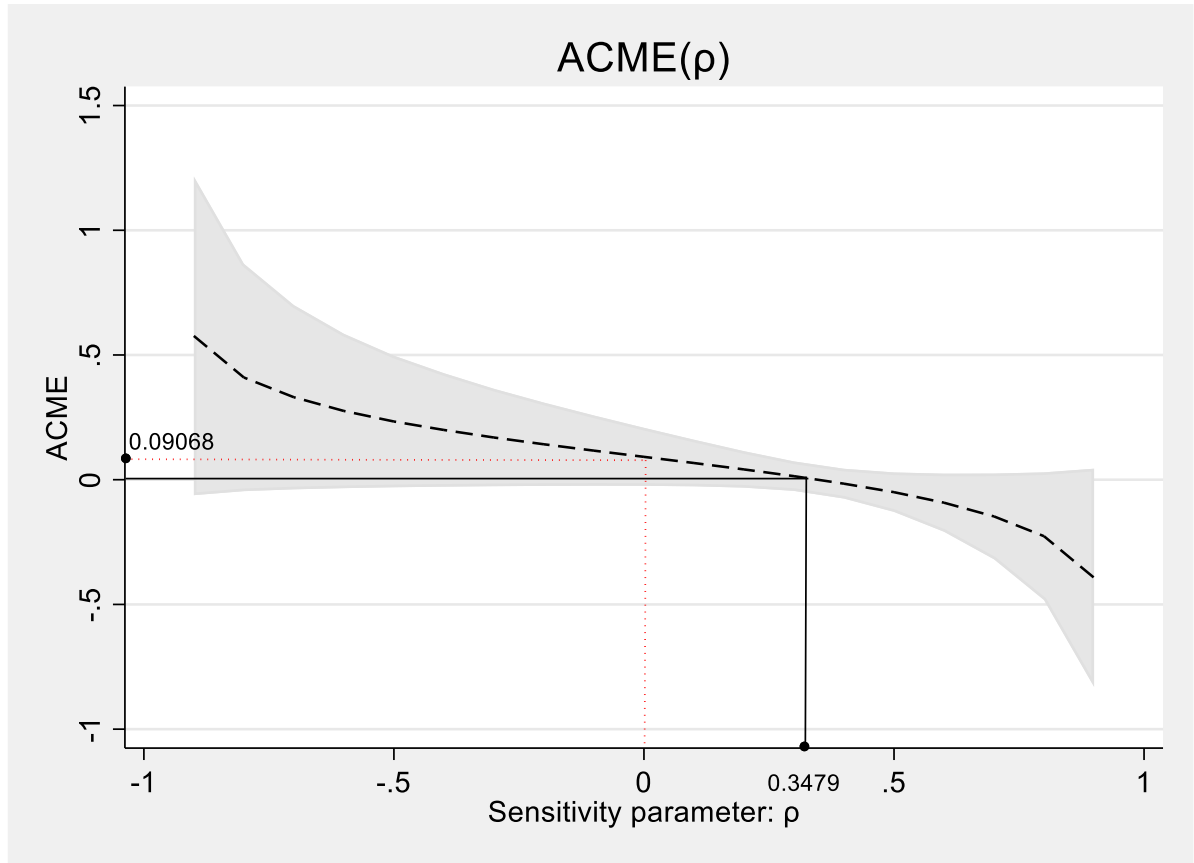


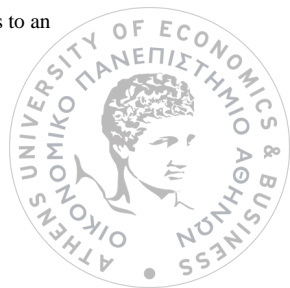
Figure 3: Sensitivity Parameter:  $\rho$ , Average Causal Mediation Effect

Due to the difficult interpretation of  $\rho$ , we employ a different sensitivity analysis approach based on the coefficients of determination, which indicates that Hypothesis 4 about the direction of the ACME is not robust. However, the ACME is still guaranteed to be positive as long as the unobserved confounder<sup>5</sup> explains less than 12.1% of the variance in the mediator or outcome left unexplained by entrepreneurship education alone, no matter how large the corresponding portion of the variance in the other variable may be.

Finally, results do not support Hypothesis 5 about the positive effect of knowing a nascent entrepreneur on entrepreneurial intent ( $p > 0.1$ ,  $\beta_{23} = 0.2$ ).

It is essential to mention that partial least squares structural equation modeling confirmed our results for all hypotheses.

<sup>5</sup> The notion of unobserved confounder is introduced in causal mediation analysis for sensitivity analysis purposes. It refers to an unobserved variable that could affect the mediator and/or outcome variables.



