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Role of subjective norms in shaping entrepreneurial intentions among students in Finland

International Business

Master's thesis

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This thesis explores the role of subjective norms in shaping entrepreneurial intentions among students in Finland, with a particular focus on how the subjective norms interact with behavioral, experiential, and demographic variables. This study examines both direct and indirect influences of subjective norms, emphasizing the mediating roles of attitudes toward entrepreneurship and perceived behavioral control guided by the Theory of Planned Behavior (TPB).

Using quantitative analysis techniques such as regression analysis, mediation analysis, and ANOVA, the study discovers that subjective norms significantly impact entrepreneurial intentions, primarily through behavioral mediators. Attitudes toward entrepreneurship emerged as the strongest influencing factor. Perceived behavioral control also showed a significant impact. Interestingly, while the presence of entrepreneurs in individual's network had a positive effect on subjective norms, exposure to highly successful entrepreneurs exposed a negative association. Demographic factors such as gender, age, and education level were found to have no significant effect.

The study contributes to entrepreneurial intention literature by refining the understanding of how social influences operate through internal cognitive processes. It offers practical recommendations for educators, policymakers, and institutional leaders, urging them to prioritize confidence-building, mentorship, and inclusive entrepreneurship programs. By addressing both theoretical and practical dimensions, this research supports the development of a more nuanced and effective approach to fostering entrepreneurship in higher education.

Key words: Subjective Norms, Entrepreneurial Intentions, Theory of Planned Behavior, Attitudes towards entrepreneurship, Perceived Behavioral Control, University student.

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As a graduate student studying International Business at Turku School of Economics, this research subject is incredibly meaningful to me because it directly relates to my educational background. During my bachelor's studies, I was introduced to entrepreneurial courses, which initially sparked my curiosity in this area. Now, conducting this research as part of my master's thesis facilitates me to bridge the gap between academic knowledge and real-world application. It is a thrilling opportunity to examine the societal factors that influence the intentions of students to pursue entrepreneurship within the very institution that has developed my own fascination with this field.

Investigating the impact of subjective norms on students engaging in entrepreneurship is a great fit for my academic path and personal goals. The conclusions of this study not only add valuable insights to the field but also have the potential to inspire and empower future generations of students interested in entrepreneurship. By discovering the social influences that students may confront, this research can help establish a welcoming environment that promotes and recognizes entrepreneurial aspirations.

This research enables me to merge my educational background with my passion for entrepreneurship. Helping to enhance the knowledge about student entrepreneurship at the University of Turku feels like a natural progression in my academic path and a significant means to contribute to the institution that has influenced my own goals.

1 Introduction

This chapter provides a background and the objectives of the study. It explores the subjective norms in entrepreneurial intentions, student's entrepreneurship in Finland and outlines the study's aim to investigate the role of subjective norms to shape the entrepreneurial intentions among students in Finland. The chapter also includes the scope of the study and provides a brief roadmap for the subsequent chapters.

1.1 Background of the Problem

Entrepreneurship is widely recognized as a key driver of economic growth and innovation across the globe. It contributes to job creation, fosters innovation, and enhances the competitiveness of the workforce. As such, its role in stimulating economic development has been extensively acknowledged. (Stoica et al. 2020, 2) The rapid pace of technological advancement and global connectivity has significantly transformed the modern business landscape, making innovation and entrepreneurship central themes across various industries (Sutrisno et al. 2023, 591). In response, governments around the world are increasingly promoting entrepreneurship among students by supporting entrepreneurial activities within universities (World Economic Forum 2023; U.S. Economic Development Administration, 2021). This growing emphasis is not surprising, considering that many successful companies such as Google, Reddit, Snapchat, and Facebook were founded by students (Neneh & Dzomonda 2024, 1).

It is widely accepted that entrepreneurship is a behavioral outcome, and it begins when an individual develops an intention to launch a business earlier than participating in actual business activities (Kong et al. 2020, 1). As the world is constantly changing, it has become pivotal for educational institutions around the globe to identify entrepreneurial talent among students. Universities have started incorporating courses on entrepreneurship to distinguish the value of promoting an entrepreneurial mindset. Students will receive the necessary information, skills, and mindsets to succeed in their entrepreneurial careers. (Kusumojanto et al. 2020, 456) Universities play a major role in fostering the next generation of entrepreneurs (McKellar 2020, 3). Though there are more emphasis on the entrepreneurship initiatives and student enthusiasm in this field, many students find it difficult to transform their ideas into visible outcomes (Harahap et al. 2023, 14564). So, there exists a discrepancy between students' interest in entrepreneurship

and their practical engagement in entrepreneurial endeavours (Fayolle & Liñán 2014, 665). Research also indicates a significant gap in understanding the factors that influence students' entrepreneurial intentions and behaviours. One of the crucial factors is subjective norms. (Ajzen 2020, 321)

Theory of Planned Behaviour (TPB) which provides a theoretical basis for realizing how subjective norms impact people's intentions and following actions was established by Ajzen (1991, 182). Attitude towards behavior and perceived behavioral control are another two components of the theory of planned behavior which have been researched extensively and found direct impact on entrepreneurial intentions (e.g., Zhao et al. 2005, 1265; Krueger et al. 2000, 413). However, previous empirical research has been lacking consistency in determining the impact of subjective norms, precisely how social pressure from family, friends, and peer's shapes student intentions towards entrepreneurship. In a global circumstance, the direct impact is frequently insignificant, whereas the indirect effect is occasionally supported. (González-Serrano et al. 2018, 400).

To explore these inconsistency, further investigation is necessary in order to gain a complete understanding of student entrepreneurial intentions and their intricate connections with subjective norms among students in Finland. This inquiry transitions smoothly into the forthcoming section, to explore the subjective norms in entrepreneurial intentions.

1.2 Subjective Norms (SN) in Entrepreneurial Intentions

Subjective Norm (SN) is one of the three core components of the theory of planned behaviour (TPB) which describe how individuals perceive social pressure from their important people in their lives, such as family, friends, and peers, when it comes to entrepreneurship (Ozaralli et al. 2016, 6). In the TPB theory, behavioral intention is controlled by three factors: attitude toward behavior which means an individual's assessment of whether a particular behavior is favourable or unfavourable, subjective norms which means their perception of societal expectations to accomplish or refrain from that behavior and perceived behavior control which means their perception of how easy or tough it is to perform the behavior (Ajzen 1991, 181).

Furthermore, subjective norms can exert psychological pressure on individuals, particularly students, by reflecting the expectations and opinions of important referent

groups (Wahyuni et al. 2019, 344). Similarly, Feldman (1995) emphasizes that subjective norms are shaped not only by perceived social expectations but also by the individual's motivation to comply with these norms, which are deeply rooted in their surrounding environment. This idea is measured by assessing how much individuals believe that significant people in their lives (such as family, friends, or other significant people) support or discourage their involvement in entrepreneurship. (Ajzen 1991, 181)

Students are influenced by the people around them who are already successful entrepreneurs and their support shapes the entrepreneurial intentions among students. Subjective norms provide self-confidence to persons to receive support from peers, family, and other influential individuals around them. A student tends to show higher intention to entrepreneurship who has support from peer, family and people around him/her compared to the students who do not have support from those. (Wahyuni et al. 2019, 344).

Having established the conceptual foundation of subjective norms and their role within the theory of planned behavior, it is important to contextualize this within the broader entrepreneurial ecosystem in which students operate. In Finland, a country known for its robust innovation infrastructure and support for entrepreneurship, students are immersed in a dynamic environment that can significantly influence their entrepreneurial intentions. (Dutta et al. 2023, 56-58) The following section delves into the landscape of student entrepreneurship in Finland.

1.3 Student Entrepreneurship in Finland

Finland is a highly developed innovation driven country with national conditions, such as state policy, business regulations, financing, technology development, infrastructure, market dynamics and education that are favourable to entrepreneurship (Bosma et al. 2010, 32). There were around 443,731 companies in Finland in 2022, excluding agriculture, forestry and fishing sectors. Around 95.5% of these companies are micro-enterprises (Each employing fewer than 10 people). Small and medium-sized enterprises (SMEs) have more than half (54.2%) in total turnover for companies in Finland employing around 1.45 million persons. (yrittajat.fi, Information about Yrittäjät, Entrepreneurship in Finland 2025).

According to Josefiina Kotilainen, the CEO of Startup Foundation, Student-driven entrepreneurial organisations are playing an important role in encouraging innovation and promoting an entrepreneurial mindset among the students in Finland (Entrepreneurship Society Impact Report 2023, 5). Currently there are at least 17 active student-driven, volunteer-based and non-profit entrepreneurial organizations (See appendix 1) in almost every university in Finland (startup-saatio.fi, Resources, Entrepreneurship Societies in Finland 2025).

According to the Entrepreneurship Society Impact Report (2023), Companies founded by entrepreneurship societies (ES) alumni collectively contribute over €376 million to the Finnish GDP, accounting for more than 0.1% of the total GDP, employed more than 12,000 manpower which counts for around 0.8% of private sector employment. These companies have collectively raised over €1.1 billion in venture capital, underlining their ability to attract investment. These contributions emphasize the growing importance of student entrepreneurship in Finland. (Entrepreneurship Society Impact Report 2023, 25) There are at least 17 companies founded by alumni of student-driven entrepreneurial societies; each generated a revenue of at least 2 million euros in 2022 (See appendix 2).

Given the exciting entrepreneurial environment in Finland and the critical role that student-driven initiatives play in fostering innovation and new ventures, it becomes essential to understand what motivates students to pursue entrepreneurship within this context. The next section outlines the central research question and the structure of this study, which aims to explore how subjective norms affect the entrepreneurial intentions of students in Finland.

1.4 Research Question and Structure of the Study

This study primarily seeks to investigate how subjective norms influence the entrepreneurial intentions among students in Finland. The main purpose of this study is specified by the research question: *How do subjective norms influence students' entrepreneurial intentions in Finland?*

In order to achieve the purpose of this research, the study applies a quantitative approach using the data collected from students. The rest of the thesis is organized as follows. First, it explores the existing literature on entrepreneurship, entrepreneurial intention, influence of subjective norms on students' entrepreneurial intention, influence of demographic

variables on students' entrepreneurial intention and research model. This specifies a clear overview and explains the reasons behind the study's hypotheses.

After the theoretical exploration, the study moves into methodology section. At this point, the research design, types of variables, data collection methods, measurement scales, data analysis approach and evaluation of this study are thoroughly charted. This methodological clarity is essential for ensuring the legitimacy and trustworthiness of the outcomes. In the next chapter, experimental findings derived from the data analysis are presented. These findings recommend valued insights into how subjective norms influence the entrepreneurial intentions among students in Finland.

The findings are followed by a discussion on theoretical contributions and practical implications. The chapter concludes with a critical reflection on limitations and directions for future research. By acknowledging these contributions and limitations, this study heads the way for further study and refinement of understanding in this domain.

Having outlined the research objectives and structure of this study, it is essential to ground the investigation within the existing academic discourse. The following chapter presents a comprehensive review of the relevant literature on entrepreneurship and entrepreneurial intentions, with a focus on the Theory of Planned Behavior and the role of subjective norms. This theoretical foundation will guide the development of the research hypotheses and model.

2 Literature Review

This section provides a summary of existing literature, focusing on topics such as entrepreneurship, entrepreneurial intention, entrepreneurial intention explained by the theory of planned behavior (TPB), influence of subjective norms on students' entrepreneurial intention, and influence of demographic variables on students' entrepreneurial intention. In addition to reviewing the relevant literature, this chapter also establishes the hypotheses that guide the empirical investigation in this study.

2.1 Entrepreneurship and Entrepreneurial Intention

Entrepreneurship is commonly defined as the process of identifying, evaluating, and exploiting opportunities to create new products or services (Shane & Venkataraman 2000, 218-219). While economists Schumpeter viewed entrepreneurs as innovators who combine resources in new ways, driving "creative destruction" in markets (Ferreira et al. 2017, 6). However, entrepreneurship has been identified as the backbone of economic growth because it creates new businesses, introduces innovations, and drives employment (Hisrich et al. 2005). According to the Global Entrepreneurship Monitor (GEM) report, entrepreneurship increases economic growth, reduces unemployment, and fosters societal changes and technological advancements (Kelley et al. 2011, 10-11). Moreover, entrepreneurial activity extends beyond the creation of businesses. It is a continuous process that requires constant effort, adaptability, and a detailed understanding of the dynamic business environment to sustain growth and profitability. According to Peter Drucker (1985, 174), entrepreneurship is a systematic, professional discipline available to anyone in an organization, and not just an inherent trait or personal characteristic.

Building on the foundational understanding of entrepreneurship as a crucial driver of economic dynamism and innovation, it is imperative to consider how these entrepreneurial activities originate from the individual level. This focus on the genesis of entrepreneurial action leads directly into the concept of entrepreneurial intentions, which serves as a psychological precursor to entrepreneurial behaviors. The academic exploration of entrepreneurial intentions has evolved significantly, beginning with the foundational ideas proposed by Shapero and Sokol (1982, 83). They described entrepreneurial intentions as emerging from the perceived desirability and feasibility of entrepreneurial activities, often triggered by specific events that displace existing patterns

of behavior. Bird (1988, 442) further refined the concept by suggesting that intentions are states of mind that direct an individual's attention toward a specific object or path to achieve something, emphasizing the cognitive aspect of forming intentions. This cognitive perspective was echoed and expanded upon by Gartner (1988, 35), who introduced the idea that entrepreneurial intentions are also shaped by the process of creating new organizations, where the characteristics of the founder interact dynamically with the business opportunities.

By the end of the decade, Bird, B. and Jelinek (1989, 26) observed that entrepreneurial intentions had become a primary focus of interest, surpassing the study of actual entrepreneurial behaviors in academic research. Entering the 1990s, Ajzen (1991, 181) provided a more structured framework through the Theory of Planned Behavior, explaining intentions in terms of personal attitudes, subjective norms, and perceived behavioral control. In 1992, Bird (1992, 12) revisited the concept to emphasize that intentions not only involve cognitive states but are also a reflection of the individual's underlying motivation, which channels their attention and behavior towards entrepreneurship. This motivational aspect was further explored by Krueger and Brazeal (1994, 112), who pointed out the relevance of entrepreneurial intentions in the broader entrepreneurial process.

