Fueling Ambitions: The Impact of Entrepreneurship Education on Entrepreneurial Intentions

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Dissertation written under the supervision of Nilanjana Dutt

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Today's labour market is undergoing profound change, driven by two main factors. First, the rapid advance of technology leading to the emergence of innovative firms at an unparalleled rate. Second, the need to revitalize economies suffering from the aftermath of Covid-19 has intensified the need for change. As a result, entrepreneurship has emerged as an increasingly attractive career path, especially among younger generations and university students.

This research thesis attempts to measure the impact of entrepreneurship education on entrepreneurial intentions, taking into account different amounts of ECTS taken. Recognizing the central role of a supportive social environment, this study investigates the extent to which an individual's perceived supportive environment acts as a catalyst, strengthening the link between entrepreneurship education and entrepreneurial intentions. By drawing on insights from extensive literature on entrepreneurship, this research not only enriches this dynamic field, but also breaks new ground. First, it strengthens the ongoing discourse by providing robust empirical evidence that clearly establishes the significant impact of entrepreneurship education on entrepreneurial intentions, thus bringing valuable clarity to a previously debated topic. Second, the study uncovers a gender gap in entrepreneurship education, underscoring the necessity for tailored strategies addressing the unique challenges faced by aspiring entrepreneurs of all genders. Finally, the study highlights the multifaceted role of the social environment in shaping the relationship between entrepreneurship education and entrepreneurial intentions. This influence presents both positive and negative aspects, providing a nuanced understanding of the interplay between these critical factors.

Keywords: Entrepreneurship, Entrepreneurship Education, Entrepreneurial Intentions, Social Norms

Alimentando Ambições: O Impacto da Educação em Empreendedorismo nas Intenções Empreendedoras

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O mercado de trabalho está a sofrer profundas alterações, impulsionadas por dois fatores principais. Primeiramente, o rápido avanço tecnológico, leva ao aparecimento de empresas inovadoras a um ritmo acelerado. Em segundo lugar, a necessidade de revitalizar as economias devido à Covid-19 intensificou a necessidade de mudança. Como resultado, o empreendedorismo surgiu como uma carreira cada vez mais atrativa, especialmente para gerações mais jovens e estudantes universitários.

Esta dissertação procura medir o impacto de cadeiras de empreendedorismo nas intenções empreendedoras, tendo em conta diferentes quantidades de ECTS realizados. Reconhecendo o papel central de um ambiente social de apoio, este estudo investiga até que ponto o ambiente de apoio percebido pelo indivíduo atua como um catalisador, reforçando a ligação entre a educação na área do empreendedorismo e as intenções empreendedoras. Ao basear-se na extensa literatura sobre empreendedorismo, esta investigação não só enriquece este campo dinâmico, como abre novos caminhos. Primeiro, reforça a discussão em curso, fornecendo provas empíricas que estabelecem claramente o impacto significativo da educação na área do empreendedorismo nas intenções empresariais, trazendo assim clareza a um tópico anteriormente debatido. Em segundo lugar, o estudo revela uma lacuna de género na educação para o empreendedorismo, sublinhando a necessidade de estratégias adaptadas que abordem os desafios enfrentados pelos aspirantes a empresários de todos os géneros. Por último, o estudo realça o papel multifacetado do ambiente social na relação entre a educação e as intenções empreendedoras. Esta influência apresenta aspetos positivos e negativos, proporcionando uma compreensão matizada da interação entre estes fatores críticos.

Palavras-chave:
Empreendedorismo, Educação Empreendedora, Intenções Empreendedoras, Normas Sociais

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1 INTRODUCTION

As the labor market has undergone significant transformation owing to factors such as workforce diversity, rapid technological advancements, and increased globalization, changes in traditional organizational structures and work settings have been set in motion. As a result, entrepreneurship has emerged as an appealing career option for younger generations, particularly university students (Meoli et al., 2020). Entrepreneurship is widely acknowledged for its significant contributions to job creation, economic growth, and overall national prosperity (OECD, 2023a). In addition, SMEs form the essential foundation for post-COVID-19 recovery, driving strength and ensuring a sustainable, cleaner, and more inclusive path to growth (OECD, 2023b). In recent decades, universities have undergone a transformative shift, evolving from traditional centers of academic learning, primarily focused on preparing students for the corporate world, into dynamic catalysts of entrepreneurship and innovation. This transformation has been driven by universities' strategic decision to integrate entrepreneurship education into their academic offerings, thereby equipping students to embark on entrepreneurial endeavors. However, despite many students expressing entrepreneurial intentions, only a limited number translate these aspirations into actual entrepreneurial behaviors or pursue entrepreneurship as a career path (Meoli et al., 2020). Therefore, it is of crucial importance to understand the effects of entrepreneurship education on entrepreneurial intentions and, the ideally subsequent establishment of new businesses.

By *entrepreneurial intentions* I am referring to an individual's self-recognized commitment to plan and initiate a new venture. Various factors, such as economic conditions and cultural attitudes, exert influence on these intentions (Israr & Saleem, 2018).

Over the past decades, the field of entrepreneurship education has experienced significant growth and recognition. Simultaneously, there has been a surge of interest in entrepreneurial intentions and their role in shaping entrepreneurial behavior and outcomes. However, while both, entrepreneurship education and entrepreneurial intentions, have individually garnered substantial scholarly attention, the relationship between these two constructs has yet to receive substantial examination – intensified by the fact that the literature has not yet reached consensus on whether the influence of entrepreneurship education has a positive or negative impact on entrepreneurial intentions. While the literature broadly agrees that entrepreneurship education serves as a vital determinant of entrepreneurial intentions, such as fostering essential skills and instilling belief in one's capability to successfully implement a business venture, there have also

been studies indicating that attending an entrepreneurship class could lead to the abandonment of entrepreneurial plans. Additionally, Bae et al. (2014) have highlighted the possible presence of a reverse causation effect, which may inflate the positive impact of entrepreneurship education. This is because it is presumed that individuals with pre-existing entrepreneurial intentions are more likely to enroll in such courses than their counterparts.

This research thesis aims to 1) contribute additional empirical results to the existing body of literature, which currently presents contradictory evidence regarding the effect of entrepreneurship education on entrepreneurial implementation intentions 2) investigate the role of an individual's perceived supportive environment within this relationship, a dimension that has not yet been explored in this context. The overarching goal of this thesis is to address the following research question:

How does a perceived supportive environment moderate the relationship between entrepreneurship education and entrepreneurial implementation intentions?

Testing *entrepreneurial implementation intentions* (EII) is valuable for several reasons. First, it enhances the comprehensiveness of the research model, providing a more robust understanding of entrepreneurial intention (EI) compared to studies that examine EI more generally. Second, it distinguishes between "entrepreneurial goal intentions" (EGIs) and EII, clarifying the intention to set goals versus the intention to take concrete actions to achieve those goals. Lastly, this distinction fills a gap in previous research, contributing to a more nuanced and refined understanding of entrepreneurial behavior (Esfandiar et al., 2019; Krueger, 2009).

To address this question, this thesis outlines a comprehensive research approach. It commences by delving into the existing theoretical foundation surrounding entrepreneurship education, entrepreneurial intentions, and the broader social context. This initial step is aimed at fostering a nuanced comprehension of how entrepreneurship education influences individuals' aspirations and drives towards entrepreneurship. Subsequently, the study formulates hypotheses derived from the literature, which are then subjected to statistical testing and analysis. Lastly, I will engage in a discussion encompassing the results, along with their theoretical and practical implications, as well as the main limitations of my research and possible further research.
This study relies on survey data collected from a diverse sample of ~ 260 participants, whereby the survey was designed to capture essential information related to entrepreneurship education

experiences, individual entrepreneurial intentions, the perceived supportive environment of relevant others, and other demographic variables. For the quantitative analysis I will employ advanced statistical techniques using SPSS to quantify the relationships between variables and assess their significance.

This research makes a substantial contribution to the scholarly conversation by not only contributing empirical research on the existing contradictory literature on the effectiveness of entrepreneurship education on entrepreneurial intentions but also by offering practical insights for educators, policymakers, and aspiring entrepreneurs. It has the potential to redefine our perspective on the role of education in fostering entrepreneurial spirit and, ultimately, to influence the landscape of entrepreneurship and innovation.

Given the ongoing global economic and social consequences of the COVID-19 pandemic, there is an amplified need to encourage entrepreneurship. The establishment of new ventures has become imperative for revitalizing the economies of nations impacted by the pandemic (Adeel et al., 2023).

2 LITERATURE REVIEW AND HYPOTHESES

How does a perceived supportive environment moderate the relationship between entrepreneurship education and entrepreneurial implementation intentions?

In order to address the research question proposed, it is crucial to define the term "intentions" with adequate specificity to avoid leading to varied research focuses and potentially different interpretations of the term (Meoli et al., 2020). In this study, the term "entrepreneurial intentions (EI)" is used to refer specifically to the intent to start a business.

2.1 Evolution of theoretical frameworks on entrepreneurial intentions

The study of entrepreneurship initially prioritized description over theory, resulting in the accumulation of a wealth of observational data. However, the absence of strong theoretical frameworks began to impede the progress in the field. By integrating social, cognitive, and developmental psychology, frameworks have been drawn upon and developed such as *Ajzen's theory of planned behavior* (*TPB, see Figure 1;* Ajzen, 1991) and *Shapero's model of the entrepreneurial event (MEE, see Figure 2;* Shapero, 1975; Shapero & Sokol, 1982), presenting robust, practical, and testable frameworks to better understand entrepreneurial behavior. These models have proliferated extensively and proven highly effective, given that the concept of intentions is fundamental to the decision-making processes of all individuals (Krueger, 2009; Krueger et al., 2000; Shook et al., 2003; Solesvik et al., 2012). In an empirical meta-analysis conducted by Kim & Hunter (1993), it has been consistently observed that intentions play a significant role in predicting behavior, while attitudes are powerful in predicting intentions. Attitudes are found to account for more than half of the variance in intentions, indicating a strong influence (Krueger, 1993). Furthermore, intentions themselves explain approximately 30% of the variance in future behavior (Krueger et al., 2000; Sheeran, 2002). When considering more distant factors like career choices, the effect size is likely to be smaller. Nevertheless, intentions remain a significant and impartial predictor of career choice, as indicated by research conducted by Lent et al. (1994). As a result, entrepreneurial intentions (EI) have received considerable attention in the entrepreneurship literature, such as by Bird, 1988; Katz & Gartner, 1988; Kolvereid, 1996; Krueger, 2009 and Krueger et al., 2000 (Meoli et al., 2020).

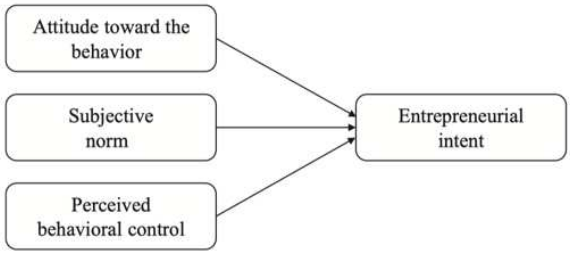

Figure 1: Theory of Planned Behavior – Ajzen, 1991

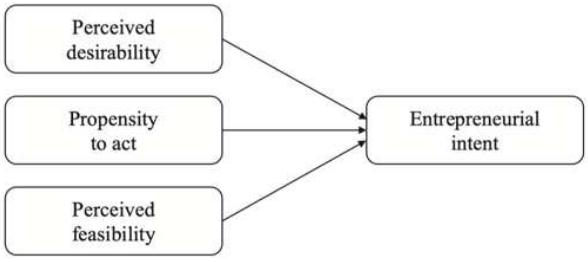

Figure 2: Model of Entrepreneurial Event – Shapero, 1982

As mentioned above, the development of models explaining human intentions has been driven by social psychological perspectives. Martin Fishbein's model postulated that critical human attitudes or beliefs could predict future behavior, known as "*attitude toward the act*". Fishbein observed that the connection between attitudes and behavior was entirely mediated by intentions. Later, Fishbein and Icek Ajzen refined the model by incorporating the influence of *social norms*, leading to the theory of reasoned action (TRA) (Krueger, 2009). This metric assesses how we perceive the supportiveness of other individuals around us and weighs our motivation to conform to their desires. Later, Ajzen further expanded the model by introducing *perceived behavioral control (PBC)* as a crucial antecedent referred to as the perception of how easy or difficult it is to perform the behavior. This extension resulted in the *theory of planned behavior (TPB)*, which remains the most widely used model for understanding human intentions to date (Krueger, 2009).