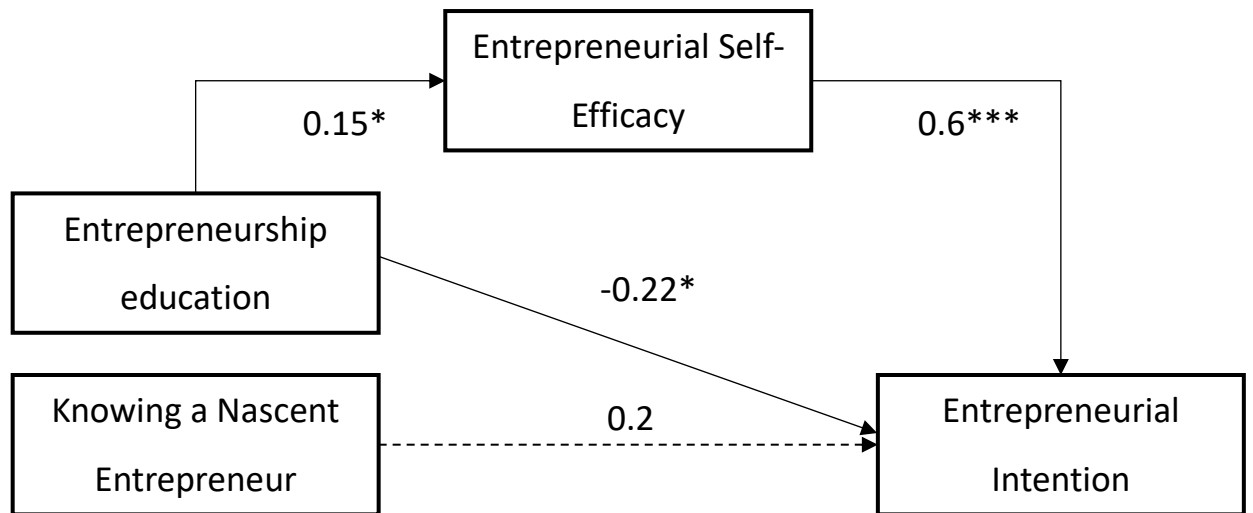


Figure 4: Final Model. Solid arrows represent the supported hypotheses; dotted arrow represents the un-supported hypotheses. Symbol-P-value correspondence: \* $p < .1$ . \*\* $p < .05$ . \*\*\* $p < .01$ . † $p < .001$

Table 7. Overview of the Estimation Results. Note: these results are confirmed through PLS-SEM as well

No	Hypothesis description	Causal Mediation Analysis	Hypothesis Testing
H1	Entrepreneurial self-efficacy will positively affect entrepreneurial intent	Positive Coefficient and statistically significant***	Confirmed
H2	Entrepreneurship education will positively affect entrepreneurial self-efficacy	Positive Coefficient and statistically significant*	Confirmed
H3	Entrepreneurship education will positively affect entrepreneurial intent	Negative and statistically significant*	Not Confirmed
H4	Entrepreneurial self-efficacy will positively mediate the effect of entrepreneurship education on entrepreneurial intent	Positive ACME and moderate robustness	Confirmed
H5	Knowing a nascent entrepreneur will be positively related to an individual's entrepreneurial intent	Positive Coefficient and NOT statistically significant	Not Confirmed

Symbol-P-value correspondence: \* $p < .1$ . \*\* $p < .05$ . \*\*\* $p < .01$ . † $p < .001$





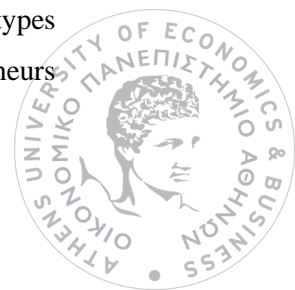
# 5

## *Discussion*

As theory suggests (Barbosa et al., 2007; Boyd & Vozikis, 1994; Chen et al., 1998; Douglas, 2013; Fitzsimmons & Douglas, 2011; Sequeira et al., 2007; Zhao et al., 2005), entrepreneurial self-efficacy is the strongest predictor of entrepreneurial intent in our model. Therefore, our results provide evidence that individuals choose to become entrepreneurs because they feel confident in this area and believe they can successfully perform the activities and tasks required.