Mid-decade, Davidsson (1995, 6) introduced the idea that intentions might stem from the perceived opportunities and the individual's propensity to act upon these opportunities, linking intentions directly to the discovery of entrepreneurial opportunities. This notion was closely followed by Kolvereid (1996, 53-55), who suggested that intentions are influenced by an individual's preference for self-employment over traditional employment, highlighting the personal choice aspect in entrepreneurship. As the millennium turned, Krueger et al. (2000, 413) defined entrepreneurial intentions as leading to the creation of new firms, involving not just the aspiration but also the expectation of future financial success. This was closely followed by Autio et al. (2001, 150), who described entrepreneurial intentions as a conscious state of mind guiding one's goals to initiate new business ventures.

The early 2000s saw further development with Eckhardt and Shane (2003, 336) discussing entrepreneurial intentions in the context of discovering and exploiting previously unnoticed business opportunities. By mid-decade, Lee et al. (2005, 29)

emphasized the role of educational and environmental factors in developing entrepreneurial intentions among individuals. Fayolle et al., (2006, 706) argued that entrepreneurial intentions are influenced not only by traits but also by educational tools designed to enhance entrepreneurial attitudes and skills. Hmieleski and Corbett (2008, 493) viewed entrepreneurial intentions as arising from a creative process where improvisation and action play a critical role. More recently, Thompson (2009, 672) provided a comprehensive definition, stating that entrepreneurial intentions refer to the self-acknowledged conviction of an individual to start a new venture, complemented by planned and committed actions. This modern understanding incorporates both the psychological elements, and the strategic actions involved in forming and following through with entrepreneurial intentions.

As research continued to evolve, studies such as those by Bae et al. (2014, 241), and Dhiaf (2016, 119) further explored how educational programs, personal motivation, and the broader societal context influence the formation of entrepreneurial intentions. These studies collectively illustrate a shift towards understanding how external factors and personal characteristics interplay to shape entrepreneurial intentions, leading up to recent research by Neneh and Dzomonda (2024, 1), which focuses on the commitment to the business startup process as a pivotal stage in the formation of entrepreneurial intentions.

Existing definitions of entrepreneurial intentions from scholarly articles explained above, are listed in the table below.

Table 1. Definitions of entrepreneurial intentions

Sl. No.	Author (s)	Definition
1	Shapero and Sokol 1982	Entrepreneurial intentions as a result of perceived desirability and feasibility, influenced by a precipitating event or displacement.
2	Bird 1988	States of mind directing a person’s attention toward a specific object (end goal) or a path in order to achieve something (means).
3	Gartner 1988	Shaped by the organizational creation process where founder's characteristics interact with the business opportunity.
4	Bird, B. & Jelinek, M. 1989	Entrepreneurial intentions are a top theme of interest ahead of actual entrepreneurship.
5	Ajzen 1991	Intentions are influenced by personal attitude toward the behavior, subjective norms, and perceived behavioral control.

Sl. No.	Author (s)	Definition
6	Bird 1992	Intentions reflect motivation which channels attention, experience, and behavior towards entrepreneurial activities.
7	Krueger & Brazeal 1994	Entrepreneurial intentions are relevant to the entrepreneurial process.
8	Davidsson 1995	Entrepreneurial intentions are the intention to start a new firm emerging from perceived opportunity and individual's propensity to act.
9	Kolvereid 1996	Entrepreneurial intentions are influenced by an individual's preference for self-employment over working for others.
10	Krueger et al. 2000	Entrepreneurial intentions lead to the founding of a new firm and involve the expectation of financial success.
11	Autio et al. 2001	Entrepreneurial intentions are an individual's conscious state of mind that guides his or her goals to start a new business.
12	Eckhardt & Shane 2003	Entrepreneurial intentions are the context of discovering and exploiting opportunities not yet noticed.
13	Lee et al. 2005	Entrepreneurial intentions involve the role of educational and environmental factors in their development.
14	Fayolle et al. 2006	Entrepreneurial intentions are influenced by personal traits and pedagogical tools designed to enhance entrepreneurial attitudes and skills.
15	Hmieleski & Corbett 2008	Entrepreneurial intentions are viewed as stemming from a creative process where improvisation and spontaneous action play a critical role.
16	Thompson 2009	Entrepreneurial intentions refer to the self-acknowledged conviction of an individual to embark on a new business venture.
17	Bae et al. 2014	Entrepreneurial intentions involve the desire and motivation to engage in entrepreneurial endeavours for economic development.
18	Dhiaf 2016	Entrepreneurial intentions set the foundation for an individual's journey towards establishing a new business venture.
19	Ozaralli & Rivenburgh 2016	Entrepreneurial intentions are a robust indicator of business startup behavior.
20	Ibidunni et al. 2020	Entrepreneurial intention distinguished by research on entrepreneurship education programs (EEPs).
21	Sargani et al. 2020	Entrepreneurial intentions are a cognitive circumstance in which an individual wishes to start a venture.
22	Urban 2020	Entrepreneurial intentions include readiness to take risks, identify opportunities, and introduce new ideas in order to fulfill market demands.

Sl. No.	Author (s)	Definition
23	Yu et al. 2021	Entrepreneurial intentions have become the top theme of interest in recent research ahead of actual entrepreneurship.
24	Neneh & Dzomonda 2024	Entrepreneurial intentions involve the individual's commitment to the process of starting a business, i.e., the point where the individual intends to start the business.

As this study delves deeper into the concept of entrepreneurial intentions, particularly through the lens of academic research, it becomes evident how foundational elements join to shape students' entrepreneurial pursuits. Transitioning from a general understanding of entrepreneurial intentions to a more focused exploration of students' entrepreneurial intentions reveals a complex web of influences. Student's entrepreneurial intention can be defined as desire and motivation to engage in entrepreneurial endeavours (such as starting their own businesses or discovering innovative ventures) for the economic development which is distinguished by Research on entrepreneurship education programs (EEPs) (Bae et al. 2014, 241; Ibidunni et al. 2020, 4). These intentions incorporate not only the desire for self-employment but also the readiness to take risks, identify opportunities, and introduce new ideas in order to fulfil market demands (Urban 2020, 491).

A meta-analysis by Zhao et al., (2010, 384) demonstrates that individual traits such as innovativeness, risk tolerance, and proactiveness are not only predispose students towards entrepreneurship but also equip them with the skills necessary to navigate the entrepreneurial process. A systematic review by Shirokova et al., (2015, 4-5) confirms that cultural norms and social support systems significantly affect students' propensity to engage in entrepreneurial activities. In summary, entrepreneurial intention can defined as the committed state of mind directing an individual towards the creation and management of a new business venture, influenced by personal attitudes, perceived capabilities, and social norms.

Building on the concept of entrepreneurial intention, it is important to understand how theoretical models have been applied to explain this phenomenon. The next section discusses the Theory of Planned Behavior, which serves as the foundation for this study.

2.2 Entrepreneurial Intention Explained by the Theory of Planned Behavior (TPB)

2.2.1 Understanding the Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB), developed by Ajzen (1991), is a widely used framework for predicting intentional behavior, including entrepreneurial intention. It posits that intention is the most immediate antecedent of behavior and is shaped by three key psychological factors: *attitudes toward the behavior, subjective norms*, and *perceived behavioral control.* (Ajzen 1991, 181)

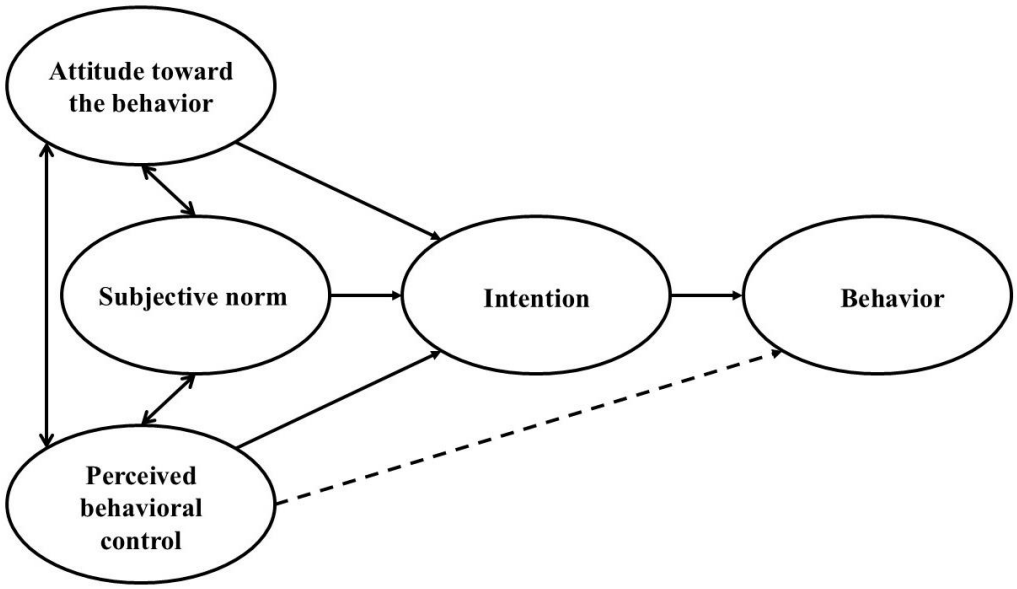

Figure 1. Theory of Planned Behavior (TPB)

Attitudes refer to the individual's positive or negative evaluation of becoming an entrepreneur; subjective norms relate to perceived social pressure or support from significant others; and perceived behavioral control reflects the perceived ease or difficulty of performing the entrepreneurial behavior.

TPB is grounded in social cognitive theory, emphasizing that individuals make intentional decisions based on rational evaluations of expected outcomes, social expectations, and their perceived capabilities. It offers a structured lens to understand how beliefs and social contexts interact to influence intentions. Rather than assuming spontaneous or reactive behavior, TPB frames intention formation as a deliberative process in which individuals

weigh the pros and cons of an action and consider whether they are supported and capable of carrying it out (Van Hoa Tran et al. 2023, 109; Duong & Vu 2023, 2).

This model has gained extensive empirical support in entrepreneurship research due to its explanatory power and adaptability across contexts (Krueger et al. 2000, 413–414; Autio et al. 2001, 145). Its predictive accuracy makes it particularly suitable for examining how entrepreneurial intentions are formed among students, where career-related decisions often involve personal ambition, social influence, and perceived self-efficacy.

Although the Theory of Planned Behavior (TPB) provides a robust and systematic framework for analyzing the roles of attitudes, subjective norms, and perceived behavioral control in shaping entrepreneurial intentions, it is not the sole theoretical model developed to explain the complex intentions underlying entrepreneurial behavior. A comparison with alternative theories enables a critical evaluation of TPB's applicability and underscores its theoretical relevance to the objectives of this study, particularly in relation to the emphasis on subjective norms within Finnish context.

2.2.2 Comparative Perspectives on Entrepreneurial Intention Theories

While the Theory of Planned Behavior (TPB) serves as the primary framework for this study, it is important to acknowledge alternative models that have also been used to explain entrepreneurial intentions. Among these, the Entrepreneurial Event Model (EEM) by Shapero and Sokol (1982) and Sarasvathy's Effectuation Theory (2001) offer valuable but distinct perspectives.

The EEM focuses on the perceived desirability and perceived feasibility of entrepreneurship, along with a propensity to act. These components are conceptually similar to the constructs of attitude and perceived behavioral control in TPB. However, a key difference lies in the treatment of subjective norms. While TPB explicitly incorporates perceived social expectations, EEM centers on situational or triggering events that catalyze entrepreneurial behavior, such as job loss or life transitions. This makes EEM more suitable for analyzing entrepreneurship as a reaction to external shocks, rather than as a deliberate, planned process.

Sarasvathy's Effectuation Theory presents a contrasting approach by rejecting the assumption of planned, goal-oriented action. Instead, it posits that entrepreneurs begin

with a set of available means and make decisions by leveraging contingencies and stakeholder involvement. The process is non-linear, flexible, and evolving, which stands in contrast to the linear and predictive logic of TPB and EEM. While Effectuation is highly relevant in dynamic and uncertain environments, its emphasis on action over intention makes it less applicable for studies focused specifically on the formation of intention - particularly in structured educational settings like universities.

Despite the strengths of these models, TPB was selected for this research due to its strong empirical foundation, its focus on intention as a planned cognitive process, and its inclusion of subjective norms, which directly align with this study's core research question. In the context of Finnish higher education, where career planning is relatively autonomous yet socially influenced, TPB offers a balanced framework for capturing both individual evaluations and perceived social pressures. (Ajzen 1991, 181; Kolvereid 1996, 54)

While TPB provides a comprehensive framework, this study pays particular attention to one of its components: subjective norms. The following section delves deeper into how subjective norms influence students' entrepreneurial intentions and the nuances observed in empirical research.

2.3 Influence of Subjective Norms (SN) on Students' Entrepreneurial Intention

According to TPB, subjective norms play an important role in shaping entrepreneurial intentions (Ajzen 1991, 181). It refers to the "perceived normative beliefs about significant others, such as family, relatives, friends, as well as other important individuals and groups of individuals" (Schlaegel and Koenig 2014, 293). Particularly, subjective norms, or social support and pressures from family, friends or significant others, have been identified as essential antecedents of entrepreneurial intention (Robledo et al. 2015, 95). According to Baron & Byrne, the subjective norm is a person's perception of whether or not other people close to the person will support the realization of the act. Subjective norms are an individual's expectations of other people in their close surrounding who can convince them to act or refrain from participating in a particular action, both individually and collectively. (Baron & Byrne 2003, 128-129)

Individual's intentions to create a new venture can be shaped in several ways by perceived social pressure to perform a specific behaviour or not (Santos & Liguori 2019, 405). First, friends and significant others with positive visions to entrepreneurship are more likely to encourage and aid individuals to pursue entrepreneurship (Abbasianchavari & Moritz 2021, 6). Second, societal norms and values can influence whether students develop constructive attitudes on new business establishment (Kazumi & Kawai 2017, 358-359).

Studies have found favourable impact of attitude towards entrepreneurship and perceived behavioural control on student's entrepreneurial intention while the effect of subjective norms is inconsistent. Some studies signify the impact of subjective norms on student's entrepreneurial intention (e.g. Al-Jubari et al. 2019, 11; Pejic et al. 2018, 1464; Karimi et al. 2017, 238; Iakovleva et al. 2011, 364; Solesvik 2013, 10) while some others research provide opposing findings. (e.g. Che Nawi et al. 2022, 8; Iglesias-Sánchez et al. 2016, 221-222; Maresch et al. 2016, 177; Wu & Wu 2008, 761)

One of the many reasons of this inconsistency may be due to the different operationalisation of subjective norms where the subjective norms is measured asking only about the individual's trust in the possibility that a certain reference person will support the accomplishment of their entrepreneurial intention (Nessel et al. 2024, 84). However, these beliefs should be adjusted based on the individual's motivation to adhere to the norms and weighted according to the importance they assign to the opinions of the reference individuals. (Ajzen 2020, 317; Fishbein & Ajzen 2011, 267-268).