In 1975, Albert Shapero was among the pioneering researchers who delved into the study of entrepreneurial intentions. He introduced the *"entrepreneurial event" model*, which shares conceptual similarities with Ajzen's theory of planned behavior. Shapero's perspective on entrepreneurial intentions involved equating intent with the identification of a credible and personally viable opportunity. To be perceived as credible, the decision maker had to find the opportunity *desirable* (similar to TPB's attitude and social norm) and *feasible* (akin to self-efficacy). Additionally, Shapero introduced another antecedent called *"propensity to act"*, which encompassed the potential for a credible opportunity to transform into intent and, subsequently, action (Krueger, 2009).

However, unlike Ajzen and Fishbein's model, Shapero acknowledged that certain forces could moderate the link between intent and behavior (Krueger et al., 2000). “Complex goal-focused

behaviors may require some sort of precipitating factor, whether the perceived presence of a facilitating factor or the removal of a perceived critical barrier" (Krueger et al., 2000, p. 57). Interestingly, Ajzen's model operates under the assumption that the target behavior is fully within an individual's volitional control, disregarding any external barriers or facilitators. Bagozzi (1992), independently of Shapero, also identified this problematic aspect of TPB (Krueger, 2009).

While social and cognitive psychologies have enabled the development of testable models of intentions, it also highlights the need for clarity and consistency in defining and operationalizing variables. Perceptions play a vital role in these models, necessitating a thorough understanding of the key perceptual processes influencing entrepreneurial decision-making (Krueger, 2009).

Today, intention models have become commonplace, as they offer an easily measurable variable with considerable empirical robustness in entrepreneurship research (Krueger, 2009). It can be added that Krueger et al. (2000) argue that (based on Epstein's (1979) research on the stability of behavior) the ability to forecast actions by intentions is intensified for "molar behavior chains, capturing long-run tendencies by canceling variations in situations over time" (p. 414) – leading to the conclusion that someone who has strong intentions to engage in entrepreneurship will eventually do so, even if certain circumstances cause some kind of delay.

However, there's a crucial question worth exploring: How do critical determinants of EI, such as one's attitude towards taking action, their perception of feasibility, or the perceived desirability of entrepreneurship, get influenced or potentially strengthened? As entrepreneurship education has gained popularity over the last decades, the field of research on its impact has received significant attention from researchers in recent years. Scholars, including Israr & Saleem (2018), have demonstrated that entrepreneurship education has the potential to increase entrepreneurial intentions by enhancing individuals' knowledge and skills. This leads me to the backbone of my research question, which is to explain the extent to which entrepreneurial education influences entrepreneurial intentions. To deepen my research question, I will focus on entrepreneurial *implementation* intentions.

2.2 Entrepreneurship education as a determinant of entrepreneurial intentions

Entrepreneurship education can be defined as "any pedagogical programme or process of education for entrepreneurial attitudes and skills" (Fayolle et al., 2006, p.1). Despite some observed correlations between formal education and business ownership, it has been argued that formal education primarily prepares individuals for corporate careers, promoting a mindset of seeking employment, while potentially suppressing creativity and the entrepreneurial spirit (Peterman & Kennedy, 2003). To counteract this, many universities have started to implement such programs with the intention of increasing entrepreneurial awareness and preparing aspiring entrepreneurs (Bae et al., 2014).

To explore the relationship between entrepreneurial education and entrepreneurial intentions, Bae et al. (2014) conducted a meta-analysis based on 73 studies and a sample size of more than 37,000 individuals. In their extensive literature research, they identified two theoretical perspectives that link entrepreneurship education to entrepreneurial intentions.

While the *human capital theory* is considered the outcome of skills acquired from theoretical and practical entrepreneurship training, which is considered to reinforce the positive relationship between intentions and entrepreneurship, *entrepreneurial self-efficacy* – the "belief in one's ability to successfully perform the various roles and tasks of entrepreneurship" (p. 220) – is considered a trigger. This suggests that exposure to successful business planning and interaction with successful practitioners in entrepreneurship education can enhance entrepreneurial self-efficacy – which in turn, can increase entrepreneurial intentions (Bae et al., 2014).

In fact, the *career socialization theory* (Dyer, 1995) suggests that career choices are shaped by social factors, including educational experiences. In this context, entrepreneurship education programs offer social opportunities such as taking on responsibilities, initiating a business, and observing role models. These experiences can influence one's inclination toward careers that align with their educational background. Therefore, participation in this kind of education can be expected to impact the perceived desirability of starting a venture (Peterman & Kennedy, 2003).

Conversely, *self-efficacy*, which is a central element in Shapero's entrepreneurship model, holds significant importance as it notably impacts one's perception of how feasible it is to initiate a

business. Several factors influence self-efficacy, such as experience and social influence, as well as the mastery of experience, observational learning, social persuasion, support, and personal assessments or physical conditions (Peterman & Kennedy, 2003).

In 2014, Schlaegel and Koenig conducted a meta-analytic test of competing models on entrepreneurial intent, whereby they meta-analyzed 98 studies with 123 samples and around 114,000 participants. Findings indicate that *perceived desirability* and *feasibility*, both determinants within the MEE framework, significantly influence entrepreneurial intentions, leading to the conclusion that educators should proactively work on enhancing students' entrepreneurial skills and abilities to boost their entrepreneurial self-efficacy and perceived behavioral control.

The scholars also found that the positive relationship between *perceived behavioral control* and *EI* was "stronger for student samples compared with non-student samples" (Schlaegel & Koenig, 2014, p. 318), whereas "the relationship between *perceived desirability* and *EI* was stronger for non-student samples compared to student samples" (p. 318). This leads to the conclusion that students might feel that their educational background enables them a higher degree of external control but that simultaneously they might not have the resources to engage in entrepreneurial activities (Schlaegel & Koenig, 2014).

However, the measured impact of entrepreneurship education has been inconsistent in the literature (Dickson, Solomon & Weaver, 2008; Fayolle, 2013; Krueger, 1993; as cited in Adeel et al. 2023). Yi & Duval-Couetil (2021) propose several reasons that could lead to inconsistencies, such as methodological weaknesses, the diversity and approaches in educational formats as well as the extent and inaccuracy of results. Solving these issues will remain difficult due to the extent in approaches and designs of the programs and therefore, the comparability of their impact (Adeel et al., 2023). Nevertheless, entrepreneurial education is considered an important catalysator for professional and personal development such as entrepreneurial intention and behavior, innovation, and employability (Adeel et al., 2023). In fact, Curth et al. (2015) have highlighted that besides enhancing student's probability of engaging in entrepreneurial activities, students enrolled in entrepreneurship education tend to be more innovative and successful compared to students not enrolled in such kind of education. The authors add that entrepreneurship students have improved job prospects and higher earnings in comparison to their counterparts. Importantly, these effects tend to accumulate and foster acceleration, particularly for

those who have participated in a greater number of entrepreneurship education initiatives, yielding greater benefits over time (Curth et al., 2015).

Recently, Adeel et al. (2023) conducted a study across three Portuguese universities on personal traits associated with students engaging in entrepreneurial activities whereby they obtained 1,290 valid participant responses. The characteristics studied were "prior knowledge, entrepreneurial alertness, opportunity recognition, entrepreneurial motivation, and entrepreneurial intention" (p. 8) and it was examined "whether entrepreneurship education influences the relationship between these behaviors and traits" (Adeel et al., 2023, p. 8). It was found that prior knowledge, entrepreneurial alertness and opportunity recognition were positively intertwined, supporting study results found by other scholars such as Zanella et al. (2019). Results show that prior knowledge can raise awareness towards opportunities as one might have superior knowledge about the market and its customers as well as the development (Adeel et al., 2023). In addition, Mitchell et al. (2004) observed that entrepreneurs with high alertness find it easier to make informed decisions. Adeel et al. (2023) conclude, that students who identified compelling opportunities, exhibited higher levels of entrepreneurial intentions which in turn led to higher engagement in entrepreneurial activities. Interestingly, the ability to scout opportunities had contributed most substantially to entrepreneurial intention, with prior knowledge, alertness, and motivations nurturing this capacity which in turn is fostered by entrepreneurial education.

Evidence from Charney & Libecap (2000) shows that entrepreneurship graduates, who are exposed to business planning and interaction with mentors and peers in the field, are three times more likely to start a new venture and three times more likely to be self-employed than business graduates, who are primarily equipped with the business skills needed for established companies. However, Bae et al. (2014) raise that many scholars (eg. Mcmullan & Long (1987)) have suggested that this effect could be reinforced by reverse causation – implying a self-selection effect as students with entrepreneurial aspiration are more likely to enroll in entrepreneurship classes. This is supported by Peterman & Kennedy (2003) in a study sample of secondary school students, where a positive relationship has been found between the enrollment in an entrepreneurship education program and more (positive) prior experience. Therefore, entrepreneurship education may not be the sole determinant of entrepreneurial intentions, but rather serve for preliminary selection (Bae et al., 2014).

This prompts me to formulate my initial hypothesis to evaluate the impact of entrepreneurship education on entrepreneurial intentions, with the aim of making a meaningful contribution to the existing contradictory literature.

H1: There is a positive relationship between entrepreneurship education and entrepreneurial implementation intentions.

In their meta-analytic review, Bae et al. (2014) mention that findings show that men tend to display higher entrepreneurial intentions compared to women, but interestingly, entrepreneurship education can have a more profound effect on women's intentions. This discrepancy is attributed to the *social role theory* (Eagly, 1987), which suggests that societal expectations based on gender can steer individuals towards gender-stereotyped occupations. In this case, entrepreneurship education can serve as a crucial tool for women to overcome perceived skill gaps and consequently boost their entrepreneurial intentions. On the other hand, the effect of entrepreneurship education might not be as significant for men due to their narrower perceived knowledge gap in entrepreneurship (Bae et al., 2014).

H2: Men generally have higher entrepreneurial implementation intentions than women.

H3a: Women who have received entrepreneurship education show greater entrepreneurial implementation intentions than their male counterparts who have also attended such education.

H3b: Entrepreneurship education has a stronger effect on entrepreneurial implementation intentions of women compared to men.

Another interesting aspect that (Bae et al., 2014) examined in their study, was whether the type and length of training (workshop or semester-long format) would have an impact on the relationship but found no significant impact.

It is noteworthy to mention that the positive relationship between entrepreneurship education and entrepreneurial intentions was stronger in published studies compared to unpublished ones, possibly reflecting a publication bias towards significant or trending results (Bae et al., 2014).

2.3 Social context as a moderating factor

In 2000, Krueger et al. conducted a competing hypotheses test, comparing Shapero's MEE and Ajzen's TPB, and found both models to hold. However, according to Krueger et al. (2000), "the *social norms* component was non-significant, though the raw correlation between social norms and intentions was significant" (pp. 422-423), raising the question whether the "measurement of social norms is accompanied by systematic problems" (p. 424) or if "social norms simply not predict entrepreneurial intentions in this sample" (p. 424).
Additionally, Krueger et al. (2000) mention that "Ajzen's review (1987) and related work by Bagozzi et al. (1992) notes that a highly internal locus of control reduced the impact of social norms" (p. 424) indicating that typical entrepreneurs might be less influenced by their surroundings. Krueger et al. (2000) raise that social norms are closely related or intertwined with attitudes toward the act as well as with perceived feasibility, leading to Reitan (1997) suggesting that they would therefore maybe better serve as a moderator or mediator. Krueger et al. (2000) suggest that these models should be tested on "subjects facing career decisions who differ in age, experience, and ethnicity" (p. 429).

While many recent studies have focused on sole relationships between entrepreneurship education and EI as well as social norms and EI, no published study to this date has measured the relationship of entrepreneurship education and entrepreneurial (implementation) intentions with social norms as a moderating factor, as suggested by Krueger et al. (2000). This leads me to propose the following hypothesis:

H4: The perceived supportive environment positively moderates the relationship between entrepreneurship education and entrepreneurial implementation intentions.