Moreover, our results – in agreement with other studies (Wilson et al., 2007; Zhao et al., 2005; Chen, 2010) – support the mediation role of entrepreneurial self-efficacy in entrepreneurial intentions for entrepreneurship education. The latter means that when individuals study entrepreneurship, they develop confidence in entrepreneurship activities, and therefore they develop entrepreneurial intent. This result provides a foundation and empirical proof for actions and policymaking efforts whose target is to increase entrepreneurial activity. It also supports the importance of targeted educational efforts in the same direction. More precisely, the design of the degrees targeting young students needs to apply practical procedures to induce confidence in students about performing entrepreneurial tasks. For example, as part of the degree's curriculum, students could join startups partnered with the university and work on ongoing, real projects under the supervision of and in collaboration with professors and the startup team. This way, students will demystify entrepreneurship firsthand and will have the chance to build experiences crucial for their entrepreneurial self-efficacy. Moreover, this practical education approach will help individuals form judgments of their capabilities through personal comparison (Cox et al., 2002). This study contributes to social cognitive theory by confirming the impact of 'exogenous influence' on entrepreneurial intention and testing entrepreneurial self-efficacy's mediating role.

Our results, contrary to previous research (Eesley & Wang, 2017; Lafuente et al., 2007; Nanda & Sørensen, 2010; Wyrwich et al., 2016; Schmutzler et al., 2019), do not provide evidence that proximate social context shapes entrepreneurial intent. To explain this finding, we should understand how social networks affect individuals' career choices in Greece and whether these social networks create positive social norms, legitimacy, and values for entrepreneurship. Undoubtedly, in this direction, socio-cultural traits, such as stereotypes towards entrepreneurs, should be considered to assess how Greek people view entrepreneurs.



and, of course, what difference between Greek society and those abroad neutralizes the effect of social norms, legitimacy, and values on entrepreneurial intentions.

An interesting result is the negative direct effect of entrepreneurship education on entrepreneurial intent. This finding suggests that entrepreneurship education, as embodied in Greece, does not encourage individuals towards entrepreneurship, rather the opposite. Of course, further research and analysis are required on this finding. However, provided that our study respondents have studied in Greece, we could conclude that the entrepreneurship education system in Greece requires significant modifications and improvements.

On top of those mentioned above, we want to note some interesting conclusions of our study regarding control variables. In alignment with previous research (Boyd & Vozikis, 1994; Wilson et al., 2007), perceived behavioral control is differentiated from entrepreneurial self-efficacy based on its effect on entrepreneurial intent. However, in contrast with the theory of planned behavior, our results show that perceived behavioral control is negatively related to entrepreneurial intent. We need to frame this finding by specifying that our study's questionnaire respondents were asked specific questions about their perceived behavioral control for the immediate future (12 months). Contrary to the latter, questions about respondents' entrepreneurial intent were not timed. Consequently, this negative influence of perceived behavioral control could be justified because when individuals feel they control a particular behavior, it does not necessarily, mean that they intend to perform it in the foreseeable future.



# 6

## *Limitations*

Our study's sample is different compared to the dominant kind of sample in entrepreneurship research (Krueger et al., 2000), which consists of young undergraduate students with Economics and Management degrees. This fact creates a structural differentiation between our study and other studies in the field of entrepreneurship and therefore requires attention when comparing our results to those of other studies. Furthermore, all collected data were self-reported. Self-report bias is often exhibited because people are inclined to report socially accepted or desirable actions and to deny socially unacceptable or undesirable actions. However, self-report bias is minimum when the information collected is not sensitive. Provided that we did not gather sensitive information in this study, we believe that self-report bias is negligible. Moreover, and most importantly, we acknowledge that from a methodological and study design perspective, controlling for the pre-entrepreneurship education level of entrepreneurial self-efficacy and entrepreneurial intent would be ideal for better identifying causal paths between these constructs. This limitation exists due to the timing of the dissertation.

A significant limitation is that this study focused on entrepreneurial intentions rather than actual behavior. In social cognitive theory, the intention is defined as the cognitive state immediately preceding the execution of behavior. Numerous previous studies have established a reasonable link between intentions and subsequent behavior (Zhao et al., 2005). We acknowledge, however, that intentionality does not always imply behavior.

As Wilson et al. (2007) proved, the relationship between entrepreneurship education and entrepreneurial self-efficacy is moderated by gender. Regarding the relationship between entrepreneurial self-efficacy and entrepreneurial intent, recent empirical studies (Chowdhury & Endres, 2015; Fitzsimmons & Douglas, 2011; Wennberg et al., 2013) suggest that it is more complex than previously assumed; mainly because of contextual factors which exert moderating effects (Kibler, 2013). Along with these hypotheses, we omitted many more proved in previous studies. We did this because our intention was not to test for an entrepreneurial intention model but rather to contribute by validating two specific hypotheses in the context of Greece.



All in all, the simplistic operationalization<sup>6</sup> of social norms, legitimacy, and values created in an individual's proximate social environment could be why we could not provide evidence for their effect on entrepreneurial intent.

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<sup>6</sup> Knowing a nascent entrepreneur, dummy variable



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