Another troublesome feature of the impact of subjective norms on entrepreneurial intentions is the path of the impact. Originally, TPB assumed only direct impact. However, subsequent research has guided potential interaction among attitudes towards entrepreneurship, subjective norms, and perceived behavioural control. (Heuer & Liñán 2013, 41-42) In this consideration, subjective norms may not directly impact entrepreneurial intentions, but it may impact indirectly in entrepreneurial intentions through the attitude towards entrepreneurship and perceived behavioural control (González-Serrano et al. 2018, 398; Liñán & Chen 2009, 609). In the light of the above discussion, the following hypothesis can be formulated:

H1: Subjective norms have direct impact on students' entrepreneurial intentions.

H2: Subjective norms have indirect impact on students' entrepreneurial intentions through attitude towards entrepreneurship.

H3: Subjective norms have indirect impact on students' entrepreneurial intentions through perceived behavioural control.

In examining the influence of entrepreneurs among close individuals on subjective norms and their subsequent impact on students' entrepreneurial intentions, it is essential to consider the nuanced mechanisms through which these entrepreneurs affect aspiring entrepreneurs. Research suggests that role model and the demonstration of successful entrepreneurial behaviors within one's close individuals can significantly enhance an individual's inclination towards entrepreneurship. The presence of successful entrepreneurs offers tangible examples of entrepreneurial success, providing both motivation and a clear pathway that others might follow. (Gurel & Daniele 2010, 663-664)

Additionally, the social support provided by these entrepreneurs, which includes mentorship, access to networks, and resources, plays a critical role in shaping the subjective norms related to entrepreneurship. Entrepreneurs within one's circle not only inspire but also empower potential new entrepreneurs through direct engagement and support, making the entrepreneurial journey seem more accessible and feasible. (Portyanko et al. 2023, 535-536) This effect is magnified by the normalization of entrepreneurship within one's environment, where entrepreneurship is seen as a viable and attractive career path. The continuous interaction with successful entrepreneurs helps to integrate entrepreneurship within the individual's behavioral norms, thereby influencing their perceived behavioral control, a key component of the Theory of Planned Behavior (TPB). (Krueger 1993, 5)

Moreover, the success of these entrepreneurs can reinforce positive subjective norms by setting a precedent that success is within reach. Observing the achievements and rewards of entrepreneurship within their close network can significantly boost an individual's confidence in their own entrepreneurial capabilities and increase the likelihood of entrepreneurial endeavours. (Engle et al. 2011, 10) The cultural and contextual factors also play a significant role, as the impact of successful entrepreneurs on subjective norms may vary based on the societal valuation of entrepreneurship. Considering the above dynamics, the following research hypotheses are posited:

H4a: Subjective norms are influenced by the presence of entrepreneur among individual's close ones.

H4b: Subjective norms are influenced by the success of entrepreneurs among individual's close ones.

Furthermore, individual's professional and entrepreneurial experience impact the subjective norms (Iakovleva et al. 2011, 365; Zapkau et al. 2017, 58). Involvement in entrepreneurial activities such as entrepreneurial club, entrepreneurial seminars, different entrepreneurial events etc help the individuals to gain knowledge on entrepreneurship and connect with other entrepreneurs which may influence their view of entrepreneurship and help to understand how society sees entrepreneurs. This may influence their subjective norms and entrepreneurial intentions. Likewise, individual's professional experience expands their understanding on social belief on different professions and entrepreneurship as a career which may influence their subjective norms and entrepreneurial intentions. Thus, the following hypotheses may be formulated:

H5: Subjective norms are influenced by individual's own entrepreneurial experience.

H6: Subjective norms are influenced by individual's own professional experience.

Although subjective norms are a central focus, they do not operate in isolation. The next section explores how demographic variables such as age, gender, education, and experience also shape students' entrepreneurial intentions and perceptions.

2.4 Influence of Demographic Variables on Students' Entrepreneurial Intention

Demographic variables include gender, age, education (including entrepreneurship-related education) and institutional context which are also frequently cited as potential determinants of all three primary factors of entrepreneurial intentions (Nessel et al. 2024, 85). Given the context of the study, which involves students from the same university, demographic variables such as gender, age, and education level may still exhibit sufficient diversity to influence subjective norms, attitudes toward entrepreneurship, and perceived behavioral control. The higher entrepreneurial intentions among men as opposed to women, among older as opposed to younger, among master's student as opposed to

bachelor's student are frequently explored as a result of gender, age and education factors shaping subjective norms, attitude and perceived bahavioral control (Iakovleva et al. 2011, 364). Taking the above discussion into consideration, the following hypothesis can be formulated:

H7: Subjective norms are distinguished by gender.

H8: Subjective norms are distinguished by age.

H9: Subjective norms are distinguished by level of education.

Having reviewed the literature and identified key influencing factors, the final section of this chapter presents the research model and hypotheses that guide the empirical analysis in this study.

2.5 Research Model

This study investigates how the subjective norms influence the entrepreneurial intentions among students in Finland. The research model is guided by nine main hypotheses, each deal with specific relationships among these main factors. The conceptual framework depicted in Figure 2 illustrates the relationships outlined in the hypotheses.

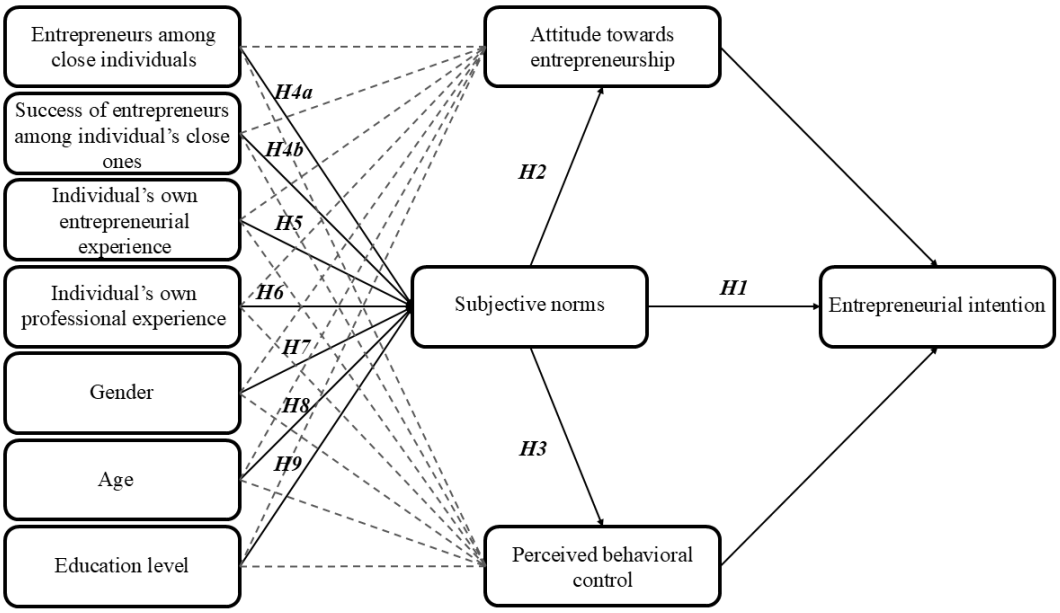

Figure 2. Research Model with Hypotheses

Firstly, it visualizes the direct relationships between entrepreneurs within close social circles, their success, an individual's entrepreneurial and professional experience, gender, age, and education level with subjective norms, as well as the indirect connections to attitudes toward entrepreneurship and perceived behavioral control.

Secondly there is direct link between subjective norms to entrepreneurial intentions including the indirect effect through attitude towards entrepreneurship and perceived behavioral control. A summary of the outlined hypotheses is presented in table 2.

Table 2. Research Model with Hypotheses

Sl. No.	Hypotheses	Impact / Effect
H1	*Subjective norms have direct impact on students' entrepreneurial intentions.*	*Direct impact*
H2	*Subjective norms have indirect impact on students' entrepreneurial intentions through attitude towards entrepreneurship.*	*Mediation effect*
H3	*Subjective norms have indirect impact on students' entrepreneurial intentions through perceived behavioural control.*	*Mediation effect*
H4a	*Subjective norms are influenced by the presence of entrepreneur among individual's close ones.*	*Moderation effect*
H4b	*Subjective norms are influenced by the success of entrepreneurs among individual's close ones.*	*Moderation effect*
H5	*Subjective norms are influenced by individual's own entrepreneurial experience.*	*Moderation effect*
H6	*Subjective norms are influenced by individual's own professional experience.*	*Moderation effect*
H7	*Subjective norms are distinguished by gender.*	*Demographic effect*
H8	*Subjective norms are distinguished by age.*	*Demographic effect*
H9	*Subjective norms are distinguished by level of education.*	*Demographic effect*

Direct Impact: In the context of entrepreneurial intentions among students, subjective norms have a direct impact, signifying that the immediate social pressures and expectations perceived by students directly influence their intentions to engage in entrepreneurial activities. This direct relationship suggests that the more supportive and encouraging the social environment, the greater the likelihood of students developing strong entrepreneurial intentions (Ajzen 1991, 188).

Mediation Effect: Mediation effects in the Theory of Planned Behavior highlight how subjective norms influence entrepreneurial intentions through intermediary variables such as attitudes towards entrepreneurship and perceived behavioral control. This means that

subjective norms might affect one's attitude towards the feasibility and desirability of entrepreneurship, which in turn affects their entrepreneurial intentions. Similarly, perceived behavioral control, which involves the perceived ease or difficulty of performing entrepreneurial activities, can also mediate the impact of subjective norms on intentions (Ajzen 1991, 204).

Moderation Effect: Moderation effects occur when the strength or direction of the relationship between subjective norms and entrepreneurial intentions is influenced by another variable, such as the presence or success of entrepreneurs in an individual's close circle, or the individual's own entrepreneurial or professional experience. For instance, the impact of subjective norms on entrepreneurial intentions could be stronger in individuals who have successful entrepreneurs in their network, suggesting that the external success stories modify how subjective norms are internalized (Baron & Kenny 1986, 1173).

Demographic Effect: Demographic effects pertain to how different demographic variables such as gender, age, and educational level distinguish the influence of subjective norms on entrepreneurial intentions. These effects can reveal important patterns, such as whether male or female students are more influenced by societal expectations, or whether older students perceive different levels of social pressure compared to younger students. Understanding these effects is crucial for tailoring educational and supportive measures to diverse student populations. (Kolvereid 1996, 54).

After outlining the research model and the hypotheses guiding this study, it is essential to explain how the investigation was carried out in practice. The next chapter details the methodology used to explore these hypotheses. By applying the research onion model, this study ensures a systematic approach to selecting appropriate research philosophy, design, and data collection methods that align with the objectives and scope of the research.

3 Methodology

This chapter will discuss the research methods used in the study, employing the research onion model as modified by Saunders et al. (2012, 128). The methodology encompasses the research philosophy, approach, design, methods, strategy, and time horizon, each tailored to explore and validate the proposed hypotheses efficiently.

3.1 Research Design

The research design serves as a structured framework that guides the entire research process. It defines the approach for addressing research questions, specifies objectives, outlines data sources and collection methods, considers ethical implications, and anticipates potential challenges (Saunders et al. 2012, 159). Acting as a blueprint, it grounds the research questions and enhances the study's credibility by articulating and justifying methodological choices.

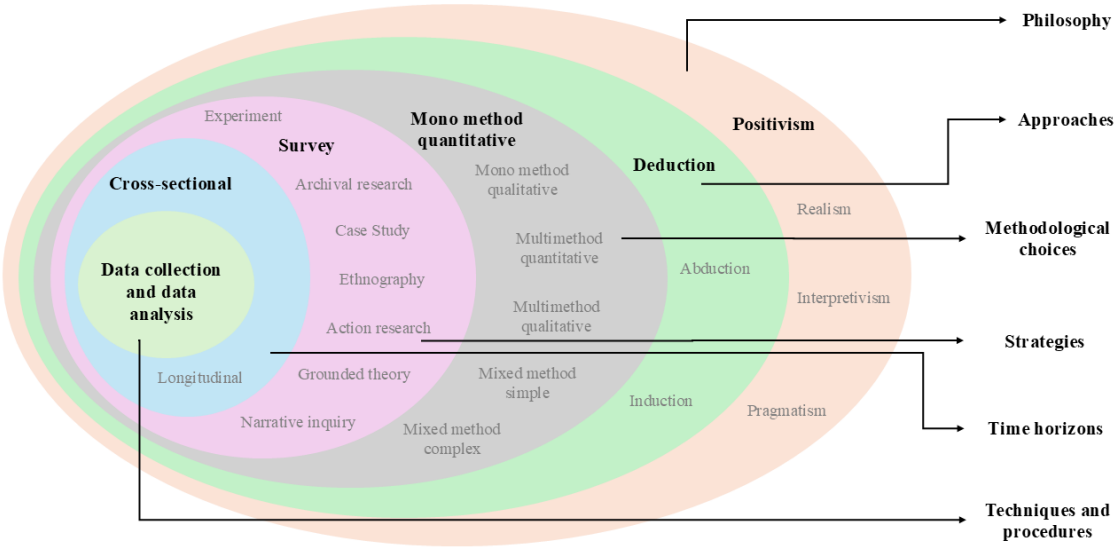

Figure 3. 'Research onion' modified from Saunder et al. (2012, 128)

This study adopts an **explanatory research design**, ideal for investigating causal relationships between variables by applying established theoretical frameworks (Saunders et al. 2012, 172–549). The Theory of Planned Behavior (TPB) serves as the guiding framework (Ajzen 1991, 181), supporting the exploration of how attitudes,

subjective norms, and perceived behavioral control collectively shape entrepreneurial intentions among students in Finland.

Aligned with a **positivist research philosophy**, this study assumes that reality exists independently and can be objectively measured through empirical observation and quantifiable data (Popper 1959, 11–12; Bryman 2012, 178–179). Positivism also underpins the use of standardized measurement tools and statistical testing, enhancing the validity and generalizability of findings (Hughes 2001, 15; Saunders et al. 2012, 146–147).