Relevant study results I could find to draw on the impact of social context as a moderating factor, are from Meoli et al. (2020) who built on Bandura's *social cognitive career theory* (SCCT; 1986), focusing on the role of social context, particularly social modeling, in complementing internal motivations and influencing behavior. By providing a comprehensive theoretical framework, the study sought to analyze the conditions under which entrepreneurial intentions lead to successful new venture creation. The developed framework differentiates between more and less proximal contexts and their impact on transforming the intentions of university graduates into tangible new venture creations. These contexts encompass various aspects,

ranging from social relationships to the broader economic environment and support systems provided by universities (Meoli et al., 2020).

Meoli et al. (2020) utilized longitudinal data from a vast majority of university graduates in Italy to measure entrepreneurial intentions during two phases: during the final year of study and one year after graduation, examining whether the students were acting on their intentions. Meoli et al. tested their framework on almost 21,000 valid responses which covered a third of all students graduating from 64 Italian universities in the fall of 2014. Information pertaining to the environmental and regional attributes of their framework was obtained from the statistical office of the European Union.

SCCT is a well-established model that explains how individuals form career interests and make career choices, whereby *contextual influences* moderate the link between intention and career behavior. The theory suggests that contextual influences can either reinforce or diminish the relationship between intentions and career behavior, contingent on the individual's evaluation of their environment (Meoli et al., 2020).

Meoli et al. contend that SCCT provides a more comprehensive outlook compared to purely psychological entrepreneurship theories that solely focus on intentions. While intentions remain significant, they alone do not guarantee venture creation, necessitating the consideration of other contributing factors. Additionally, Meoli et al. introduce a visualization of the environment, envisioning it as a series of concentric circles encircling an individual, with inner circles denoting immediate social relationships (i.e. family, friends and mentors) and outer circles representing broader societal contexts such as organizational and macroeconomic conditions (Meoli et al., 2020).

Study results by Meoli et al. (2020) show that *relevant others* play a crucial role in reducing perceptions of fear and uncertainty by offering valuable information, knowledge, and resources for starting a new venture, while *university peers* can offer insights into the challenges and requirements of running a business. Support from these relevant others can strengthen the relationship between entrepreneurial intention and the actual creation of a new venture. This influence becomes particularly crucial for graduates entering the job market without significant personal experience to guide their career decisions.

Universities, serving as an *organizational environment*, have transformed their strategies to become incubators of entrepreneurship and innovation, offering entrepreneurship-related courses and promoting entrepreneurship as a viable and alternative career path. The supportive environment created by universities, significantly enhances students' entrepreneurial motivation and capabilities, positively influencing the transition from entrepreneurial intention to venture creation (Meoli et al., 2020).

Research into the regional aspects of entrepreneurship has emphasized the significance of various factors, including structural and demographic characteristics, cultural elements, as well as institutional aspects. Supportive environmental factors, like the economic well-being of a region, create favorable conditions for initiating new ventures. Thus, the scholars conclude that the prosperity of a region influences the feasibility of pursuing entrepreneurial careers (Meoli et al., 2020). However, it is acknowledged that such prosperity might not always stimulate entrepreneurship, as observed in a study by Bergmann et al. (2016) on student entrepreneurs. It is proposed that in supportive environments with ample job opportunities, the effect of entrepreneurial intention on new venture creation may be weaker due to the vast amount of alternative career paths. The hypothesis, proposed by Meoli et al. (2020), that supportive environmental factors reduce the effect of intention, was partially statistically supported.

Based on several statistical analyses conducted, Meoli et al. (2020) concluded that the interaction between entrepreneurial intentions and new venture creation was constantly positive and significant and reinforced with increasing intentions. The scholars then plotted the interaction of entrepreneurial intentions on new venture creation with each of their moderators (*relevant others'* influences, *organizational* influences and *environmental* influences) to demonstrate how their influence plays a moderating role in determining whether entrepreneurial intention leads to the actual establishment of a new firm. Interesting findings relevant to this research study are that individuals with high entrepreneurial intentions were much more likely to start a business if the level of support from *relevant others*, as well as from the *organizational* influence was high.

These findings provide valuable insights for the future. It is clear that support from relevant others and a favorable organizational environment play crucial roles in facilitating entrepreneurial intentions' translation into actual venture creation, leading me to the assumption that these facilitating factors also have a positive impact on entrepreneurial intentions. Therefore,

fostering a supportive network and creating an organizational culture that encourages entrepreneurship could be key strategies for promoting entrepreneurial intentions and thus, ventures.

3 RESEARCH METHODOLOGY

3.1 Research design

The methodology section describes the experimental structure created to investigate and validate the central hypotheses of this research.

Item	Hypothesis
H1	There is a positive relationship between entrepreneurship education and entrepreneurial implementation intentions.
H2	Men generally have higher entrepreneurial implementation intentions than women.
H3a	Women who have received entrepreneurship education show greater entrepreneurial implementation intentions than their male counterparts who have also attended such education.
H3b	The effect of entrepreneurship education on entrepreneurial implementation intentions is greater for women than for men.
H4	The perceived supportive environment positively moderates the relationship between entrepreneurship education and entrepreneurial implementation intentions.

Table 1: Hypotheses proposed

3.1.1 Conceptual model proposed

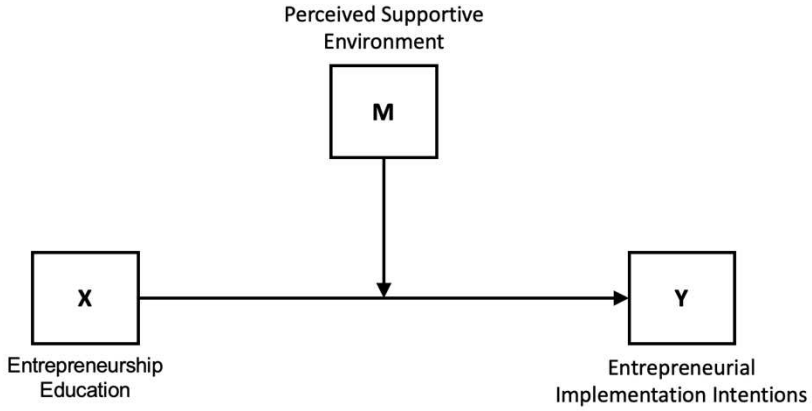

Figure 3: Conceptual Model representing H4

3.2 Data collection and cleaning

To investigate the research question and hypotheses proposed, data was collected using a self-reported questionnaire in English, administered in Qualtrics, which was pilot tested on friends and family to ensure clarity and quality in the survey. After several iterations, the survey was shared on various social media pages such as LinkedIn, WhatsApp, Facebook and Instagram. The aim was to target as many survey participants as possible to ensure random sampling and thus, a heterogenous sample that minimizes bias in the results. The survey consisted of ten questions (see Chapter 10 for the questionnaire attached), and was conducted from July 21st to August 24th, 2023, resulting in 304 individuals opening the survey of which 259 individuals completed it. By applying the snowball sampling technique, which involved friends and family members sharing the survey on their social media profiles, I was able to reach approximately 80 additional participants (80/304 = 26.32%).

The questionnaire started with a short message informing participants about the topic of the study, the amount of time that would be approximately needed for the completion of the survey (3-4 minutes) as well as that responses provided are anonymous and would be held confidential. This assured the validity of the survey. To ensure only high-quality answers, I included an attention check question, asking participants to select "Strongly agree" in one of the questions. As 20 participants failed to pass the attention check or failed to insert their birth year correctly, the dataset was reduced to 239 valid responses (n = 239).

Of the 239 study participants, 126 (n = 52.72%) reported being female, 112 (n = 46.86%) reported being male, and one person (n = 0.42%) described themselves as non-binary or third gender. Among the participants, 8% were born between 1957 and 1964 – and thus belong to the "Baby Boomer" generation, 5% were born between 1965 and 1980 – Generation "X", 28% were born between 1981 and 1996 – "Millennials/Generation Y", and 59% participants were born between 1997 and 2005 and thus, representing "Generation Z".

I did not ask for the nationality of participants but rather where they had spent most of their time in the past five years. This choice was motivated by the belief that such information could offer valuable insights for potential future research on entrepreneurial intentions. The rationale behind this decision is that entrepreneurial intentions could be tied to the economic conditions,

the development of infrastructure or the amount of entrepreneurship education offered in the country.

As can be seen in the chart below, most participants were residents from the German-speaking DACH-region (n = 156): Germany (D), Austria (A), and Switzerland (CH), followed by 33 participants from the United States. Additionally, 12 participants were residents from Italy, 11 participants from Norway and 10 participants from the Netherlands.

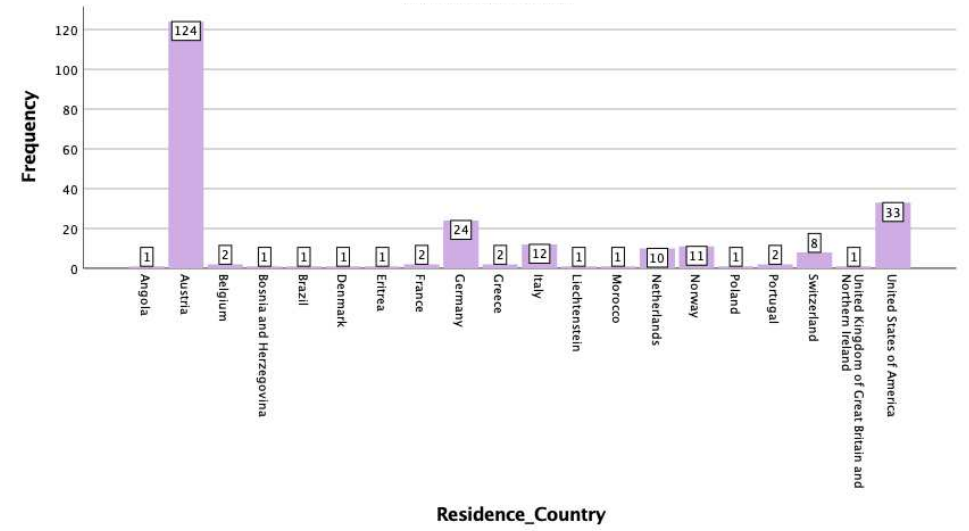

Figure 4: Survey participants' country of residence

Among the respondents, 12.97% have completed secondary education, 30.54% hold a University Bachelor's degree, 49.79% possess a University Master's degree, and 2.93% have achieved a University PhD degree. Additionally, 3.77% indicated "other" qualifications. These results indicate that the sample is notably well-educated.

Furthermore, 12.13% reported having less than one year of work experience, while 36.40% had 1-3 years of experience, 19.25% had 3-5 years of experience, 12.13% had 5-10 years of experience, and 15.48% had more than 10 years of experience. A small proportion, 4.6%, had not worked previously.

To my surprise, the distribution of participants' responses to the Entrepreneurship Education question was fairly even. Approximately 52.3% have never attended entrepreneurship courses, while 25.1% have attended one course with a maximum of 6 ECTS and 22.6% have attended several courses or a specialization program (worth more than 6 ECTS in total).

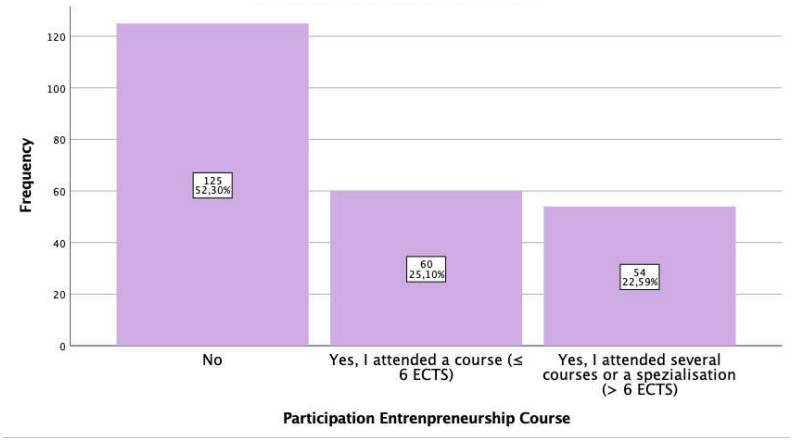

Figure 5: Survey participants' level of participation in entrepreneurship education

Lastly, among the respondents 87.87% are not self-employed, whereas 9.21% are self-employed, and 2.93% currently in the process (intending to become self-employed within the next 12 months).