A **deductive research approach** is employed, beginning with theory-driven hypotheses based on TPB and systematically testing them through data collected from a student sample (Ajzen 1991, 181; Saunders et al. 2012, 145; Robson 2011, 175). Deduction allows for the operationalization of abstract constructs - such as subjective norms - into measurable variables, enabling empirical evaluation and the development of generalizable insights.

This research applies a **quantitative methodology**, well-suited for examining structured relationships among predefined variables (Creswell 2014, 224–225; Yilmaz 2013, 311). By using structured surveys and numerical analysis, the study seeks to minimize subjectivity and ensure replicable results. Quantitative methods also allow for hypothesis testing through tools such as regression, mediation, and moderation analyses (Babbie 2015, 75; Saunders et al. 2012, 130).

A **survey strategy** is implemented using a structured questionnaire distributed to students at the University of Turku. This approach is efficient for collecting standardized responses across a diverse population, ensuring comparability and breadth (Fowler 2013, 76; Creswell 2014, 136).

Finally, the study uses a **cross-sectional time horizon**, capturing data at a single point in time (Saunders et al. 2012, 190; Babbie 2016, 75). This snapshot approach is practical for identifying patterns and relationships without the complexities of longitudinal tracking. Though it limits causal inference, it offers a valuable view of the current landscape of entrepreneurial intentions influenced by subjective norms.

Together, these methodological choices - positivism, deduction, quantitative analysis, survey strategy, and cross-sectional design - form a coherent and rigorous framework

aligned with the study's objectives. After outlining the research design, the next step is to define the variables that frame the study. The following section categorizes the variables based on their role in the research model.

3.2 Types of Variables

A variable is a distinct attribute or feature for which data is collected (Saunders et al. 2012, 684). In research and statistics, it refers to a measurable element that can vary and is subject to analysis, observation, or evaluation. Research involves various types of variables, including independent, dependent, mediating, moderating, control, and confounding variables (Saunders et al. 2012, 174). The selection and relevance of specific variable types are determined by the study's underlying hypotheses. In this research, the focus is on independent, dependent, mediating, and moderating variables, each serving a distinct role within the conceptual framework.

An **independent variable** is the factor that is intentionally modified or examined in a study to assess its effect on the dependent variable (Saunders et al. 2012, 174). It serves as the central element through which researchers evaluate causal relationships. In the context of this study, subjective norms are identified as the independent variable.

A **dependent variable** is one that changes in response to variations in other variables (Saunders et al. 2012, 174). It reflects the outcome that is measured as a result of deliberate changes made to another variable within the study. In this research, entrepreneurial intentions serve as the dependent variable.

A **mediating variable** serves as an intermediary between the independent and dependent variables, helping to explain the nature of their relationship (Saunders et al. 2012, 174). Its role is to provide insight into how or why one variable influences another. In this study, the mediating variables are attitudes towards entrepreneurship and perceived behavioral control which mediate the relationship between subjective norms and entrepreneurial intentions.

A **moderator variable** is a variable that affects the direction of the relation between an independent and a dependent by strengthening or weakening the relationship. A moderator effect within a correlational context may also be said to happen where the direction of the correlation changes. (Baron & Kenny 1986, 1173). In this study, the

moderating variables are presence of entrepreneurs among close ones, success of entrepreneurs among close ones, own entrepreneurial experience and own professional experience.

After identifying and defining the key variables that form the foundation of this study, The next section explains how the survey was conducted and the rationale behind the sampling approach.

3.3 Data Collection Methods

The collection of sample data for this research was conducted over a brief period, from January 29 to February 8, 2025, targeting students at the University of Turku in Finland. To facilitate the survey process, an online platform known as Webropol was utilized (See appendix 3). The survey was widely disseminated to potential respondents via multiple channels: emails and QR codes on leaflets distributed in strategic campus locations such as classrooms, libraries, and cafeterias. This multi-channel approach was intended to maximize participant reach and engagement. Participants in the survey included students from a range of academic levels - bachelor's, master's, and PhD programs - across various disciplines, ensuring a diverse sample.

A **non-probability purposive sampling technique** was used, targeting university students interested in entrepreneurship. The final sample size consisted of 206 respondents, which was deemed sufficient for statistical analysis based on power analysis criteria (Cohen 1988, 447).

After collecting the data, it is essential to explain how the variables were measured to ensure consistency and reliability in the analysis. The next section outlines the measurement scales used in the study, describing how the theoretical constructs were operationalized into survey items and how responses were quantified for statistical testing.

3.4 Measurement scales

To assess the influence of the Theory of Planned Behavior (TPB) components on entrepreneurial intentions, this study adopted the 19-item scale developed by Liñán and Chen (2009, 600), with slight modifications. The scale includes five items measuring

attitudes toward entrepreneurship, three items for subjective norms, five for perceived behavioral control, and six for entrepreneurial intentions. To account for the motivational dimension within subjective norms, three additional items were included, measuring the importance respondents assign to the opinions of close individuals (Kolvereid 1996, 50–51).

All items related to TPB constructs were evaluated on a 7-point Likert scale, ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Subjective norms were further weighted using a two-step procedure: first, responses were recoded onto a bipolar scale (–3 to +3) and then multiplied by the importance ratings of each referent group, producing a set of weighted subjective norm variables (SN_W1, SN_W2, SN_W3) that capture both belief and motivation to comply.

The questionnaire also included demographic and background variables. Gender was coded as 1 = Female, 2 = Male, and 3 = Other. Education level was categorized as 1 = Bachelor's degree, 2 = Master's degree, and 3 = PhD degree. Additional dichotomous variables (coded as 1 = No, 2 = Yes) captured the presence of entrepreneurs in the respondent's close network, their own entrepreneurial experience, professional work experience, and current employment status—defined as working at least 20% of full-time hours (Iakovleva et al. 2011, 359).

The measure of entrepreneurial success among close individuals was adapted from Nessel et al. (2024, 14), who used a five-point ordinal scale ranging from "they experience many failures" to "they experience many successes" in their structural model. This subjective evaluation was used to construct an interaction term with the presence of entrepreneurs, enabling the exploration of moderation effects in the structural equation modelling (SEM) analysis.

These scales and variable coding provided the foundation for testing the hypotheses derived from the TPB framework and for analyzing the broader influence of subjective norms and related factors on students' entrepreneurial intentions. A full summary of constructs and coding is presented in Table 3.

Table 3. Measurement Scale

Construct / Variable	No of Items	Measurement Scale	Source / Notes
Attitude Toward Entrepreneurship (ATT)	5	7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree)	Liñán & Chen (2009, 600)
Subjective Norms (SN)	3 (+3 weighted)	7-point Likert scale; weighted by importance ratings (–3 to +3 × weight)	Liñán & Chen (2009, 600); Kolvereid (1996, 50–51)
Perceived Behavioral Control (PBC)	5	7-point Likert scale	Liñán & Chen (2009, 600)
Entrepreneurial Intentions (EI)	6	7-point Likert scale	Liñán & Chen (2009, 600)
Gender	-	Categorical: 1 = Female, 2 = Male, 3 = Other	Adapted from Nessel et al. (2024, 14)
Education Level	-	Categorical: 1 = Bachelor's, 2 = Master's, 3 = PhD	Self-reported
Employment Status	-	Dichotomous: 1 = No, 2 = Employed at least 20% of full-time hours	Iakovleva et al. (2011, 359)
Entrepreneurial Experience (Self)	-	Dichotomous: 1 = No, 2 = Yes	Adapted from Nessel et al. (2024, 14)
Work Experience	-	Dichotomous: 1 = No, 2 = Yes	Adapted from Nessel et al. (2024, 14)
Presence of Entrepreneurs in Network	-	Dichotomous: 1 = No, 2 = Yes	Iakovleva et al. (2011, 359)
Success of Close Entrepreneurs	-	5-point ordinal scale: 1 = Many Failures → 5 = Many Successes	Adapted from Nessel et al. (2024, 14)

Once the measurement scales are established, the following section describes the data analysis approach, outlining the statistical tools and techniques used to examine relationships among variables and evaluate the effects outlined in the research model.

3.5 Data Analysis Approach

This study employed a quantitative approach to analyze data using IBM SPSS Statistics 29, Minitab 18, and Microsoft Excel. SPSS served as the primary tool for data handling

and statistical analysis, including regression, mediation, moderation, and ANOVA. Minitab was used to validate key regression outputs and calculate effect sizes such as Cohen's f^2, providing an additional layer of precision and ensuring the robustness of findings across platforms.

Descriptive statistics contains the variables such as age, nationality, level of study, Entrepreneurs among close individuals, Successes of entrepreneurs among close individuals, Own entrepreneurial experience and Own work experience. The inferential data analysis followed several stages. First, the direct effect of subjective norms on entrepreneurial intentions (H1) was tested using regression analysis. Secondly, a mediation analysis is performed to test the hypothesis two and three to determine whether the impact of subjective norms on entrepreneurial intentions is mediated by attitudes towards entrepreneurship (H2) or perceived behavioral control (H3). Thirdly, a moderation analysis to see if the relationship between subjective norms and entrepreneurial intentions varies by factors like the presence of entrepreneurs in one's close network or their success (H4a, H4b, H5, H6). This will help to identify if these factors strengthen or weaken the relationship. Finally, an ANOVA is conducted to compare the mean scores on subjective norms across different categories of gender, age, and education levels (H7, H8, H9).

Effect sizes were computed using Cohen's f^2, ensuring the practical significance of findings beyond statistical significance (Cohen 1988, 447). The Cohen's f^2 value for this study is 0.114, which corresponds to a small to medium effect size. This suggests that while subjective norms have a statistically significant impact on entrepreneurial intentions, their practical effect is modest.

Power analysis was conducted to determine the minimum required sample size. Using G*Power, the study confirmed that the sample size of 206 was adequate to detect medium-sized effects (Faul et al. 2007, 177).

Having outlined the analytical methods used to test the study's hypotheses, it is essential to evaluate the quality and integrity of the research process. The following section discusses the validity, reliability, and generalizability of the study, as well as the ethical measures taken during data collection and analysis to ensure the credibility and trustworthiness of the findings.

3.6 Evaluation of the Study

The evaluation of a quantitative study is based on its validity, reliability, and generalizability (Mohajan 2020, 55). These key components ensure the accuracy, strength, and applicability of the research findings. Furthermore, the ethical considerations involved in data collection, storage, and use play a significant role in maintaining research integrity and participant protection. This section evaluates the study on these critical aspects.

Validity refers to the degree to which the research measures what it is intended to measure (Kothari 2004, 73). In this study, validity was assessed through criterion validity, content validity, and construct validity.

Criterion validity was ensured by examining the predictive power of subjective norms in shaping entrepreneurial intentions among students in Finland. Statistical analyses confirmed that the independent variables effectively influenced the dependent variable as per the Theory of Planned Behavior (TPB).

Content validity was maintained by carefully designing survey questions that comprehensively covered the constructs under study, including subjective norms, attitudes towards entrepreneurship, and perceived behavioral control. The survey items were adapted from established scales (Liñán & Chen 2009, 600), ensuring they accurately captured the study's key concepts.

Construct validity was upheld by aligning the measurement items with theoretical constructs and confirming their relationship with other variables as anticipated. Statistical tests, including factor analysis, confirmed that the items measured the intended constructs accurately.

Reliability pertains to the consistency and stability of the measurement instrument (Nunnally 1978, 229-230). A study is considered reliable if repeated trials produce similar results. Internal consistency was tested using Cronbach’s alpha for multi-item scales measuring subjective norms, entrepreneurial attitudes, and perceived behavioral control to ensure the reliability. The results are as follows:

Table 4. Cronbach's alpha values for reliability testing

Variable	Entrepreneurial Intentions (INT)	Attitudes Towards Entrepreneurship (ATT)	Subjective Norms (SN)	Perceived Behavioral Control (PBC)
Cronbach's Alpha	0.969	0.940	0.789	0.870

A Cronbach's alpha coefficient above 0.7 confirms high reliability, indicating that the survey items consistently measure the intended constructs.

Survey standardization was ensured by administering the same questionnaire to all participants, thereby eliminating variations due to inconsistencies in the data collection process. Data cleaning procedures were implemented to identify and address inconsistencies, such as inappropriate responses, to enhance the reliability of the dataset.

Generalizability refers to the degree to which the results of a study can be extended or applied to populations beyond the specific sample investigated (Saunders et al. 2009, 382).

The study used a diverse sample of students from the University of Turku, which increases the external validity of the findings. However, as the sample was limited to students from the University of Turku in Finland, caution must be taken when applying these findings to different geographical or institutional contexts. While the sample size (206 students) was sufficient for statistical analysis, future studies should include a more diverse sample across multiple universities to enhance generalizability.

Ensuring **ethical research practices** was a fundamental aspect of this study. The research adhered to ethical guidelines established by the University of Turku, Finland, and prioritized participants' rights and privacy (See appendix 4).

Informed consent was obtained from all participants, and they were explicitly informed about the purpose of the study, data collection procedures, and their right to withdraw at any stage without consequences. Anonymization of data was implemented to protect participant identity, ensuring that no direct identifiers were stored or shared. Data were securely stored within the University of Turku's infrastructure, accessible only to authorized personnel, in compliance with GDPR regulations (European Commission, 2018). Limited data retention ensured that the collected data would only be stored for the necessary period required for research purposes and would be securely deleted afterward.

By upholding these ethical principles, the study-maintained transparency, participant trust, and research integrity.

This study has utilized Artificial Intelligence (AI) assistance during the process of writing, editing, and refining while maintaining the ethical and academic standards of the University of Turku. All AI-assisted contributions were critically reviewed and edited by the author to ensure compliance with academic integrity, originality, and alignment with the University of Turku's guidelines. No content was directly copied from AI tools without human intervention, analysis, or adjustment. There is a detailed declaration of artificial intelligence (AI) assistance in the appendix 5.

With the research design, data collection methods, and measurement strategies firmly established, the next step involves analyzing the collected data to evaluate the proposed hypotheses. Chapter 4 presents the results of this analysis, offering a detailed examination of how subjective norms influence entrepreneurial intentions among students in Finland through various statistical methods and tests.

4 Data Analysis and Findings

This chapter presents a comprehensive analysis of the data collected for this study to examine the role of subjective norms in shaping entrepreneurial intentions among students in Finland. The analysis includes descriptive statistics, correlation analysis, and hypothesis testing using regression, mediation, moderation, and ANOVA methods. Section 4.1 provides an overview of the sample demographics and key variable distributions. Section 4.2 outlines the statistical assumptions tested to ensure model validity. Section 4.3 presents the hypothesis testing results, followed by a discussion of findings in Section 4.4. Finally, Section 4.5 offers a summary of the key insights. This structured approach enhances clarity and highlights how subjective norms influence entrepreneurial intentions through empirically validated relationships.

4.1 Descriptive Statistics

This section provides an overview of the fundamental statistical properties of the sample, including demographic distributions and key variable trends. Understanding these statistics is essential for establishing a foundation for subsequent inferential analyses. In this study, IBM SPSS Statistics, Minitab, and Microsoft Excel were utilized for descriptive analysis.

4.1.1 Sample Demographics

The age of respondents in the study ranged from 18 to 58 years, with a total of 206 individuals participating. The mean age was approximately 26.12 years, indicative of a predominantly young student participant base. The distribution of ages showed a standard deviation of 6.03 years, reflecting a moderate spread around the mean.

Gender distribution within the sample showed that 52.43% (n=108) of respondents identified as male, 46.60% (n=96) as female, and 0.97% (n=2) as others. This diversity allows for a broader examination of gender-related differences in entrepreneurial intentions and perspectives within the study.

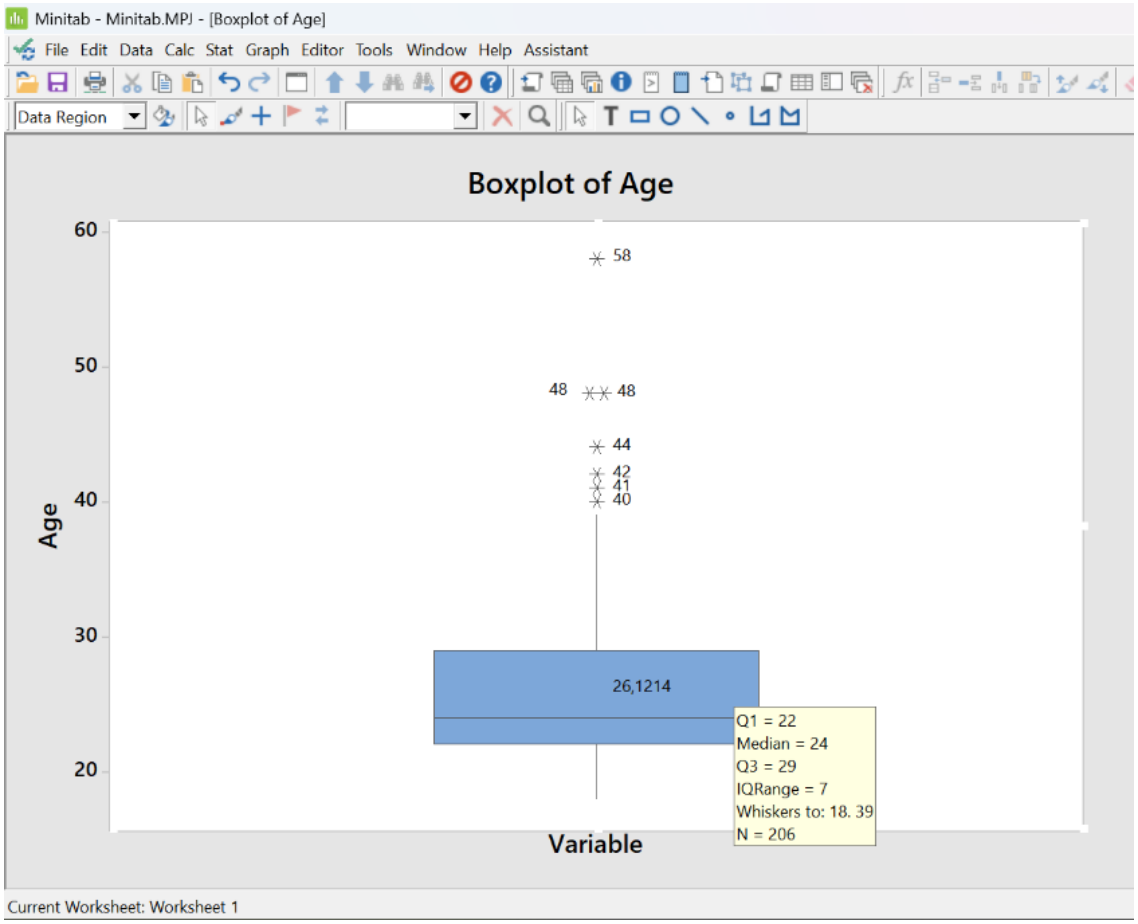

Figure 4. Box plot of Age

The academic level of participants was primarily at the master's degree level, with 52.91% (n=109) of respondents studying for a master's degree, while 45.15% (n=93) were bachelor's degree students. A small fraction of the sample (1.94%, n=4) comprised PhD students. This distribution indicates that the study predominantly involved participants who were in the midst of higher education, potentially reflecting a stage of life where entrepreneurial intentions could be forming.

A significant 67.48% (n=139) of respondents reported having entrepreneurs among their close family members, friends, or significant others, suggesting a possible influence of these networks on their entrepreneurial attitudes and intentions. In contrast, 32.52% (n=67) of the participants did not have entrepreneurs in their close circles, which could represent a different set of influences or lack thereof on their perceptions and intentions toward entrepreneurship.

Among those who knew entrepreneurs, 44.60% (n=92) observed more successes than failures in their entrepreneurial endeavours, potentially contributing to positive subjective

norms. About 35.97% (n=74) saw an equal mix of successes and failures, while 10.07% (n=21) noted many successes, which could inspire or deter their entrepreneurial ambitions based on perceived success rates. Fewer respondents noted more failures than successes (7.91%, n=16) or many failures (1.44%, n=3), highlighting varied experiences within their networks.

Table 5. Descriptive statistics of demographic data

Variable / Response		**Sample, n**	**Percentage**	**Cumulative Percentage**
Gender	Male	108	52.43%	52.43%
	Female	96	46.60%	99.03%
	Others	2	0.97%	100.00%
Level of Study	Bachelor's Degree	109	52.91%	52.91%
	Master's Degree	93	45.15%	98.06%
	PhD Degree	4	1.94%	100.00%
Entrepreneurs Among Close Individuals	Yes	139	67.48%	67.48%
	No	67	32.52%	100.00%
Success of Entrepreneurs Among Close Individuals	More Successes than Failures	92	44.60%	44.60%
	Equal Mix of Successes and Failures	74	35.97%	80.57%
	Many Successes	21	10.07%	90.64%
	More Failures than Successes	16	7.91%	98.55%
	Many Failures	3	1.45%	100.00%
Own Entrepreneurial Experience	Yes	147	71.36%	71.36%
	No	59	28.64%	100.00%
Work Experience	Yes	197	95.63%	95.63%
	No	9	4.37%	100.00%

Regarding personal entrepreneurial experience, 71.36% (n=147) of participants had no history of starting or running a business, while 28.64% (n=59) had such experience. This distribution provides insights into the level of practical exposure among participants, which may impact their subjective norms and entrepreneurial intentions.

A vast majority of the sample (95.63%, n=197) had some form of work experience, including part-time jobs, internships, or full-time employment, demonstrating a high level of professional engagement. Only 4.37% (n=9) reported no work experience, indicating

that most participants were both academically active and involved in the workforce, which may shape their entrepreneurial perspectives.

These descriptive statistics provide a foundational understanding of the participant profile and contextualize the findings of this study on entrepreneurial intentions. The predominance of young adults (mean age ~26), along with a near-even gender distribution and strong representation from both bachelor's and master's levels, reflects a balanced and relevant sample for examining university-level entrepreneurial motivations. The high percentage (67.48%) of respondents who have entrepreneurs among their close contacts, and the substantial share who observed entrepreneurial success, suggest that social exposure to entrepreneurship is a common experience in this group, potentially shaping favourable subjective norms. Additionally, the relatively high rates of work experience (95.63%) and moderate entrepreneurial experience (28.64%) indicate that most students have been exposed to professional environments, which could influence their confidence and readiness to pursue entrepreneurship. Altogether, these statistics suggest a sample well-positioned to explore how subjective norms and background experiences interact to shape entrepreneurial intentions in a Finnish university context.

While demographic characteristics offer a foundational understanding of the participant group, a deeper insight into the psychological and behavioral constructs is essential to address the study's core objectives. The following section presents the distribution of key variables, including subjective norms, entrepreneurial intentions, attitudes toward entrepreneurship, and perceived behavioral control, which form the foundation for the hypothesis testing and analytical framework of this study.

4.1.2 Key Variables Distribution

Subjective norms, entrepreneurial intentions, attitudes toward entrepreneurship and perceived behavioral control are the key variables in this study. The descriptive statistics for the above-mentioned key variables provide insights into the central tendencies and dispersion of the data. Subjective norms had a mean of 8.33 with a standard deviation of 6.47, showing that participants had varying levels of perceived approval from close individuals regarding their entrepreneurial intentions. Entrepreneurial intentions recorded a mean value of 3.56 with a standard deviation of 1.88, suggesting moderate levels of entrepreneurial aspirations among respondents, with some variability in responses.

Attitudes toward entrepreneurship had a mean of 4.48 and a standard deviation of 1.63, reflecting a generally positive but varied perception of entrepreneurship as a career path. Finally, perceived behavioral control, which measures the respondents' confidence in their ability to start and sustain a business, had a mean of 3.56 and a standard deviation of 1.58, demonstrating a relatively neutral self-evaluation of entrepreneurial capability. The standard deviations across all variables indicate some degree of variability, which will be further analysed in later sections to determine its impact on entrepreneurial intentions.

Table 6. Key variables distribution

Sl. No.	Key Variables	Mean	Standard Deviation
1	Subjective norms	8.33	6.47
2	Entrepreneurial intentions	3.56	1.88
3	Attitudes toward entrepreneurship	4.48	1.63
4	Perceived behavioral control	3.56	1.58

With the distribution of key variables explained, the next section presents the correlation analysis to identify initial relationships between subjective norms, attitudes, perceived behavioral control, and entrepreneurial intentions.

4.1.3 Correlation Analysis

The correlation analysis provides insights into the relationships among key variables in this study. The results indicate a significant positive correlation between subjective norms and entrepreneurial intentions ($r = 0.29$, $p < 0.01$), suggesting that higher perceived social approval is associated with stronger entrepreneurial intentions. Additionally, attitudes toward entrepreneurship showed a strong positive correlation with entrepreneurial intentions ($r = 0.47$, $p < 0.01$), indicating that favorable attitudes towards entrepreneurship are linked to greater entrepreneurial aspirations. Furthermore, perceived behavioral control demonstrated a positive correlation with entrepreneurial intentions ($r = 0.41$, $p < 0.01$), reflecting that individuals with higher confidence in their entrepreneurial capabilities tend to have stronger intentions to start a business.

These correlations highlight the interconnected nature of subjective norms, attitudes, and perceived control in shaping entrepreneurial intentions, supporting the theoretical framework of this study. The strength of these relationships will be further explored in

the subsequent hypothesis testing section. The table below presents Pearson's correlation coefficients among the key variables, highlighting significant positive relationships.

Table 7. The correlation analysis among key variables

Sl. No.	Variables	Correlation Coefficient (r)	Significance (p)
1	Subjective norms and entrepreneurial intentions	0.29	< 0.01
2	Attitudes toward entrepreneurship and entrepreneurial intentions	0.47	< 0.01
3	Perceived behavioral control and entrepreneurial intentions	0.41	< 0.01

The correlation analysis has provided preliminary insights into the relationships among the key variables of interest. However, to proceed with more robust inferential statistics, such as regression, mediation, and ANOVA, it is crucial to verify that the underlying statistical assumptions are met. The following section systematically tests these assumptions to ensure the validity and reliability of the upcoming hypothesis analyses.

4.2 Testing of Statistical Assumptions

Key statistical assumptions were tested to ensure the validity and reliability of regression, moderation and ANOVA analyses. These assumptions include linearity, independence of observations, normality of residuals, homoscedasticity, and multicollinearity for moderation analysis and regression models. Similarly, ANOVA requires assumptions of normality within groups, homogeneity of variances, and independence of observations.

4.2.1 Assumptions for Regression Analysis

The below assumptions were tested to ensure the validity of the regression analysis.

Linearity Check: A scatterplot of residuals vs. fitted values was analysed to check for linearity. The plot confirmed that residuals were randomly distributed without any clear patterns, suggesting that the linearity assumption was met.

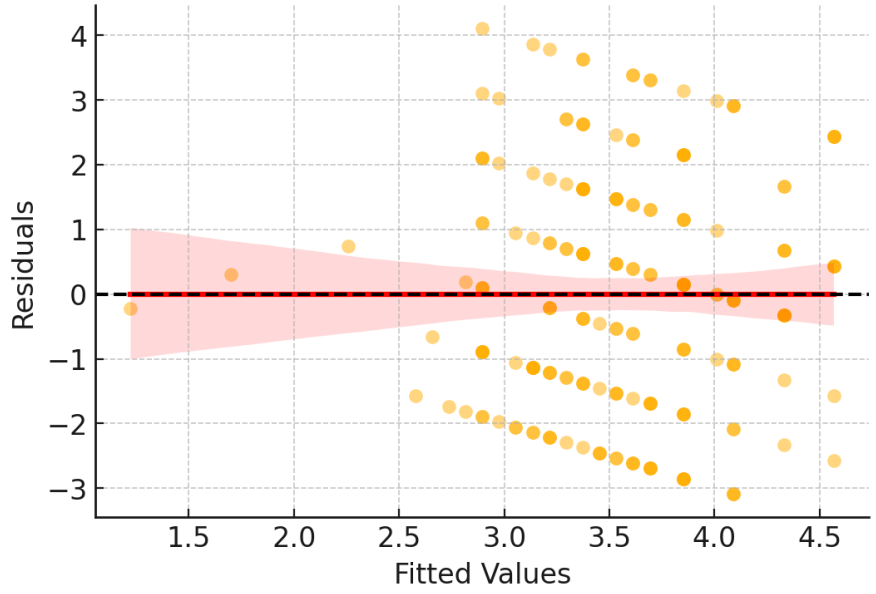

Figure 5. Scatterplot of residuals vs. fitted values (Regression analysis)

Independence of Observations: The Durbin-Watson statistic was 1.79, indicating no severe autocorrelation among residuals.

Normality of Residuals: A Q-Q plot was used to assess the normality of residuals. While the residuals followed a general normal pattern, the Shapiro-Wilk test resulted in a p-value of 0.000, indicating some deviation from normality.