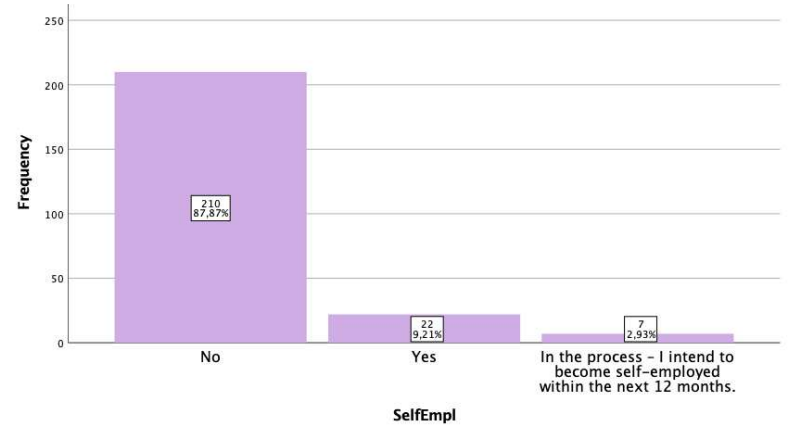

Figure 6: Survey participants' level of self-employment

3.3 Variables and measures

In this chapter, my aim is to provide a precise and practical definition of the key variables that will form the core of the study. Building a solid foundation will not only guide the collection of data but will also serve as the basis for the statistical analyses that follow.

3.3.1 Dependent variable

3.3.1.1 Entrepreneurial implementation intentions

For all five hypotheses put forth in this study, *Entrepreneurial Implementation Intentions (EII)* stands as the dependent variable (DV). As elaborated in the introduction, the adoption of the EII concept was a deliberate choice aimed at facilitating a more precise and robust examination of entrepreneurial intentions. The questions used to assess EII, were derived from a study conducted by Esfandiar et al. (2019), which sought to analyze an integrated model of entrepreneurial intentions among tourism graduates in Iranian universities. These questions' reliability had been confirmed with a Cronbach Alpha (CA) value of 0.837.

While Esfandiar et al. employed a seven-point Likert scale, I opted for a more simplified five-point Likert scale, ranging from "strongly disagree" to "strongly agree." This adjustment aimed to prevent participants from feeling overwhelmed by an extensive array of response options. After importing the survey data into SPSS, I conducted a reliability analysis, resulting in a CA score of 0.888, which comfortably exceeded the recommended threshold of 0.6. Furthermore, the scoring scale underwent recoding, with numerical values assigned, ranging from 1 for "strongly disagree" to 5 for "strongly agree."

Survey questions to test EII – adopted and adapted from Esfandiar et al. (2019); based on Bagozzi et al., 2003; Krueger, 2009

I am determined to create my own or co-owned business in the near future.	**Recoded in SPSS:** Strongly disagree = 1 Somewhat disagree = 2 Neither agree nor disagree = 3 Somewhat agree = 4 Strongly agree = 5	CA: 0.888
I have very seriously thought of starting a firm.		
The probability of starting my own or co-owned business is high in the next 3 years.		

3.3.2 Independent variables

3.3.2.1 Entrepreneurship education

For the Independent Variable (IV) *Entrepreneurship Education (EDU)*, three different responses were available. As many universities have now started to include entrepreneurship courses in their curricula, it was vital to distinguish between participants who had taken a single course and those who had taken several courses or even attended a specialization.

Did you take part in an Entrepreneurship course?	**Recoded in SPSS:** No = 0 Yes, I attended a course (≤ 6 ECTS) = 1 Yes, I attended several courses or a specialization (> 6 ECTS) = 2

3.3.2.2 Gender

For the IV *Gender*, participants could choose between four options (male, female, non-binary/ third gender, prefer not to say). However, since only one person identified themselves as non-binary/third gender, I did not further include this gender in my analysis, as it was not representative. No one in the study sample did not disclose their gender.

What is your gender?	**Recoded in SPSS:** Female = 0 Male = 1 Non-binary/ third gender = 2

3.3.3 Moderating variable

3.3.3.1 Perceived supportive environment

As mentioned in the literature review, research indicates the critical role of incorporating *perceived social norms* as a moderator. This is because it acknowledges the profound impact of individuals' perceptions concerning the expectations and support from significant figures in

their lives – encompassing family, friends, and partners, on their intentions and behaviors. It is worth noting that the influence of these social norms can vary significantly among individuals, contingent on factors like their internal locus of control and propensity for action (Ajzen, 1987; Krueger et al., 2000; Shapero & Sokol, 1982). This underlines the importance of exploring these complexities in order to create a more comprehensive understanding.

Therefore, in this study, I have chosen to integrate the concept of *Perceived Supportive Environment* (coded as SOCNORMS), encompassing perceived support from relevant others and the significance of their opinions. This holistic approach enables a more profound comprehension of how these normative beliefs interplay with individual characteristics and motivations, thereby enriching the model's explanatory capacity.

The survey questions were again adapted from Esfandiar et al. (2019), where they reported a Cronbach Alpha value of 0.747 to confirm the reliability. Surprisingly, in the context of my study, the computed CA yielded a somewhat lower figure at 0.592. Potential explanations for this discrepancy may include variations in the demographics of my sample, differences in survey administration, or even subtle disparities in question interpretation.

Survey questions to test Perceived Supportive Environment – adopted and adapted from Esfandiar et al. (2019); based on Shook & Bratianu, 2010

If I were to start my own business, my parents would be supportive.	**Recoded in SPSS:** Strongly disagree = 1 Somewhat disagree = 2 Neither agree nor disagree = 3 Somewhat agree = 4 Strongly agree = 5	CA: 0.592
If I were to start my own business, my close friends would be supportive.		
If I were to start my own business, my significant other would be supportive.		
If I were to start my own business, my parents' opinions are important to me.		
If I were to start my own business, my close friends' opinions are important to me.		
If I were to start my own business, my significant other's opinion is important to me.		

3.3.4 Control variables

3.3.4.1 Birth year

There are two main reasons that led me to control for the variable 'year of birth' in the moderated regression analysis. First, the majority of my respondents are at the age when individuals typically face career decisions, which could lead to biased results. Second, the levels and type of entrepreneurship education are very likely to be different across generations. Controlling for the year of birth can help to capture these generational effects and ensures that the observed effects of entrepreneurship education are not simply due to generational differences.

3.3.4.2 Self-employment

Another important factor to consider is whether the respondent is already self-employed or in the process of becoming self-employed within the next 12 months. Self-employed individuals are very likely to have a higher tendency towards entrepreneurship, which may influence their entrepreneurial intentions and thus, lead to inflated results.

4 DATA ANALYSIS

The aim of this chapter is to deepen the testing of the previously formulated hypotheses and to uncover the relationships between entrepreneurship education, the perceived supportive environment, gender and entrepreneurial implementation intentions. Through rigorous analysis, I seek to validate the formulated hypotheses and provide valuable insights that contribute to the existing body of literature.

4.1 Correlation table

The correlation table below examines the relationships between key variables that are central to the study of entrepreneurial intentions. By examining the direction of the correlation coefficients, both the robustness and the direction of these relationships between the variables in question can be explored.

	IMPLINT	no EDU	EDU ≤ 6 ECTS	EDU > 6 ECTS	Gender f=0, m=1, non-binary=2	Birth year	Self-empl. no=0, yes=1, in the process=2	SOCIAL NORMS
Impl. Intention (IMPLINT)	1	-,270**	,165*	,151*	,228**	,163*	,328**	-,066
no EDU	-,270**	1	-,606**	-,566**	-,093	-,261**	-,016	,054
EDU ≤ 6 ECTS	,165*	-,606**	1	-,313**	,045	,180**	,089	-,074
EDU > 6 ECTS	,151*	-,566**	-,313**	1	,064	,125	-,073	,012
Gender	,228**	-,093	,045	,064	1	,006	,092	-,226**
Birth year	,163*	-,261**	,180**	,125	,006	1	-,150*	,204**
SelfEmpl.	,328**	-,016	,089	-,073	,092	-,150*	1	-,185**
SOC.NORMS	-,066	,054	-,074	,012	-,226**	,204**	-,185**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 2: Correlations table

First, we can observe that all of the variables included correlate significantly with *Entrepreneurial Implementation Intentions* (IMPLINT). As expected, there is a significant negative correlation between IMPLINT and individuals who have not attended any *Entrepreneurship Education* (no EDU). In contrast, individuals who have attended EDU, show a significant positive correlation with IMPLINT. Interestingly, however, as the amount of ECTS taken increases, IMPLINT seems to decrease. This suggests that individuals with less formal entrepreneurship education may have stronger intentions to implement entrepreneurial activities. Second, we can observe that gender shows a moderate positive correlation with IMPLINT, suggesting that, on average, males tend to have slightly higher entrepreneurial implementation intentions compared to females. Third, the birth year has a significant positive correlation with IMPLINT – leading

me to conclude that younger individuals tend to have higher IMPLINT. This could indicate a generational shift in attitudes toward entrepreneurship (eventually based on the fact that entrepreneurship education is much more common nowadays). Fourth, as expected, self-employed individuals have a strong positive correlation with IMPLINT, as they are likely more inclined toward entrepreneurial activities. Finally, and surprisingly, social norms (= the perceived supportive environment) have a negative correlation with IMPLINT. This suggests that individuals who perceive stronger social norms against entrepreneurship may have lower intentions for entrepreneurial implementation. This is consistent with Bandura's *social cognitive career theory* (SCCT; 1986), suggesting that contextual influences can either reinforce or weaken the relationship between intentions and professional behavior, depending on how the individual perceives their environment.

An additional noteworthy significant correlation is the negative correlation between self-employment and SOCIAL NORMS, indicating that individuals who are self-employed tend to have lower perceptions of conformity to social norms. This is consistent with the theories of Ajzen (1987) and Bagozzi et al. (1992), indicating that an individual with a high internal locus of control (which is a typical trait for an entrepreneur) might be less influenced by his or her environment. Finally, the correlation table shows that individuals react more strongly to their environment as they get older.

To conclude, these correlations provide valuable insights into the relationships between various important variables examined in my further analysis. They suggest that factors such as education, gender, birth year, and social norms play important roles in influencing individuals' intentions to engage in entrepreneurial activities.

4.2 Hypotheses testing

In this chapter, I will explore various statistical tests and techniques that provide a comprehensive evaluation of my research question and hypotheses by shedding light on the interplay of the variables under investigation. With a focus on both parametric and non-parametric methods, this chapter offers a robust examination of my hypotheses, ultimately contributing to a deeper understanding of the phenomena under study.

H1: There is a positive relationship between entrepreneurship education and entrepreneurial implementation intentions.

In order to test the first hypothesis via a multiple linear regression, I had to first test whether the Gauss Markov Assumptions for linear regressions would hold. Therefore, I started looking into important assumptions for my model – the assumptions being *normally distributed residuals, homoscedasticity*, *no multicollinearity, and no autocorrelations in the residuals*.

Model:

Variable category	Definition	Variable coded as
DV	Entrepreneurial Implementation Intentions	IMPLINT
IV (Dummy)	Entrepreneurship Education => no Entrepreneurship Education => Entrepreneurship Education ≤ 6 ECTS => Entrepreneurship Education > 6 ECTS	Dummy variables edu_cod = 0.0 edu_cod = 1.0 edu_cod = 2.0

For the assumption of *normally distributed residuals*, I first carried out some descriptive tests and therefore looked at the histogram, boxplot as well as Q-Q and P-P plots to determine whether the residuals of my dependent variable IMPLINT would be normally distributed. My initial assumption, based on the graphical output, was however not confirmed by analytical tests such as the *Kolmogorov-Smirnov-Test* as well as the *Shapiro-Wilk-Test*. Both resulted in a p-value being lower than 0.05, leading me to reject the Null-hypothesis that the residuals would be normally distributed. Anyhow, after a rigorous online search, I found out that these two analytical tests are highly disputable and would lead to overly sensitive results (e.g.: Mishra et al. (2019)).

Therefore, I had an additional look at the descriptives of the graphical outputs, which confirmed a normal distribution with a *Skewness* of 0.103 and a *Kurtosis* of -1,018, as both values should be close to zero (equal to a normal distribution). The Skewness gives information on whether the data is symmetrically distributed. In my case, a slightly positive skewness indicates that the data is on the right side of the distribution. The Kurtosis provides information about how peaked or tapered the distribution is and whether it deviates significantly from the normal distribution. Thus, my slightly negative kurtosis indicates that the distribution is less peaked than a normal distribution and has flatter tails and fewer extreme values. Lastly, I conducted an additional quality check by applying a z-test that is used for Skewness and Kurtosis. Therefore, the Kurtosis is being divided by its standard error, whereby the result must be in the range of ± 3.29

for a normal distribution. In my case, the z-score was -3.24 and therefore within the range (H.-Y. Kim, 2013). See Appendix 9.1.1 for test results.

To fulfill the *homoscedasticity* assumption, I conducted the Modified Breusch-Pagan Test (Chi-Square: 0.002; Significance (Sig.): 0.969) as well as the White Test (Chi-Square: 0.002; Sig.: 0.999). As the p-values of 0.969 and 0.999 are above the threshold of 0.05 (rejection of Null hypothesis of heteroscedasticity), no significant heteroscedasticity can be confirmed and thus, homoscedasticity can be assumed. See Appendix 9.1.2 for test results.

Multicollinearity is not given as can be derived from the Correlations matrix (see Table 2). Lastly, *autocorrelation* in the residuals was not detected using the Durbin-Watson test (1.954). See Appendix 9.1.3 for test results.

In order to proceed with the regression analysis, it has to be tested whether the model is significant – meaning that the IV contributes to the explanation of the DV. The F-Test in the ANOVA provided a significance of <0.001 and therefore, the analysis can proceed. Additionally, it can be noted that the 6.5% of the variance in Implementation Intentions can be explained by no EDU, EDU ≤ 6 ECTS, and EDU > 6 ECTS.

Examining the t-tests of the regression coefficients, it can be observed that both, the coefficient for Entrepreneurship Education ≤ 6 ECTS (Edu_cod = 1.0) and the coefficient for Entrepreneurship Education > 6 ECTS (Edu_cod = 2.0) are significant. This shows that compared to no Entrepreneurial Education (Edu_cod = 0.0), an additional unit of EDU ≤ 6 ECTS leads to an increase in Entrepreneurial Implementation Intentions of 0.670 units. Interestingly, an additional unit of EDU > 6 ECTS leads to an increase in Entrepreneurial Implementation Intentions (EII) of only 0.665 units and thus has a minimally smaller influence on EII than EDU ≤ 6 ECTS. See Appendix 9.2 for test results.

As a further step I conducted another linear regression to examine the relationship between no Entrepreneurial Education and EII. Significant results show that in comparison to EDU ≤ 6 ECTS, no Entrepreneurial Education has a negative impact on EII by -0.670 units. See Appendix 9.3 for test results. **Hypothesis 1 can therefore not be rejected.**

In addition to the previous linear regressions, I conducted the Mann-Whitney-U-Test – a non-parametric statistical test, used to compare two independent groups. This test is used in situations where the data does not meet the assumptions required for parametric tests (based on certain assumptions about the distribution of the data in the sample) (LaMorte, 2017). The following assumptions for the Mann-Whitney-U-Test have been met: 1) the dependent variable (DV; Entrepreneurial Implementation Intentions (EII)) is measured at an ordinal level; 2) the IV is categorical, consisting of two independent groups; 3) the sampling process was random; and 4) the two measured groups are distributed approximately equally (no participation in entrepreneurship education n = 125; participation n = 114).

Based on the results, H0 (= no difference in the ranks (= means) between the two groups) can be significantly rejected. Results show strong evidence for a significant difference in the ranks of the dependent variable "Entrepreneurial Implementation Intentions" between individuals who attended Entrepreneurship Education (dummy = 1) and individuals who did not attend Entrepreneurship Education (dummy = 0). The negative Z-score of -4.160 indicates that the group with Entrepreneurship Education (EDU) tends to have higher ranks in EII compared to the individuals who did not attend Entrepreneurship Education. See Appendix 9.4 for test results.

In practical terms, these findings imply a significant disparity in EII between individuals with and without Entrepreneurship Education, with the former group displaying notably higher Entrepreneurial Intentions. Besides analyzing whether the difference between the two groups is the statistically significant, I also computed the effect size (= r) of this difference by calculating ($r = z/\sqrt{n}$). The z-score was obtained from the Mann-Whitney-U-Test and n = total number of observations in the two groups combined. This provides a way to quantify the strength of the relationship or difference that has been observed in the data. For this hypothesis, the computed size of the effect is considered low to moderate r = 0.269 ($r = z/\sqrt{n} \rightarrow 4.16/\sqrt{239} = 0.269$) as the thresholds are > 0.1 = low, > 0.3 = medium, > 0.5 = large (Cohen, 1992). **Therefore, H1 can again not be rejected.**

H2: Men generally have higher entrepreneurial implementation intentions than women.

Model:

Variable category	Definition	Variable coded as
DV	Entrepreneurial Implementation Intentions	IMPLINT

IV (Dummy)	Gender => Female => Male	GEN_cod 0 1

Again, the Mann-Whitney-U-Test was applied, as all the assumptions were met (female n = 126; male n = 112). Results indicate that there is a statistically significant difference in the ranks of the DV (EII) between males and females. It was found that the ranks for females tend to be significantly lower than for males (see Appendix 9.5 for test results). The computed size of this effect is again considered low to moderate r = 0.2127 ($r = z/\sqrt{n} \rightarrow 3.282/\sqrt{238} = 0.2127$). **Therefore, H2 will not be rejected.**

H3a: Women who have received entrepreneurship education show greater entrepreneurial implementation intentions than their male counterparts who have also attended such education.

Model:

Variable category	Definition	Variable coded as
DV	Entrepreneurial Implementation Intentions	IMPLINT
IV (Dummy)	Gender & Entrepreneurship Education => Female & EDU (≤ 6 and > 6 ECTS) => Male & EDU (≤ 6 and > 6 ECTS	EDU_fm 0 1

After computing a dummy variable with 0 = female & entrepreneurship education (including 6 and more than 6 ECTS) (n=55), 1 = male & entrepreneurship education (n=58), and 2 = female & male with no entrepreneurship education (n=126), I again applied the Mann-Whitney-U-Test as the distribution between the two measured groups (males & females with EDU) is distributed approximately equally. The statistically significant results, however, show evidence for a difference on EII, with men who attended EDU scoring higher compared to women (see Appendix 9.6 for test results). The computed effect size of this difference is again low to moderate with an r = 0.229 ($r = z/\sqrt{n} \rightarrow 2.435/\sqrt{113} = 0.229$). **This leads me to reject H3a**.

H3b: Entrepreneurship education has a stronger effect on entrepreneurial implementation intentions of women compared to men.

In order to test this assumption, the Kruskal-Wallis Test has been applied, as it is a non-parametric test that is being used when more than two independent groups (which are not normally distributed) are being compared. The assumption (H0) of the Kruskal-Wallis Test is that there is no significant difference in the individuals' medians (= ranks) among the groups.

Model:

Variable category	Definition	Variable coded as
DV	Entrepreneurial Implementation Intentions	IMPLINT
IV (Dummy)	Gender & Entrepreneurship Education	EDU_GEN
	=> Female & no EDU	0
	=> Female & EDU ≤ 6 ECTS	1
	=> Female & EDU > 6 ECTS	2
	=> Male & no EDU	3
	=> Male & EDU ≤ 6 ECTS	4
	=> Male & EDU > 6 ECTS	5

Ranks:

Ranks based on DV: Implementation Intention		N	Mean Rank
f&noEDU=0	0	71	92,61
f&EDU≤6=1	1	30	117,25
f&EDU>6=2	2	25	129,22
m&noEDU=3	3	54	114,93
m&EDU≤6=4	4	29	160,00
m&EDU>6=5	5	29	147,29
	Total	238	

Table 3: Kruskal-Wallis-Test; SPSS Output

With a p-value <0.001 (rejection of H0), the Kruskal-Wallis Test indicates that there is at least one difference in the *Implementation Intention* variable among the groups formed by the combination of *Gender* and *Education* (see Appendix 9.7 for results).

The mean ranks that can be observed in the table above, show the typical ranking within a group. A higher mean rank for example, suggests that, on average, the group's values tend to have higher rankings, indicating larger values for the dependent variable. As evident from the table above, men without EDU exhibit, on average, higher levels of EII compared to women without EDU. However, when both men and women participate in EDU, we can observe varying increases in EII, depending on the number of ECTS pursued.

f&noEDU => f&EDU≤6	m&noEDU => m&EDU≤6	% increase in EII from no EDU to **EDU ≤ 6 ECTS**
92.61 => 117.25 Difference: 24.64	114.93 => 160.00 Difference: 45.07	F: increase in EII by 26.6% M: increase in EII by 39.21%
f&noEDU => f&EDU>6	m&noEDU => m&EDU>6	% increase in EII from no EDU to **EDU > 6 ECTS**
92.61 => 129.22 Difference: 36.61	114.93 => 147.29 Difference: 32.36	F: increase in EII by 39.53 % M: increase in EII by 28.15%

Table 4: Average increase in EII due to participation in EDU

Interestingly, we can observe that on average, the participation of an entrepreneurship class up to 6 ECTS has a stronger increase on EII for males compared to females (39.21% compared to 26.6%). Nevertheless, when males and females attend more than 6 ECTS in entrepreneurship education, the increase on EII is stronger for females than for males (39.53% compared to 28.15%). However, I must address that these results are only tendencies or "trends" but are not significantly proven.

Therefore, in order to make *significant* pairwise comparisons, a post-hoc test is needed – such as the *Pairwise Comparisons* test. This test explores which of these groups are significantly different from one another.

Pairwise Comparisons of f&noEDU=0, f&EDU≤6=1, f&EDU>6=2, m&noEDU=3, m&EDU≤6=4, m&EDU>6=5, 3rdGender&EDU≤6=6

Sample 1 - Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
0-3	-22,359	12,438	-1,798	,072	1,000
0-1	-24,726	15,000	-1,648	,099	1,000
0-2	-36,679	16,019	-2,290	,022	,463
0-5	-54,859	15,180	-3,614	<,001	**,006**
0-4	-67,549	15,180	-4,450	<,001	**,000**
0-6	-122,859	69,366	-1,771	,077	1,000
3-1	2,367	15,685	,151	,880	1,000
3-2	14,320	16,663	,859	,390	1,000
3-5	-32,500	15,858	-2,049	,040	,849
3-4	-45,190	15,858	-2,850	,004	,092

3-6	-100,500	69,518	-1,446	,148	1,000
1-2	-11,953	18,654	-,641	,522	1,000
1-5	-30,133	17,938	-1,680	,093	1,000
1-4	-42,823	17,938	-2,387	,017	,356
1-6	-98,133	70,021	-1,401	,161	1,000
2-5	-18,180	18,799	-,967	,334	1,000
2-4	-30,870	18,799	-1,642	,101	1,000
2-6	-86,180	70,247	-1,227	,220	1,000
5-4	12,690	18,090	,701	,483	1,000
5-6	-68,000	70,060	-,971	,332	1,000
4-6	-55,310	70,060	-,789	,430	1,000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is ,050.
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Table 5: Pairwise Comparison Test; SPSS Output

As the post-hoc Pairwise Comparison test compares several groups at the same time, it is essential to examine the Adjusted Significance to avoid an alpha error (increased risk of falsely identifying differences between the groups) (Arnold, 1990).

Thus, I can only conclude that there is a statistical difference between females with no EDU and males with EDU ≤ 6 or EDU > 6 and therefore, in my sample, the effect of entrepreneurship education on males and females seems to be quite similar.

This leads me to reject H3b.

H4: The perceived supportive environment positively moderates the relationship between entrepreneurship education and entrepreneurial intentions.

To compute this moderation, the Hayes' PROCESS macro (v4.3) for SPSS was installed and used, due to its strong robustness (Hayes, n.d.).