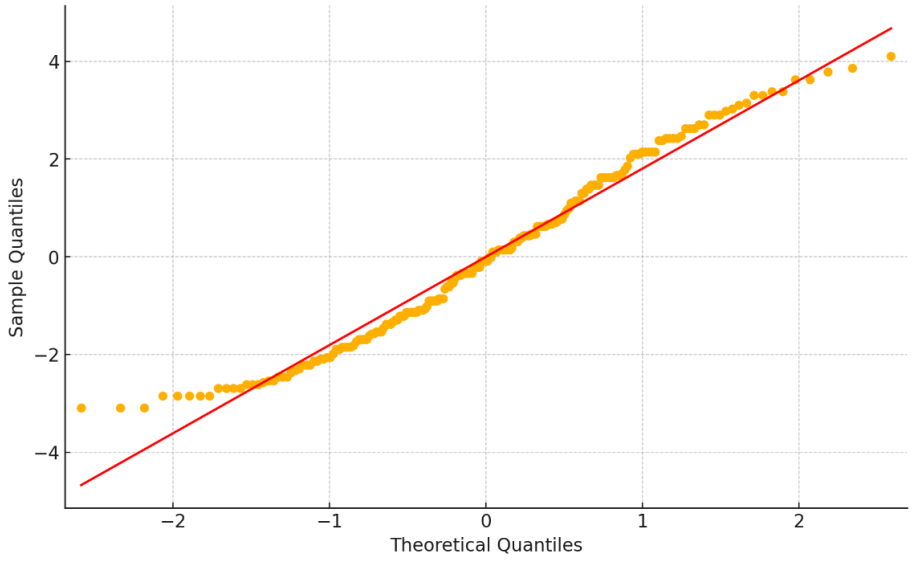

Figure 6. A Q-Q plot - normality of residuals (Regression analysis)

Homoscedasticity: Residual plots were examined to assess homoscedasticity. The Breusch-Pagan test produced a p-value of 0.618, confirming that variance remained relatively constant across predicted values.

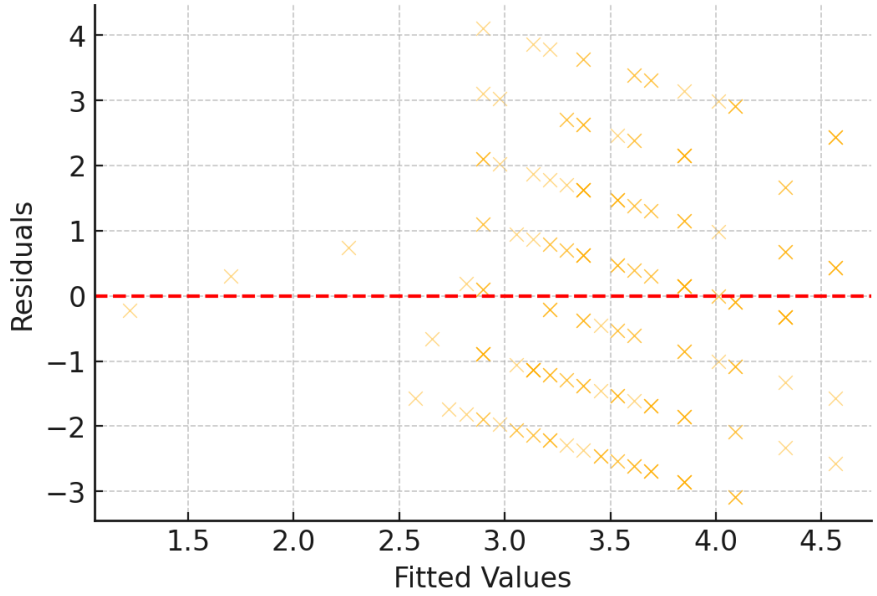

Figure 7. Residual plots – homoscedasticity (Regression analysis)

Multicollinearity: The Variance Inflation Factor (VIF) values were examined for independent variables, with all values indicating no severe collinearity.

The Durbin-Watson statistic was 1.79, indicating no severe autocorrelation among residuals. Normality of residuals was assessed using the Shapiro-Wilk test, which resulted in a p-value of 0.000, suggesting some deviation from normality.

Homoscedasticity was tested using the Breusch-Pagan test, yielding a p-value of 0.618, confirming that variance is relatively constant across different levels of predicted values. Finally, multicollinearity was examined using the Variance Inflation Factor (VIF), with all values indicating no severe collinearity among independent variables. Minor deviations in normality are noted but are not severe enough to invalidate the results.

After confirming that the assumptions for regression analysis are satisfied, it is equally important to verify the assumptions specific to mediation analysis. Since mediation involves additional layers of interaction among variables, particularly with the inclusion of mediators such as attitudes and perceived behavioral control, its assumptions require separate validation to ensure accurate interpretation of indirect effects.

4.2.2 Assumptions for Mediation Analysis

The assumptions for mediation analysis were tested to ensure the validity of the results.

Linearity Check: A scatterplot of residuals vs. fitted values was analysed to check for linearity in the independent variable to the mediator relationship. The plot confirmed that residuals were randomly distributed without any clear patterns, suggesting that the linearity assumption was met.

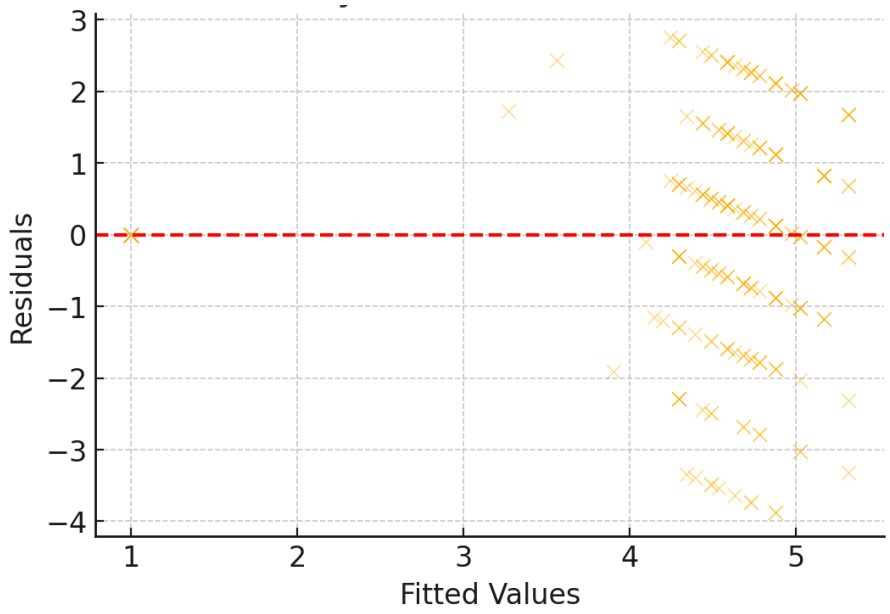

Figure 8. A scatterplot of residuals vs. fitted values (Mediation analysis)

Independence of Observations: The Durbin-Watson statistic was 1.82, indicating no severe autocorrelation among residuals.

Normality of Residuals: A Q-Q plot was used to assess the normality of residuals in the mediator to the dependent variable relationship. While the residuals followed a general normal pattern, the Shapiro-Wilk test resulted in a p-value of 0.005, indicating some deviation from normality.

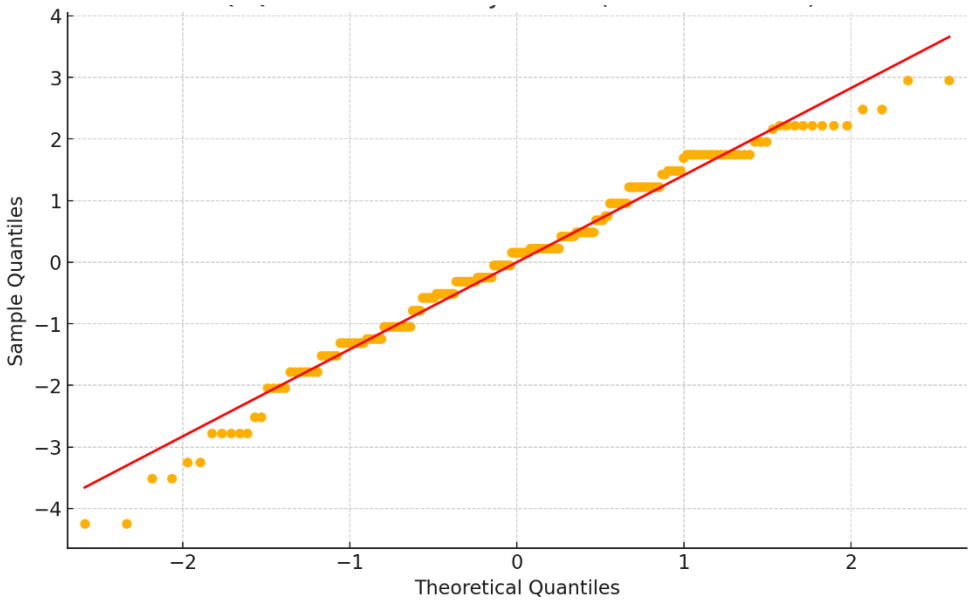

Figure 9. A Q-Q plot - normality of residuals (Mediation analysis)

Homoscedasticity: Residual plots were examined to assess homoscedasticity. The Breusch-Pagan test produced a p-value of 0.000, indicating heteroscedasticity, which should be considered in further analysis.

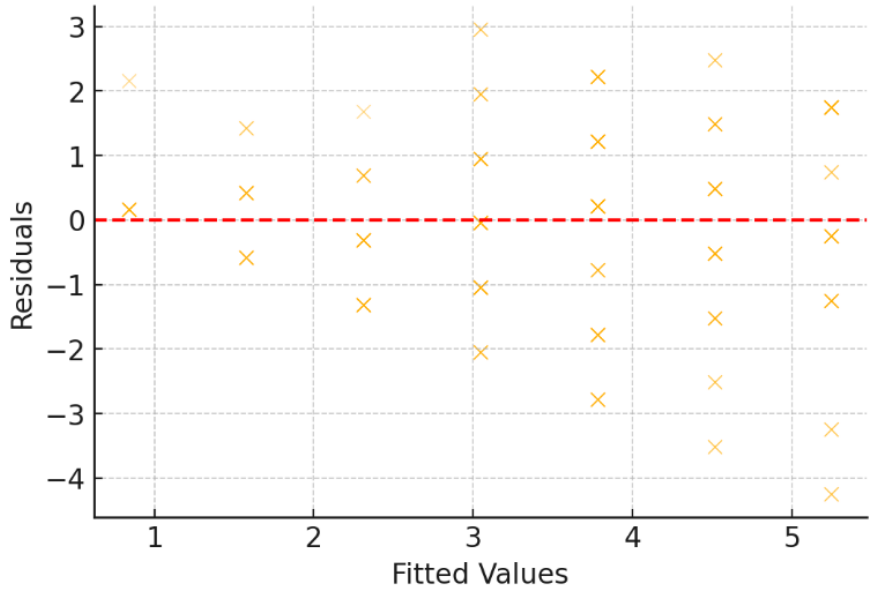

Figure 10. Residual plots – homoscedasticity (Mediation analysis)

Multicollinearity: The Variance Inflation Factor (VIF) values were examined for independent variables, with all values indicating no severe collinearity.

The visual diagnostics, including scatterplots and Q-Q plots, further confirm these findings, ensuring that the mediation analysis can proceed with confidence. Minor deviations in normality and homoscedasticity are noted but do not significantly affect the overall validity of the analysis.

In addition to regression and mediation analyses, this study employs ANOVA to examine whether subjective norms vary across different demographic groups. Given that ANOVA relies on its own set of assumptions—particularly regarding variance and distribution across categories—it is essential to test these conditions before proceeding with hypothesis testing related to demographic variables.

4.2.3 Assumptions for ANOVA

The assumptions for ANOVA were tested to ensure the validity of the results.

Normality within Groups: The Shapiro-Wilk test results for age, gender, and education level all returned p-values of 0.000, suggesting some deviation from normality. Q-Q plots were analysed for each category to visually inspect the distribution, showing slight skewness in some groups.

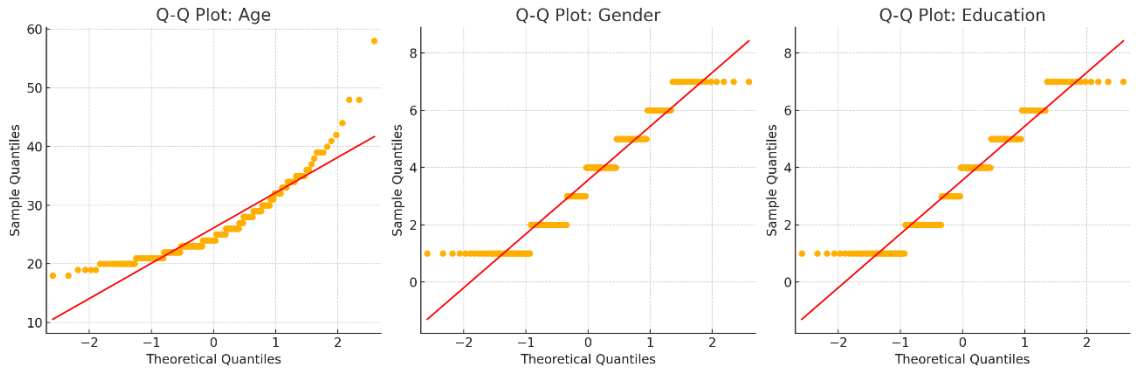

Figure 11. Q-Q plots - Normality within Groups (ANOVA)

Homogeneity of Variances: Levene's test for homogeneity of variances produced a p-value of 0.525, indicating that variance is approximately equal across groups. Boxplots further confirmed this assumption, showing a relatively consistent spread of entrepreneurial intention scores across age, gender, and education level groups.