Model:

Variable category	Definition	Variable coded as
DV	Entrepreneurial Implementation Intentions	IMPLINT
IV (Dummy variable)	Entrepreneurship Education => no Entrepreneurship Education => Entrepreneurship Education ≤ 6 ECTS => Entrepreneurship Education > 6 ECTS	Edu_cod 0 1 2

Moderator	Perceived supportive environment	SOCNORMS
Covariates (Control variables)	Birth year of respondent Whether respondent is self-employed => no => yes => In the process – I intend to become self-employed within the next 12 months.	BirthY SelfE_co (dummy) 0 1 2

In the settings of PROCESS, MODEL 1 was chosen, the IV was selected as a categorical variable and the moderator was chosen to be centralized. Centralizing variables involves shifting the reference point of a variable to its mean, allowing a simpler interpretation by deriving effects when all other variables are at their mean values. Additionally, two control variables were set (the *birth year* and whether the person was *self-employed*) to account for and mitigate the potential influence of incidental effects on the measured relationship.

In general, the model is highly statistically significant ($p < 0.01$) which suggests that there is a significant relationship between the variables in the model. The models' R^2 is 22.16%, reflecting the amount of variance of the DV (= IMPLINT) that can be explained by the IV, moderator, as well as their interactions.

By looking more closely into the model, we can derive the following significant results:

- Participants of an Entrepreneurship Class (EDU) with ≤ 6 ECTS have higher Entr. Implementation Intentions compared to participants who did not attend such class (coeff = 0.45). This is statistically significant with a p-value < 0.05.
- This effect is even stronger for participants of EDU > 6 ECTS (coeff = 0.6114) (p-value < 0.05).
- There is no statistically significant relationship between SOCNORMS and IMPLINT.
- The influence of SOCNORMS weakens the relationship between EDU ≤ 6 ECTS and IMPLINT compared to participants with no EDU. (weak evidence with a p-value < 0.1)

Based on the statistical results generated from SPSS, a scatterplot was plotted to visualize the conditional effect of EDU on IMPLINT at different levels of SOCNORMS.

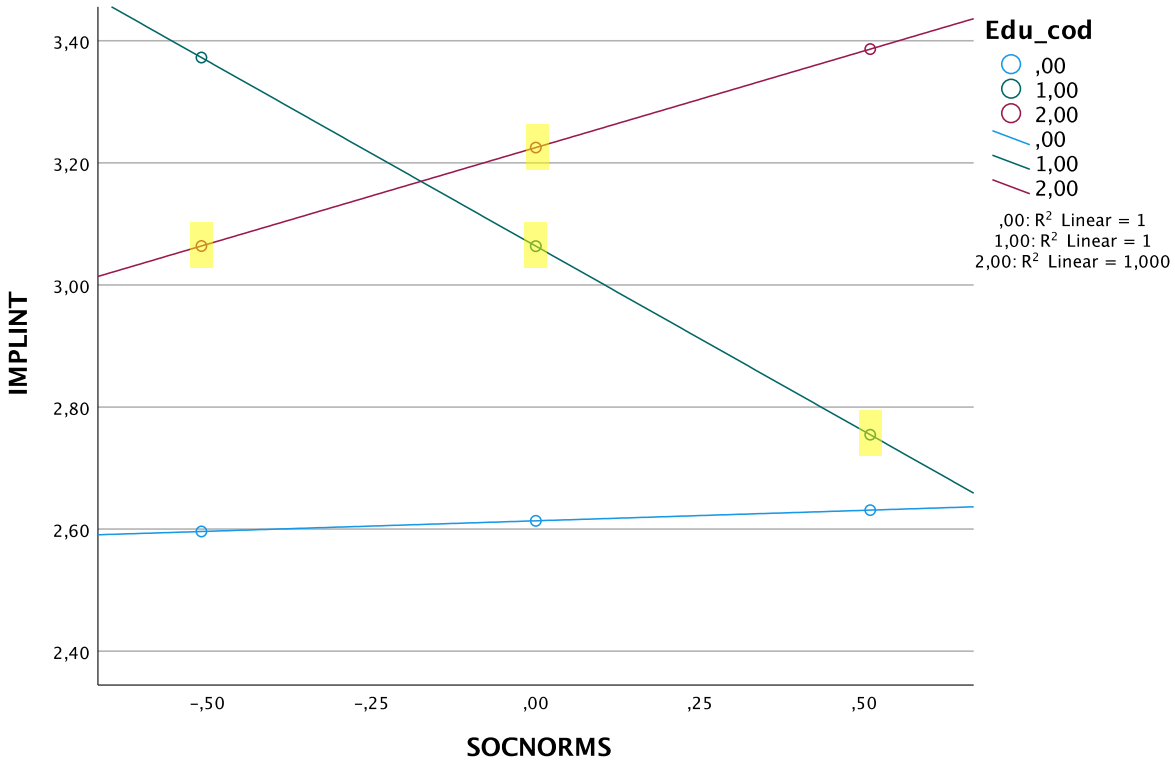

Figure 7: Moderation analysis; SPSS PROCESS Output

As supported by the data, we can observe that the effect of EDU on IMPLINT is not consistent across different levels of SOCNORMS. With no entrepreneurship education (EDU = 0), entrepreneurial implementation intentions marginally increase as social norms increase. This can be also observed for participants of EDU > 6, where the effect is even stronger as social norms increase. However, interestingly, as social norms increase, entrepreneurial implementation intentions decrease for participants with EDU ≤ 6 ECTS.

Further results suggest that the interaction effect between EDU and SOCNORMS is significant under certain conditions but not for others, depending on the values of SOCNORMS and the specific level of EDU. Significant results have been highlighted in yellow (see Graph in Figure 7). Based on the statistically significant results with a p-value < 0.05, we can first observe an increase in SOCNORMS leads to an increase on IMPLINT (EII) for EDU ≤ 6 ECTS. Second, and increase in SOCNORMS leads to a decrease on IMPLINT for EDU > 6 ETCS. See Appendix 9.8 for test results. **This leads me to partially accept H4.**

5 RESULTS

The objective of this research thesis is to evaluate how Entrepreneurship Education impacts Entrepreneurial Implementation Intentions. Recognizing the importance of a perceived supportive environment, an examination was carried out to determine whether it amplifies this relationship within this specific context. In the following sections, I will start by outlining the main findings from this research study and subsequently engage in a discussion regarding the theoretical and practical implications that stem from these findings.

5.1 Overall results

The findings from my study sample indicate that attending Entrepreneurship Education (EDU) has a positive impact on Entrepreneurial Implementation Intentions (EII). It's worth noting that, in general, men tend to exhibit higher EII levels than women, regardless of whether they have participated in an Entrepreneurship class. However, I expected that women who had received such educational training would benefit from a stronger increase in EII compared to men who had received an equal amount of entrepreneurial education. This expectation was grounded in previous research, as highlighted in the literature review, particularly the work of Bae et al. (2014), which suggested that EDU could serve as a vital tool for women to bridge perceived skill gaps and subsequently enhance their entrepreneurial intentions. The underlying assumption was that since men tend to perceive this skill gap to be narrower, females who participated in EDU would experience a greater increase in EII compared to their male counterparts who also participated in EDU.

However, the outcomes of the Kruskal-Wallis-Test did not statistically confirm this expectation. While the increase in EII was stronger for women than men when both attended more than 6 ECTS of entrepreneurial education, the opposite held true when both attended only up to 6 ECTS. In addition to the fact that the results were not statistically significant, I cannot draw consistent conclusions.

A plausible explanation could be that the impact of EDU on EII varies depending on the specific context or content of the educational programs. For example, if both men and women participated in more extensive EDU programs (> 6 ECTS), it is possible that these programs provided a more comprehensive and practical understanding of entrepreneurship, which could have had a positive impact on EII for both genders, but with a slightly stronger impact for women, as the

removal of the perceived skill gap may be greater. In contrast, when both men and women participated in shorter EDU programs (≤ 6 ECTS), these programs may not have been as effective in addressing skills gaps or promoting EII among women compared to men.
This suggests that the impact of EDU on EII may depend on factors such as the duration of the program, its content or teaching methods.

The analysis of H4 has provided valuable insights into the relationship between entrepreneurship education, the perceived supportive environment (thereafter SOCNORMS), and EII. Based on the results, the interaction effect between EDU and SOCNORMS is significant under certain conditions but not for others, depending on the values of SOCNORMS and the specific level of EDU. While some results support the hypothesis, that SOCNORMS would have a positive effect on the relationship between EDU and EII, others do not align with the expected outcomes. This leads to a partial acceptance of H4, indicating that the relationship between EDU, SOCNORMS, and EII is more complex than initially anticipated. Further research and analysis may be required to fully understand the dynamics of these relationships and their implications for EDU and EII.

5.2 Theoretical implications

This thesis holds several theoretical implications for the broader field of entrepreneurship research. While prior research has explored the relationship between Entrepreneurship Education and Entrepreneurial Intentions, this study delves deeper by examining the influence of EDU on *Implementation* Intentions, providing a more nuanced understanding of the impact. Furthermore, prior literature has yielded conflicting findings on this relationship. Therefore, this study contributes to the field in three main ways:

First, one of the most important contributions of this study is that it adds additional empirical evidence to the contradicting existing body of research. In this way, it strengthens our understanding of the complex relationship between EDU and EII. By providing empirical data confirming the importance of EDU in influencing EII, this study reinforces the credibility of previous theoretical and empirical findings. This empirical confirmation adds a valuable foundation of confidence to the ongoing discourse on the impact of EDU on the actual intentions and actions of aspiring entrepreneurs.

Second, it uncovers a gender gap in EII, revealing that EDU fails to bridge the gap between male and female entrepreneurial implementation intentions. While previous research has acknowledged the existence of gender gaps in entrepreneurship, this study goes a step further by investigating whether EDU can act as an equalizer. Surprisingly, it is found that while EDU has an overall impact, it does not bridge the gap between men's and women's entrepreneurial intentions. This finding is critical for policy makers, educators and organizations working to promote gender diversity in entrepreneurship. It suggests that interventions and support structures may need to be tailored to the particular challenges and opportunities faced by aspiring women entrepreneurs, beyond the traditional boundaries of EDU.

Finally, it underscores the importance of further investigating the role of the perceived supportive environment. The results of this analysis have presented a paradoxical scenario. On one hand, an increase in perceived support and perceived significance of the opinions of relevant others have a positive impact on EII for individuals who have not participated in EDU or have completed EDU with more than 6 ECTS. However, as the influence of the social environment intensifies for individuals who have attended EDU with up to 6 ECTS, EII appears to decrease significantly.

There are several underlying reasons that could attribute to the varying impact of a supportive environment on EII based on the extent of EDU:

First, I suggest that individuals with extensive entrepreneurship education (EDU > 6 ECTS) may have a better understanding of the practical aspects need for starting and running a business. Additionally, a perception of strong support from relevant others (family, close friends, and their partner), can reinforce their confidence in their ability to translate intentions into actions. In contrast, those with limited education may still have doubts about the feasibility of entrepreneurial endeavors, and increased support might not alleviate these concerns. Additionally, for individuals with extensive EDU, the positive effect of support from their social network may outweigh any potential normative pressures against entrepreneurship. However, for those with limited EDU, societal norms that favor more traditional career paths may exert a stronger influence, making them less inclined to act on their intentions, even with increased support. As proposed by Esfandiar et al. (2019), social norms can differ significantly across and within cultures. Therefore, it is reasonable to assume that their impact on EII varies depending on the cultural context. Indeed, Elfving et al. (2009) as well as Shook & Bratianu (2010) have shown

that cultures from countries such as the United States or Northern Europe tend to be more supportive when it comes to individuals engaging in venture creation – in comparison to other European countries. One of the underlying reasons for this could be that EDU in these countries is much more supported and recognized. Furthermore, Schlaegel & Koenig (2014) propose that the relationship between subjective norm and entrepreneurial intentions has "a stronger positive association in Western countries" (p. 317) as "individuals in Western societies define themselves in terms of their actions and, at the same time, are bound to societal norms" (p. 317). Another interesting finding from the meta-analytic review conducted by Schlaegel & Koenig (2014) is that the relationship of social norms on EI has been stronger in more recent studies – leading to the conclusion that this relationship tends to become stronger nowadays. These findings could explain the relatively strong effect of social norms on EII.

Second, individuals with limited EDU may be more risk-averse when it comes to entrepreneurship due to their perceived lack of perceived behavioral control. Increased support from relevant others might not mitigate this risk aversion and may even raise concerns about potential failures.

Third, extensive EDU may promote a sense of autonomy and self-efficacy. When individuals with such education receive support, they might interpret it as encouragement rather than pressure. In contrast, those with limited EDU might perceive support as expectations they cannot meet, leading to a decrease in EII.