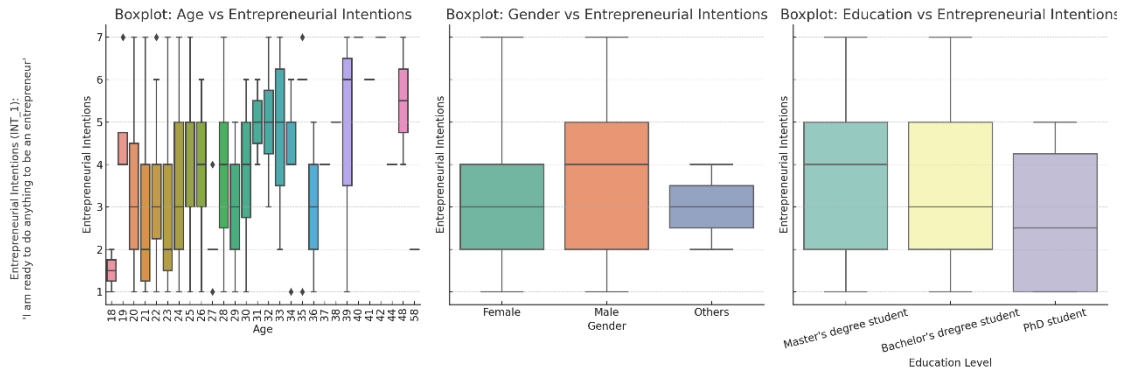

Figure 12. Boxplot - Homogeneity of variances (ANOVA)

Independence of Observations: This assumption was addressed through the study design, where data was collected using a cross-sectional, single-response approach. Each participant completed the survey independently without group settings or repeated measures. Additionally, the independence of residuals was statistically assessed using the Durbin-Watson test, which returned values near 2.0 in the relevant regression models, indicating no serious autocorrelation or violation of the independence assumption.

The visual diagnostics, including Q-Q plots and boxplots, further confirm these findings, ensuring that ANOVA analysis can proceed with confidence. While normality deviations are observed, ANOVA is generally robust to minor violations of this assumption.

Having confirmed the statistical assumptions for the selected analyses, the next section presents the hypothesis testing results, organized by the type of effect (direct, mediation, moderation, and demographic).

4.3 Inferential Statistics (Hypothesis Testing)

4.3.1 Direct Effect Analysis (H1)

This section begins the inferential analysis by testing the direct effect of subjective norms on students' entrepreneurial intentions. According to the Theory of Planned Behavior, subjective norms are expected to influence intention directly by reflecting the perceived social pressure from important referents. The hypothesis below outlines this proposed relationship, which will be tested using regression analysis.

Hypothesis H1: *Subjective norms have direct impact on students' entrepreneurial intentions.*

Dependent Variable (Y): Entrepreneurial Intentions (Composite score)

Independent Variable (X): Subjective Norms (Composite score)

Table 8. Regression analysis – Model fit summary

Regression Analysis			
Model Fit Summary			
R-squared	**Adjusted R-squared**	**F-statistic**	**Prob (F-statistic)**
0.049	0.044	10.42	<0.00145

This table provides a clear view of how much of the variation in entrepreneurial intentions can be explained by subjective norms and confirms the statistical significance of the relationship analysed in this study. R-squared value 0.049 means that approx. 4.9% of the variance in entrepreneurial intentions is explained by subjective norms. This value is reasonably low, suggesting other factors might also play significant roles entrepreneurial intentions. F-statistic value is 10.42, which is significant (Probability < 0.00145), indicating the model is statistically significant.

Table 9. Regression analysis – Regression coefficients

Regression Analysis					
Regression Coefficients					
Variable	**Coefficient**	**Standard Error**	**t-value**	**P-value**	**95% Confidence Interval**
Intercept	3.351	0.223	15.030	<0.0001	[2.911, 3.791]
Subjective Norms (Composite)	0.083	0.026	3.228	0.0015	[0.032, 0.134]

Intercept coefficient 3.3510 (with a standard error of 0.223) is statistically significant and represents the baseline entrepreneurial intention when subjective norms are zero while the subjective Norms (composite) coefficient 0.0830 (with a standard error of 0.026) is also statistically significant ($p = 0.001$). This suggests a positive relationship between subjective norms and entrepreneurial intentions. The positive coefficient for subjective norms implies that as the perceived support and positive norms from an individual's social circle increase, their entrepreneurial intentions also tend to increase. This supports Hypothesis 1, stating that "Subjective norms have a direct impact on students' entrepreneurial intentions."

Effect size and practical significance: To assess the practical significance of the results, Cohen's f^2 was calculated. According to Cohen (1988), f^2 values of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. The effect size of this analysis is 0.052 suggests that subjective norms have a small but meaningful effect on entrepreneurial intentions.

From a practical perspective, while subjective norms significantly predict entrepreneurial intentions, the small effect size implies that additional factors, such as personality traits, perceived behavioral control, and prior entrepreneurial exposure, also contribute to students' entrepreneurial motivations. This finding highlights the importance of a holistic approach in fostering entrepreneurship, considering both social influences and individual psychological factors.

Thus, **Hypothesis H1** is supported, indicating that subjective norms have a direct impact on students' entrepreneurial intentions. However, additional research should explore other contributing factors to enhance the predictive power of entrepreneurial intention models.

While the direct effect of subjective norms on entrepreneurial intentions has been established, the Theory of Planned Behavior suggests that this influence may also operate indirectly through other psychological factors. To explore this deeper mechanism, the next section conducts mediation analysis to examine whether attitudes toward entrepreneurship and perceived behavioral control serve as mediators in the relationship between subjective norms and entrepreneurial intentions.

4.3.2 Mediation Analysis (H2, H3)

Building on the direct effect analysis, this section explores whether the influence of subjective norms on entrepreneurial intentions is mediated by two psychological constructs: attitudes toward entrepreneurship and perceived behavioral control. The Theory of Planned Behavior suggests that subjective norms may shape intention indirectly through these internalized beliefs and perceptions. The following hypotheses are tested using mediation analysis to examine these indirect pathways.

Hypothesis H2: *Subjective norms have indirect impact on students' entrepreneurial intentions through attitude towards entrepreneurship.*

Hypothesis H3: *Subjective norms have indirect impact on students' entrepreneurial intentions through perceived behavioural control.*

To test the indirect effects specified in **Hypotheses 2 (H2)** and **3 (H3)** through mediation analysis, this analysis is to focus on the role of attitudes towards entrepreneurship (ATT variables) and perceived behavioral control (PBC variables) as mediators between subjective norms (SN variables) and entrepreneurial intentions (INT variables).

Mediation Analysis:

Model 1 (Direct Effect): Regress INT on SN to establish the direct effect before accounting for mediation.

Model 2 (Mediator Model): Regress ATT and PBC on SN to establish the impact of SN on the potential mediators.

Model 3 (Indirect Effect): Regress INT on SN, ATT, and PBC to see if the inclusion of ATT and PBC reduces the effect of SN on INT, indicating mediation.

Table 10. Mediation analysis – Direct effect (Model 1)

Mediation Analysis	
Direct Effect (Model 1)	
Coefficient of SN on INT	**R-squared**
0.083 (p = 0.001)	0.049

Direct effect (Model 1) Regress INT on SN to establish the direct effect before accounting for mediation. This coefficient indicates that a one-unit increase in subjective norms (which could represent an increase in perceived social support or pressure towards entrepreneurship) is associated with an 0.083 unit increase in the score of entrepreneurial intentions. The positive coefficient suggests that students who perceive stronger entrepreneurial norms or support within their social environment are more likely to express stronger entrepreneurial intentions.

The p-value is less than 0.05, indicating that the effect of subjective norms on entrepreneurial intentions is statistically significant. This means that there is strong evidence to reject the null hypothesis that subjective norms have no effect on entrepreneurial intentions, affirming the relevance of social influences in shaping entrepreneurial intentions.

The R-squared value of 0.049 means that approximately 4.9% of the variability in entrepreneurial intentions among the students can be explained by the variations in subjective norms. While the effect is statistically significant, the R-squared value is relatively low, suggesting that subjective norms alone do not account for most of the variability in entrepreneurial intentions. This implies that other factors, beyond those measured by subjective norms, significantly influence entrepreneurial intentions as well.

Table 11. Mediation analysis – Mediator model (Model 2)

Mediation Analysis			
Mediator Model (Model 2)			
Effect of SN on ATT		**Effect of SN on PBC**	
Coefficient	**R-squared**	**Coefficient**	**R-squared**
0.623 ($p < 0.0001$)	0.714	0.457 ($p < 0.0001$)	0.531

Effect of SN on ATT:

This coefficient 0.623 suggests that a one-unit increase in subjective norms is associated with a 0.623 unit increase in positive attitudes towards entrepreneurship. The substantial positive coefficient indicates that stronger subjective norms significantly enhance positive attitudes toward entrepreneurship, suggesting that the social environment and normative beliefs powerfully shape individual attitudes. The extremely small p-value signifies that this relationship is statistically significant, providing robust evidence against the null hypothesis of no effect.

An R-squared of 0.714 indicates that approximately 71.4% of the variance in attitudes towards entrepreneurship is explained by subjective norms. This high value underscores the strong influence of subjective norms on shaping attitudes, suggesting that attitudes towards entrepreneurship are heavily influenced by the social and normative context.

Effect of SN on PBC:

The coefficient 0.457 suggests that a one-unit increase in subjective norms results in a 0.457 unit increase in perceived behavioral control. This positive coefficient suggests that individuals who perceive stronger support or pressure towards entrepreneurship from their social environment also feel more capable of successfully engaging in entrepreneurial activities. Similar to the effect on attitudes, the relationship between

subjective norms and perceived behavioral control is statistically significant, firmly rejecting the null hypothesis of no effect.

The R-squared value of 0.531 means that over half of the variance in perceived behavioral control can be explained by subjective norms. This substantial proportion indicates a significant influence, although it is somewhat less than the influence on attitudes.

Model 2 demonstrates that subjective norms not only directly influence entrepreneurial intentions (as seen in Model 1) but also play a crucial role in shaping both attitudes towards entrepreneurship and perceived behavioral control. The high R-squared values for both mediators suggest that the social context and perceived norms are pivotal in forming the cognitive and perceptual bases that underlie entrepreneurial intentions.

This strong mediation effect sets the stage for testing the full mediation model (Model 3), where both ATT and PBC are included as mediators between subjective norms and entrepreneurial intentions, potentially explaining more comprehensively how subjective norms influence entrepreneurial intentions through these psychological constructs.

Table 12. Mediation analysis – Full model with mediators (Model 3)

Mediation Analysis			
Full Model with Mediators (Model 3)			
Coefficients			**R-squared**
SN on INT	**ATT on INT**	**PBC on INT**	
-0.024 ($p = 0.052$, no longer significant when mediators are included)	0.868 ($p < 0.0001$)	0.310 ($p < 0.0001$)	0.815

Model 3 incorporates the full mediation model including subjective norms (SN), attitudes towards entrepreneurship (ATT), and perceived behavioral control (PBC) as predictors of entrepreneurial intentions (INT).

Coefficients and Significance: SN on INT

The coefficient for subjective norms becomes slightly negative and is no longer statistically significant ($p = 0.052$) when mediators are included in the model. This change suggests that the initial positive direct effect of subjective norms on entrepreneurial intentions observed in Model 1 is fully accounted for by the mediators, indicating full mediation.

Coefficients and Significance: ATT on INT

A very strong positive coefficient for attitudes towards entrepreneurship, which is highly significant ($p < 0.0001$). This indicates that positive attitudes towards entrepreneurship are a strong predictor of higher entrepreneurial intentions. This result supports the theory that how individuals feel about entrepreneurship, influenced by their perceptions and beliefs, significantly impacts their intention to engage in entrepreneurial activities.

Coefficients and Significance: PBC on INT

A significant positive coefficient for perceived behavioral control ($p < 0.0001$) suggests that individuals who believe they have the control and ability to perform entrepreneurial activities are more likely to have higher entrepreneurial intentions. This reflects the importance of self-efficacy and control perceptions in the entrepreneurial intention process.

Model Fit:

A substantial increase in the R-squared value to 0.815 in this full model compared to the direct effect model (R-squared = 0.049) illustrates that including ATT and PBC significantly enhances the model's explanatory power. This high R-squared value indicates that about 81.5% of the variability in entrepreneurial intentions is explained by this model, showing a strong overall fit.

Model 3 demonstrates that while subjective norms directly influence entrepreneurial intentions, this effect is fully mediated by attitudes towards entrepreneurship and perceived behavioral control. The negative and nonsignificant coefficient for subjective norms when mediators are included implies that the direct influence of social norms is effectively transmitted through these psychological constructs.

This mediation effect is crucial because it highlights the complex interplay between social influences and individual psychological states in forming entrepreneurial intentions. The results strongly support the **hypotheses (H2 and H3)** that attitudes and perceived behavioral control mediate the relationship between subjective norms and entrepreneurial intentions. This comprehensive model underscores the importance of considering both direct and indirect effects when studying factors that influence entrepreneurial intentions.

Effect size and practical significance: To evaluate the impact of mediation, Cohen's f^2 was computed for Model 3 and the value is 4.41 which represents a large effect size, indicating that including ATT and PBC in the model significantly improves its explanatory power.

The strong mediation effect suggests that subjective norms influence entrepreneurial intentions mainly through psychological mechanisms rather than direct influence. Entrepreneurship education and interventions should focus on fostering positive attitudes and self-efficacy (PBC) rather than only emphasizing social norms. The high R-squared value (0.815) indicates that most of the variation in entrepreneurial intentions can be explained by subjective norms through these mediators.

In addition to exploring the mediating pathways, this study also investigates whether the strength of the relationship between subjective norms and entrepreneurial intentions varies based on certain contextual and experiential factors. The following section presents the moderation analysis, focusing on how the presence and success of entrepreneurs in one's network, as well as the respondent's own entrepreneurial and professional experiences, influence the effect of subjective norms.

4.3.3 Moderation Analysis (H4a, H4b, H5, H6)

In addition to direct and mediated effects, this section examines whether the strength of the relationship between subjective norms and entrepreneurial intentions is influenced by contextual or experiential factors. Specifically, moderation analysis is used to test whether variables such as the presence and success of entrepreneurs in a student's close network, along with the student's own entrepreneurial and professional experiences, alter how subjective norms shape entrepreneurial intentions. The following hypotheses guide this investigation.

Hypothesis H4a: *Subjective norms are influenced by the presence of entrepreneur among individual's close ones.*

Hypothesis H4b: *Subjective* norms are influenced by the success of entrepreneurs among individual's close ones.

Hypothesis H5: *Subjective* norms are influenced by individual's own entrepreneurial experience.