Lastly, the relationship between EDU, social support, and EII is likely complex, involving multiple interaction effects. The interplay between these factors could lead to different outcomes depending on individual circumstances and contexts.
This paradox highlights the complexity of the relationship between social factors and entrepreneurial intentions, arguing for further research and analysis.

5.3 Practical implications

From a practical perspective, the results of this study are of importance on several levels.
First, they hold relevance to institutional factors such as policymakers, regulators and educators, as they play a significant role in shaping entrepreneurial activity. This can become particularly vital in the context of post-pandemic economic recovery. As economies seek revitalization and innovation as a consequence of Covid-19, fostering a new generation of bold

entrepreneurs becomes crucial. This can be achieved through equipping them with essential entrepreneurial skills and facilitating access to critical resources, including networking opportunities and financial support. The study underscores the pivotal role that education and support mechanisms can play in driving entrepreneurial intentions and, subsequently, the creation of new ventures.

Second, the findings of this study shed light on the ongoing debate surrounding the impact of a supportive social environment on entrepreneurial implementation intentions (EII). Given the divergence in opinions on this matter, there is a compelling case for increased investment in professional support programs, such as accelerators. These programs can bridge potential gaps in social support by offering structured guidance, mentorship, and resources that nurture entrepreneurial initiatives. By doing so, they not only complement traditional educational efforts but also provide a holistic ecosystem for aspiring entrepreneurs, potentially mitigating the influence of conflicting social norms and uncertainties associated with venture creation.

Third, although the results discussed in hypothesis 3b are not statistically significant, there is an observable trend suggesting that entrepreneurial education does exert a notable influence on entrepreneurial implementation intentions. It remains to be investigated which combinations of factors lead to a significantly stronger increase in intentions and the practical implementation thereof. I therefore encourage researchers, policymakers and educators to follow up on these findings for a more comprehensive understanding and potential application in the further development of (entrepreneurship) curricula.

In essence, this research advocates for a multifaceted approach to entrepreneurship development, where policymakers and educators collaborate to empower future entrepreneurs with the necessary skills and networks, while recognizing the value of professional support programs in navigating the complex interplay between education, social support, and entrepreneurial implementation intentions. Such an integrated strategy holds promise in fostering a more robust and resilient entrepreneurial landscape, essential for post-pandemic economic rejuvenation and long-term innovation.

6 LIMITATIONS

In this chapter I would like to address some limitations of my research study. Acknowledging the limitations is crucial as it adds transparency and credibility to my research conducted and

helps to set realistic expectations for the findings of this thesis. Furthermore, limitations provide guidance for the direction of possible future research.

First and foremost, a very common limitation is the fact that the data is based on a *single source of data collection* (in my case through a self-reported questionnaire). Collecting results via only one source can lead to common method variance, meaning that the variables measured could be artificially stronger correlating than they would be if more than one measurement method would have been applied. However, according to Chan (2009; as cited in Adeel et al. 2023), a self-reported questionnaire is suitable when the data being collected is based on individuals' perceptions, behaviors, beliefs, and similar subjective aspects.

Furthermore, as discussed in the Methodology (Chapter 3), most of the *respondents surveyed are currently facing career decisions*, possibly leading to inflated perceptions of entrepreneurial implementation intentions.

Additionally, as a time and cost saving sampling method has been applied (by distributing a self-reported questionnaire), the *geographical area of respondents is limited to a few countries* represented. This is a limitation I was aware of from the beginning, which is why I was engaged in trying to reach additional respondents from the United States, for example, through the snow-ball sampling technique. Given that entrepreneurship and related programs are considerably more prevalent in the United States compared to Europe, I anticipated that including them in my survey sample would have a mitigating effect on the inflation of my results.

Another limitation is that the results of this research only represent a *snapshot*, indicating that the relationships investigated on, are very likely to be influenced by many more internal and external factors.

Lastly, regardless of how well intentions predict actual behavior, *longitudinal data* on entrepreneurship education and actual venture creation would provide a deeper understanding. This is supported by a study conducted by Guerrero et al. (2008), who revealed that among individuals expressing strong intentions to engage in venture creation, only half of them effectively translated those intentions into actual venture creation.

7 FUTURE RESEARCH OUTLOOK

Based on the limitations as well as the general findings of my research, there are several aspects that deserve to be further investigated.

First, one way to generalize my findings would be to replicate this study in a different geographical context to determine whether similar results can be expected.
Second, to better understand whether there is a generational difference in entrepreneurial intentions, I suggest replicating this study including more working professionals who are currently not considering major career changes or decisions.

Third, the use of multiple data collection methods should be considered to assess whether there are significant differences in the results. For example, combining surveys with qualitative interviews or observations may provide a richer and more nuanced perspective on the effect of entrepreneurship education on entrepreneurial intentions.

Fourth, to account for time lag between intent and action, I advise future scholars in this field to follow survey respondents over a longer period of time. This could additionally shed light on facilitating or hindering factors that impact the translation of intention into actions.

Finally, future research could be based on comparison groups to investigate how the duration of entrepreneurship education programs, as well as specific methods applied, impact entrepreneurial intentions. This could provide valuable insights for the long-term impact of such initiatives.

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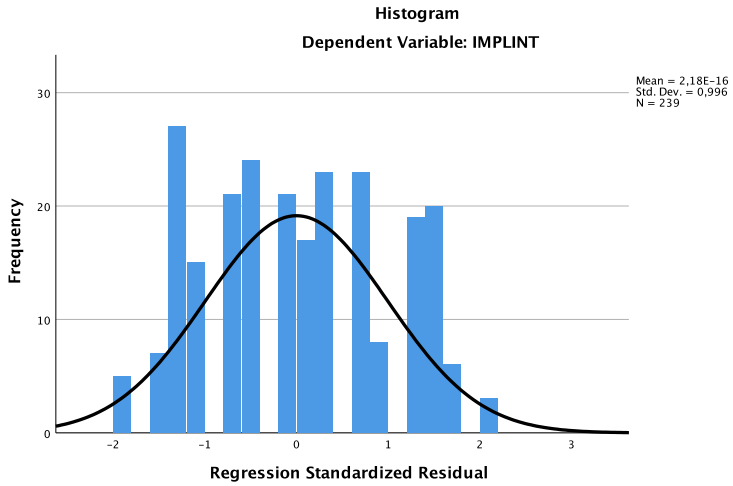
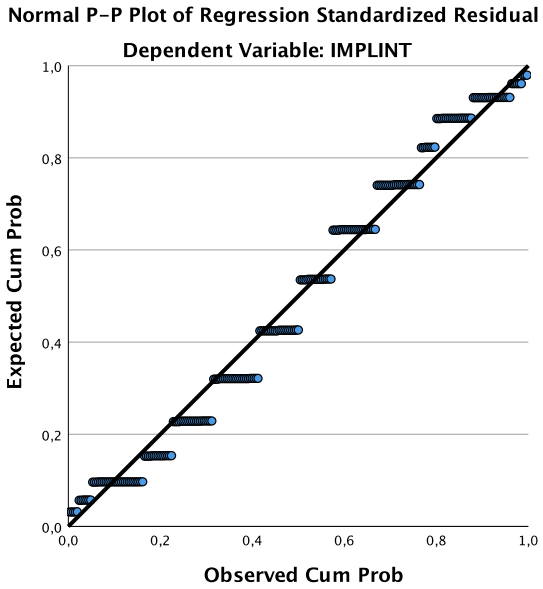
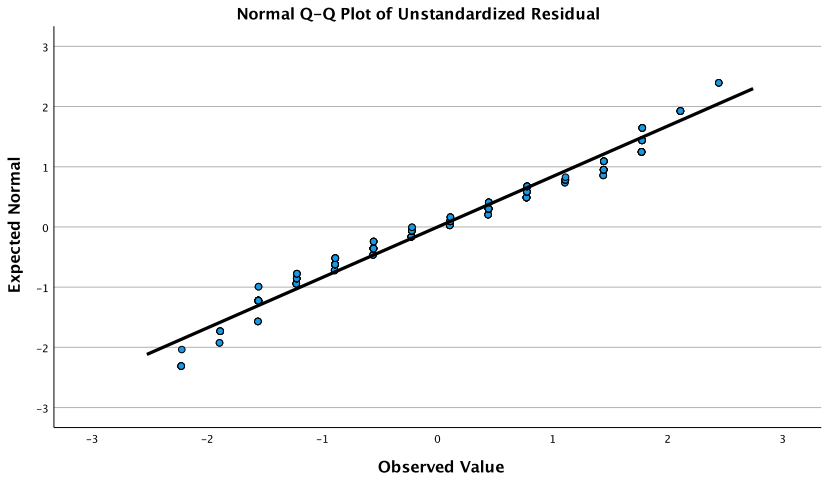
9 APPENDIX

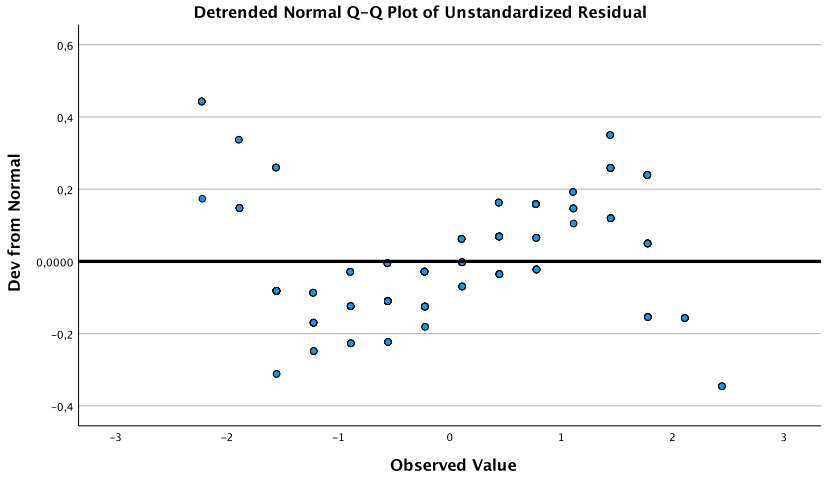
9.1 Testing assumptions for linear regression

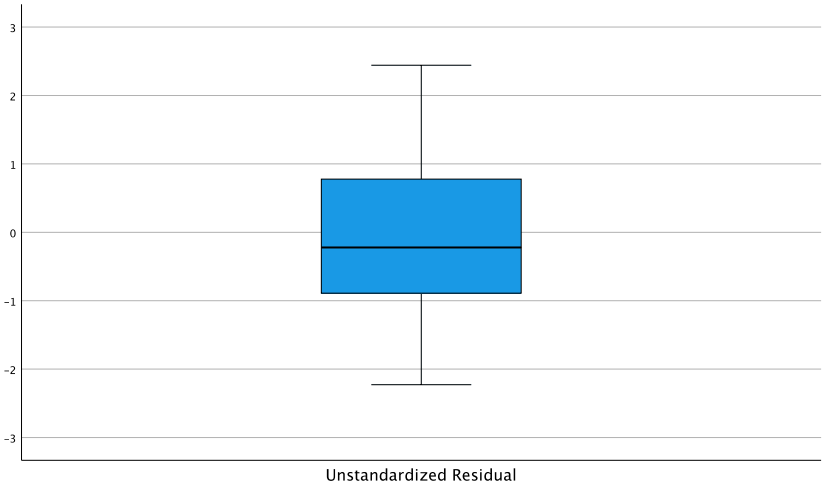
9.1.1 Normally distributed residuals






Normal Q-Q Plot of Unstandardized Residual
Expected Normal
Observed Value
3
2
1
0
-1
-2
-3


Detrended Normal Q-Q Plot of Unstandardized Residual
Dev from Normal
Observed Value
0,6
0,4
0,2
0,0000
-0,2
-0,4


3
2
1
0
-1
-2
-3
Unstandardized Residual

Descriptives

			Statistic	Std. Error
Unstandardized Residual	Mean		,0000000	,07714263
	95% Confidence Interval for Mean	Lower Bound	-,1519696	
		Upper Bound	,1519696	
	5% Trimmed Mean		-,0044455	
	Median		-,2222222	
	Variance		1,422	
	Std. Deviation		1,19259608	
	Minimum		-2,22778	
	Maximum		2,44267	
	Range		4,67044	
	Interquartile Range		1,66844	
	Skewness		**,103**	**,157**
	Kurtosis		**-1,018**	**,314**
Standardized Residual	Mean		,0000000	,06441227
	95% Confidence Interval for Mean	Lower Bound	-,1268910	
		Upper Bound	,1268910	
	5% Trimmed Mean		-,0037119	
	Median		-,1855503	
	Variance		,992	
	Std. Deviation		,99578945	
	Minimum		-1,86014	
	Maximum		2,03957	
	Range		3,89971	
	Interquartile Range		1,39311	
	Skewness		**,103**	**,157**
	Kurtosis		**-1,018**	**,314**

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	,094	239	<,001	,962	239	<,001
Standardized Residual	,094	239	<,001	,962	239	<,001

a. Lilliefors Significance Correction

9.1.2 Testing for Homoscedasticity

Modified Breusch-Pagan Test for Heteroskedasticity[a,b,c]

Chi-Square	df	Sig.
,002	1	,969

a. Dependent variable: IMPLINT

b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.

c. Predicted values from design: Intercept + DEDU_1 + DEDU_2 + DEDU_3

The *Modified* Breusch-Pagan Test is being used when residuals are approx. normally distributed but the Kurtosis deviates from a perfectly normally distribution (Abdul-Hameed & Matanmi, 2021).

White Test for Heteroskedasticity[a,b,c]

Chi-Square	df	Sig.
,002	2	,999

a. Dependent variable: IMPLINT

b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.

c. Design: Intercept + DEDU_1 + DEDU_2 + DEDU_3 + DEDU_1 * DEDU_1 + DEDU_1 * DEDU_2 + DEDU_1 * DEDU_3 + DEDU_2 * DEDU_2 + DEDU_2 * DEDU_3 + DEDU_3 * DEDU_3

9.1.3 Testing for Autocorrelation

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,270[a]	,073	,065	1,198	1,954

a. Predictors: (Constant), Edu_cod=2.0, Edu_cod=1.0

b. Dependent Variable: Implementation Intention

9.2 Multiple Linear Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Edu_cod=2.0, Edu_cod=1.0[b]	.	Enter

a. Dependent Variable: Implementation Intention

b. Tolerance = ,000 limit reached.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	,270[a]	,073	,065	1,198	,073	9,270	2	236

Model Summary[b]

Model	Change Statistics
	Sig. F Change
1	<,001

a. Predictors: (Constant), Edu_cod=2.0, Edu_cod=1.0

b. Dependent Variable: Implementation Intention

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26,591	2	13,296	9,270	<,001[b]
	Residual	338,504	236	1,434		
	Total	365,095	238			

a. Dependent Variable: Implementation Intention

b. Predictors: (Constant), Edu_cod=2.0, Edu_cod=1.0

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,557	,107		23,874	<,001
	Edu_cod=1.0	,670	,188	,235	3,564	<,001
	Edu_cod=2.0	,665	,195	,225	3,409	<,001

a. Dependent Variable: Implementation Intention

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Edu_cod=0.0	.[b]	.	.	.	,000

a. Dependent Variable: Implementation Intention

b. Predictors in the Model: (Constant), Edu_cod=2.0, Edu_cod=1.0

9.3 Multiple Linear Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	,270[a]	,073	,065	1,198	,073	9,270	2	236

Model Summary[b]

Model	Change Statistics
	Sig. F Change
1	<,001

a. Predictors: (Constant), Edu_cod=2.0, Edu_cod=0.0

b. Dependent Variable: Implementation Intention

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26,591	2	13,296	9,270	<,001[b]
	Residual	338,504	236	1,434		
	Total	365,095	238			

a. Dependent Variable: Implementation Intention

b. Predictors: (Constant), Edu_cod=2.0, Edu_cod=0.0

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,228	,155		20,876	<,001
	Edu_cod=0.0	-,670	,188	-,271	-3,564	<,001
	Edu_cod=2.0	-,006	,225	-,002	-,025	,980

a. Dependent Variable: Implementation Intention

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,56	3,23	2,88	,334	239
Residual	-2,228	2,443	,000	1,193	239
Std. Predicted Value	-,953	1,053	,000	1,000	239
Std. Residual	-1,860	2,040	,000	,996	239

a. Dependent Variable: Implementation Intention

9.4 H1: Mann-Whitney-U-Test

Ranks

	Entrep. Edu. dummy (0=no; 1=yes)	N	Mean Rank	Sum of Ranks
II_cod_mean	0	125	102,30	12787,50
	1	114	139,41	15892,50
	Total	239		

Test Statistics[a]

	II_cod_mean
Mann-Whitney U	4912,500
Wilcoxon W	12787,500
Z	-4,160
Asymp. Sig. (2-tailed)	<,001

a. Grouping Variable: Entrep. Edu. dummy (0=no; 1=yes)

9.5 H2: Mann-Whitney-U-Test

Ranks

	f = 0; m = 1; non-binary = 2	N	Mean Rank	Sum of Ranks
II_cod_mean	0	126	105,74	13323,50
	1	112	134,98	15117,50
	Total	238		

Test Statistics[a]

	II_cod_mean
Mann-Whitney U	5322,500
Wilcoxon W	13323,500
Z	-3,282
Asymp. Sig. (2-tailed)	,001

a. Grouping Variable: f = 0; m = 1; non-binary = 2

9.6 H3a: Mann-Whitney-U-Test

Ranks

	fEdu=0; mEdu=1, else=2	N	Mean Rank	Sum of Ranks
Implementation Intention	0	55	49,33	2713,00
	1	58	64,28	3728,00
	Total	113		

Test Statistics[a]

	Implementation Intention
Mann-Whitney U	1173,000
Wilcoxon W	2713,000
Z	-2,435
Asymp. Sig. (2-tailed)	,015

a. Grouping Variable: fEdu=0; mEdu=1, else=2

9.7 H3b: Kruskal-Wallis-Test

Ranks

	f&noEDU=0, f&EDU≤6=1, f&EDU>6=2, m&noEDU=3, m&EDU≤6=4, m&EDU>6=5, 3rdGender&EDU≤6=6	N	Mean Rank
Implementation Intention	0	71	92,61
	1	30	117,25
	2	25	129,22
	3	54	114,93
	4	29	160,00
	5	29	147,29
	Total	238	

Test Statistics[a,b]

	Implementation Intention
Kruskal-Wallis H	26,554
df	5
Asymp. Sig.	<,001

a. Kruskal Wallis Test

b. Grouping Variable: f&noEDU=0, f&EDU≤6=1, f&EDU>6=2, m&noEDU=3, m&EDU≤6=4, m&EDU>6=5, 3rdGender&EDU≤6=6

9.8 H4:

Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2 *****************

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2022). www.guilford.com/p/hayes3

****

Model : 1

Y : IMPLINT

X : Edu_cod

W : SOCNORMS

Covariates:

BirthY SelfE_co

Sample

Size: 239

Coding of categorical X variable for analysis:

Edu_cod	X1	X2
,000	,000	,000
1,000	1,000	,000
2,000	,000	1,000

****

OUTCOME VARIABLE:
IMPLINT

Model Summary

R	R-sq	MSE	F(HC3)	df1	df2	p
,4707	,2216	1,2303	8,6914	7,0000	231,0000	,0000

Model

	coeff	se(HC3)	t	p	LLCI	ULCI
constant	-33,2936	13,8670	-2,4009	,0171	-60,6156	-5,9716
X1	,4500	,1778	2,5302	,0121	,0996	,8004
X2	,6114	,1834	31,3340	,0010	,2501	,9728
SOCNORMS	,0343	,2176	,1578	,8747	-,3944	,4631
Int_1	-,6412	,3434	-1,8673	,0631	-1,3177	,0354
Int_2	,2824	,3742	,7548	,4512	-,4548	1,0197
BirthY	,0179	,0070	2,5783	,0106	,0042	,0317
SelfE_co	,9301	,1645	5,6526	,0000	,6059	1,2543

Product terms key:

Int_1	:	X1	x	SOCNORMS
Int_2	:	X2	x	SOCNORMS

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	,0199	2,9272	2,0000	231,0000	,0555

Focal predict: Edu_cod (X)
Mod var: SOCNORMS (W)

Conditional effects of the focal predictor at values of the moderator(s):

Moderator value(s):
SOCNORMS -,5091

	Effect	se(HC3)	t	p	LLCI	ULCI
X1	,7764	,2571	3,0203	,0028	,2699	1,2829
X2	,4676	,2575	1,8160	,0707	-,0397	,9750

Test of equality of conditional means

F(HC3)	df1	df2	p
4,8332	2,0000	231,0000	,0088

Estimated conditional means being compared:

Edu_cod	IMPLINT

```
    ,0000     2,5961
   1,0000     3,3725
   2,0000     3,0638
----------
Moderator value(s):
SOCNORMS     ,0000

      Effect       se(HC3)         t         p      LLCI      ULCI
X1     ,4500     ,1778     2,5302     ,0121     ,0996     ,8004
X2     ,6114     ,1834     3,3340     ,0010     ,2501     ,9728

Test of equality of conditional means
    F(HC3)       df1       df2         p
    6,7738     2,0000   231,0000     ,0014

Estimated conditional means being compared:
   Edu_cod    IMPLINT
    ,0000     2,6136
   1,0000     3,0636
   2,0000     3,2251
----------
Moderator value(s):
SOCNORMS     ,5091

         Effect      se(HC3)         t         p       LLCI      ULCI
X1     ,1235     ,2414     ,5116     ,6094    -,3522     ,5992
X2     ,7552     ,2712     2,7849     ,0058     ,2209     1,2896

Test of equality of conditional means
    F(HC3)       df1       df2         p
    3,9403     2,0000   231,0000     ,0208

Estimated conditional means being compared:
   Edu_cod    IMPLINT
    ,0000     2,6311
   1,0000     2,7546
   2,0000     3,3863

************************ ANALYSIS NOTES AND ERRORS ************************
Level of confidence for all confidence intervals in output:
  95,0000
W values in conditional tables are the mean and +/- SD from the mean.
NOTE: A heteroscedasticity consistent standard error and covariance matrix estimator was used.
NOTE: The following variables were mean centered prior to analysis: SOCNORMS
------ END MATRIX -----
```

10 SURVEY

INTRO MESSAGE

Thank you for taking the time to participate in this survey!

I am Roxane, a Master student from Católica Lisbon SBE and Bocconi University. In this study I seek to understand factors impacting entrepreneurial intentions.
The survey will take approximately 3-4 minutes. Perfect for a short little break!

Participating in this research is voluntary. Please note that there are no right or wrong answers, and I am interested in your personal opinion! The responses you provide in the survey will be completely confidential and anonymous.

In case you have any questions or concerns, please do not hesitate to contact me via email: roxane.kohler@studbocconi.it.

Thank you again for your time and support! :)
****

DEMOGRAPHIC FACTORS

What is your gender

- Male
- Female
- Non-binary / third gender
- Prefer not to say

In what year were you born?

- Text entry

In which country have you spent most of your time in the past 5 years?

- Drop down menu for country list

Highest level of education

- Primary Education
- Secondary Education
- University Bachelor's Degree
- University Master's Degree
- University PhD Degree
- Other: (Text entry)

Did you take part in an Entrepreneurship course?

- Yes, I attended a course (≤ 6 ECTS)

- Yes, I attended several courses or a spezialisation (> 6 ECTS)
- No

Are you currently self-employed?

- Yes
- No
- In the process – I intend to become self-employed within the next 12 months.

Please provide details about your work experience. How long have you worked for so far?

- None: I have no prior work experience.
- Less than 1 year
- 1-3 years
- 3-5 years
- 5-10 years
- More than 10 years

What is your disposable income per year?

- I'm a student earning nothing or less than 600€ per month.
- 0 – 30k €
- 31k – 60k €
- 61k – 90k €
- 91k – 120k €
- > 121k €
- Prefer not to say

****

ENTREPRENEURIAL INTENTIONS

Single choice questions with following possible answers:

Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree

If I were to start my own business…

- … my parents would be supportive.

- … my close friends would be supportive.
- … my significant other would be supportive.
- … my parents' opinion is important to me.
- Attention check: please click "Strongly agree"
- … my close friends' opinions are important to me.
- … my significant other's opinion is important to me.

Implementation-intention

- I am determined to create my own or co-owned business in the near future.
- I have seriously thought of starting a firm.
- The probability of starting my own or co-owned business is high in the next 3 years.