Hypothesis H6: *Subjective norms are influenced by individual's own professional experience.*

Table 13. Linear Regression Analysis – Model Summary

Predictor / Hypothesis	Coefficient	R-squared	P-value
Presence of Entrepreneurs (H4a)	1.95	0.044	<0.05
Success of Entrepreneurs (H4b)	-0.35	0.0196	<0.05
Own Entrepreneurial Experience (H5)	0.52	0.0023	>0.05
Own Professional Experience (H6)	1.54	0.0042	>0.05

The presence of entrepreneurs among close contacts **(H4a)** has a significant positive effect on subjective norms ($\beta = 1.95$, $p < 0.05$), confirming that individuals with entrepreneurial networks perceive stronger social norms favouring entrepreneurship. However, the low R^2 value (0.044) suggests that this factor alone explains only 4.4% of the variance, implying that additional variables contribute to subjective norms. Success of entrepreneurs among close contacts **(H4b)** shows a negative effect ($\beta = -0.35$, $p < 0.05$), suggesting that witnessing entrepreneurial success may create perceptions of high barriers to entry, potentially discouraging entrepreneurship. The low R^2 (0.0196) indicates that this factor explains only 1.96% of the variance, meaning its influence is minimal.

Own entrepreneurial experience **(H5)** has a small positive effect ($\beta = 0.52$, $p > 0.05$), but the extremely low R^2 (0.0023) suggests that this experience alone does not significantly shape subjective norms. Own professional experience **(H6)** also has a minor positive effect ($\beta = 1.54$, $p > 0.05$), but the very low explanatory power ($R^2 = 0.0042$) suggests limited impact on subjective norms.

Effect size and practical significance: To assess the practical significance of these findings, Cohen's f^2 was calculated for each hypothesis:

Table 14. Effect size calculation - Cohen's f^2

Hypothesis	R-squared	Cohen's f^2	Effect Size
Presence of Entrepreneurs (H4a)	0.044	0.046	Small
Success of Entrepreneurs (H4b)	0.0196	0.020	Small
Own Entrepreneurial Experience (H5)	0.0023	0.002	Negligible
Own Professional Experience (H6)	0.0042	0.004	Negligible

The results indicate that **H4a** and **H4b** have small effect sizes, meaning they have a measurable but limited impact on subjective norms. **H5** and **H6** show negligible effect sizes, indicating minimal influence of personal experience on subjective norms.

Entrepreneurial networks **(H4a)** significantly shape subjective norms, but their influence is small. This suggests that while exposure to entrepreneurs fosters an entrepreneurial mindset, additional factors (e.g., education, media exposure, cultural influences) play a stronger role. Success of entrepreneurs among close contacts **(H4b)** negatively influences subjective norms, possibly due to perceptions of high barriers to entry. This finding highlights the paradox of entrepreneurial success, where excessive achievement may intimidate rather than inspire.

Personal entrepreneurial experience **(H5)** has an insignificant effect, suggesting that simply having experience is not enough to shift subjective norms. Structured training, mentorship, and reflection on entrepreneurial experiences may be necessary to convert experience into a meaningful influence on norms. Professional experience **(H6)** also has a negligible effect, reinforcing the idea that general work experience does not necessarily translate into entrepreneurial encouragement. Future studies should explore specific types of work experiences (e.g., startup environments) that may have a stronger impact.

Thus, **H4a** is supported, while **H4b** contradicts expectations. **H5** and **H6** show weak support, highlighting the need for a broader model incorporating cultural, psychological, and environmental factors to better predict subjective norms toward entrepreneurship.

After examining how experiential and contextual factors moderate the relationship between subjective norms and entrepreneurial intentions, the analysis now turns to demographic characteristics. The following section investigates whether subjective norms differ across categories such as gender, age, and education level, providing insights into how these individual differences may shape entrepreneurial perceptions.

4.3.4 Demographic Analysis (H7, H8, H9)

Finally, this section investigates whether subjective norms vary significantly across different demographic groups. Using ANOVA, the analysis examines whether gender, age, or level of education distinguish how students perceive social pressure related to entrepreneurship. These demographic factors may reveal underlying patterns that

influence how subjective norms are formed. The following hypotheses are formulated to guide this examination.

Hypothesis H7: *Subjective norms are distinguished by gender.*

Hypothesis H8: *Subjective norms are distinguished by age.*
Hypothesis H9: *Subjective norms are distinguished by level of education.*

Table 15. ANOVA test

Predictor / Hypothesis	F-Statistics	P-value	Effect Size (η^2)	Interpretation
Gender (H7)	0.482	0.618	0.002	No effect
Age (H8)	1.566	0.211	0.007	Small effect
Education Level (H9)	0.627	0.535	0.003	No effect

The results indicate that none of the demographic variables significantly influence subjective norms:

The analysis of demographic variables reveals no statistically significant differences in subjective norms based on gender, age, or education level. For **gender (H7)**, the p-value of 0.618 is well above the 0.05 threshold, and the negligible effect size ($\eta^2 = 0.002$) indicates that gender does not meaningfully influence subjective norms. In the case of **age (H8)**, although the F-statistic (1.566) is higher than that for gender, the p-value remains above the significance level at 0.211. The effect size ($\eta^2 = 0.007$) suggests a very small, yet statistically insignificant, influence of age on subjective norms. Similarly, **education level (H9)** shows no significant impact, with an F-statistic of 0.627 and a p-value of 0.535. The effect size ($\eta^2 = 0.003$) further confirms the negligible role of education level in differentiating subjective norms among the participants.

Effect size and practical significance: Effect sizes (η^2) for all demographic variables are very small, meaning that these factors do not have a strong influence on subjective norms. η^2 values of 0.01, 0.06, and 0.14 correspond to small, medium, and large effects, respectively. The highest observed value here is 0.007 for age, which is still below the threshold for a small effect.

Demographic factors alone do not explain variations in subjective norms. Since gender, age, and education level do not significantly distinguish subjective norms, other social, psychological, and environmental factors likely play a much more substantial role. Future

research should explore alternative moderators, such as economic background, cultural values, or prior exposure to entrepreneurial role models, to better understand what shapes subjective norms. Thus, **H7**, **H8**, and **H9** are not supported, emphasizing the need for more comprehensive models that consider psychological and contextual factors rather than relying on demographic distinctions to explain subjective norms.

With all hypotheses tested, the following section provides a discussion of the results, comparing them with findings from prior research and interpreting their implications within the theoretical framework.

4.4 Discussion of Findings

This section provides a comprehensive interpretation of the study's results by linking them with existing literature and theoretical frameworks. The discussion examines the direct, mediation, moderation, and demographic effects of subjective norms on entrepreneurial intentions among students in Finland. These insights help contextualize the findings and highlight their significance in entrepreneurial research.

Overview of Key Findings: The study investigated the role of subjective norms in shaping entrepreneurial intentions among students in Finland. The results indicate that while subjective norms have a statistically significant direct effect, their impact is relatively small. However, mediation analysis revealed that subjective norms exert a much stronger influence on entrepreneurial intentions through attitudes toward entrepreneurship and perceived behavioral control. Additionally, the presence of entrepreneurs in one's close network positively affects subjective norms, while exposure to highly successful entrepreneurs may discourage entrepreneurial norms. Furthermore, demographic factors such as gender, age, and education level were found to have no significant influence on subjective norms, suggesting that they are more affected by social and psychological elements rather than demographic characteristics.

Direct Effects of Subjective Norms: Regression analysis confirmed that subjective norms significantly impact entrepreneurial intentions, though the effect size was small ($f^2 = 0.052$). This finding aligns with Ajzen's (1991, 181) Theory of Planned Behavior, which suggests that subjective norms shape behavioral intentions. However, the low R-squared value (0.049) suggests that subjective norms alone do not account for most of the variation in entrepreneurial intentions. This highlights the importance of additional

factors, such as attitudes and perceived behavioral control, in influencing entrepreneurial intentions.

Mediation Effects: Mediation analysis demonstrated that subjective norms influence entrepreneurial intentions primarily through attitudes toward entrepreneurship and perceived behavioral control. The inclusion of these mediators in the model significantly improved its explanatory power, with R-squared increasing to 0.815 ($f^2 = 4.41$), indicating a large effect size. This suggests that students' perceptions of social support or pressure shape their attitudes and self-efficacy, which in turn drive their entrepreneurial intentions. These findings align with previous research emphasizing the role of psychological mediators in entrepreneurial decision-making. (Liñán & Chen 2009, 598; González-Serrano et al. 2018, 391; Nessel et al. 2024, 93-94).

Moderation Effects: Moderation analysis examined how subjective norms are influenced by external factors such as the presence and success of entrepreneurs in one's network, as well as personal entrepreneurial and professional experience. The results showed that:

Having entrepreneurs in one's network positively influences subjective norms ($f^2 = 0.046$), though the effect size is small. Exposure to highly successful entrepreneurs negatively impacts subjective norms ($f^2 = 0.020$), suggesting that perceptions of high barriers to entry may discourage entrepreneurial engagement. Personal entrepreneurial and professional experience had negligible effects on subjective norms, indicating that merely having exposure to entrepreneurship does not necessarily translate into stronger entrepreneurial norms.

Demographic Effects: ANOVA results demonstrated that demographic factors such as gender, age, and education level do not significantly influence subjective norms. The effect sizes for all demographic variables were minimal ($\eta^2 < 0.01$), suggesting that subjective norms are shaped more by social and psychological factors than demographic attributes. These findings contrast with some prior studies (Schlaegel & Koenig 2014, 319-320; Souitaris et al. 2007, 585-586) that suggest education level may have a positive influence on entrepreneurial norms. The lack of significant demographic effects in this study may be due to the homogeneous nature of the sample, which primarily consisted of young university students.

Integration of Findings: The overall findings of this study emphasize that subjective norms play an essential but indirect role in shaping entrepreneurial intentions. While their direct effect is small, their influence becomes substantial when mediated through attitudes toward entrepreneurship and perceived behavioral control. Additionally, entrepreneurial networks influence subjective norms, but exposure to successful entrepreneurs may sometimes act as a deterrent. The lack of significant demographic effects suggests that entrepreneurship education and support programs should focus on fostering strong entrepreneurial attitudes and confidence rather than targeting specific demographic groups. These results reinforce the need for a comprehensive approach to fostering entrepreneurial intentions, one that incorporates social, psychological, and contextual influences rather than relying solely on demographic or direct normative influences.

The key findings discussed above are summarized in the following section to provide a concise overview of the outcomes of each hypothesis and their broader implications.

4.5 Summary of Results

The primary objective of this study was to assess how subjective norms influence entrepreneurial intentions among students in Finland. A secondary aim was to investigate how various contextual and experiential factors - such as entrepreneurial exposure, professional experience, and demographic characteristics - affect the formation of subjective norms. A summary of the results is listed in table 16.

Table 16. Summary of the results

Hypothesis	Result	Effect Size	Interpretation
H1	Support	$f^2 = 0.052$ (small)	Subjective norms have a statistically significant direct effect, though small. These norms alone are not enough to shape intentions.
H2	Support	$f^2 = 4.41$ (large)	Subjective norms strongly influence intentions indirectly via attitudes. Interventions should focus on cultivating positive attitudes.
H3	Support	$f^2 = 4.41$ (large)	Subjective norms strongly influence intentions via perceived behavioral control. Building students' confidence is essential.
H4a	Support	$f^2 = 0.046$ (small)	Entrepreneurial presence in close networks increases subjective norms. Peer exposure can subtly shape entrepreneurial orientation.
H4b	No support	$f^2 = 0.020$ (small)	Success of entrepreneurs among close individuals is negatively correlated with subjective norms, suggesting

Hypothesis	Result	Effect Size	Interpretation
			that higher success might intimidate or discourage entrepreneurial intentions.
H5	Weak support	$f^2 = 0.002$ (negligible)	Entrepreneurial experience has minimal effect. Personal experience alone may be insufficient without reflection or structured support.
H6	Weak support	$f^2 = 0.004$ (negligible)	Professional experience shows weak impact. General work exposure may not influence subjective norms meaningfully.
H7	No support	$\eta^2 = 0.002$ (none)	No significant difference in subjective norms by gender.
H8	No support	$\eta^2 = 0.007$ (small)	No significant difference in subjective norms by age.
H9	No support	$\eta^2 = 0.003$ (none)	No significant difference in subjective norms by level of education.

The most notable finding is that the effect of subjective norms on entrepreneurial intentions is stronger when mediated by attitudes toward entrepreneurship and perceived behavioral control rather than through direct influence. This aligns with previous research conducted in international contexts. (Barba-Sánchez et al. 2022, 6; González-Serrano et al. 2018, 399; Heuer & Liñán 2013, 41-42; Nessel et al. 2024, 91)

In this study, the indirect effect of subjective norms on entrepreneurial intentions is more pronounced through attitudes toward entrepreneurship than through perceived behavioral control. This finding aligns with prior research (Liñán & Chen 2009, 596; González-Serrano et al. 2018, 399; Nessel et al. 2024, 91). Furthermore, the magnitude of this influence among students in Finland is comparable to that observed among students in Poland and Spain, but lower than the levels reported for students in Taiwan (Liñán & Chen 2009, 607; Nessel et al. 2024, 94).

This study reveals that entrepreneurial experience among students' close ones has no significant impact on subjective norms, which contradicts the findings on Polish students. This study also finds different results regarding prior work experience (at least 20% of full-time employment) from Polish students. (Nessel et al. 2024, 92) While Liñán and Chen (2009, 607) showed a positive influence of this experience. However, prior entrepreneurial experience has positive influence in this study which is supported by previous studies (Liñán & Chen 2009, 607).

In this study, gender was not found to significantly influence any of the determinants of entrepreneurial intention. This outcome is consistent with findings from the Global

Entrepreneurship Monitor (GEM 2024), which highlight that the ratio of women to men among early-stage entrepreneurs and business owners in Poland is among the highest across European countries included in the report.

In this study, there is no impact of level of education on subjective norms while prior studies showed some positive influence of level of education on entrepreneurial intentions through subjective norms (Schlaegel & Koenig 2014, 320; Souitaris et al. 2007, 585). Although those studies considered different level of educational institutes.

Prior studies found that younger individuals aged 26-34 have more intention to entrepreneurial intentions while this study found no influence of age in entrepreneurial intentions (Kautonen et al. 2011, 3; Rotefoss & Kolvereid 2005, 122). This might be due to the sample for this study, as 75% respondent's age was below 30 years. Thus, there were not enough data for the analysis.

The analysis presented in Chapter 4 offers a comprehensive view of how subjective norms influence entrepreneurial intentions among students in Finland. By employing a combination of descriptive, inferential, and multivariate statistical techniques, the chapter identified both direct and indirect relationships between key psychological constructs and entrepreneurial behavior. The findings not only confirm the theoretical relevance of subjective norms but also highlight the stronger mediating effects of attitudes and perceived behavioral control in shaping intentions.

These results provide the empirical groundwork for broader reflection on their theoretical implications, practical applications, and the study's overall contributions. In light of these findings, chapter 5 will synthesize the theoretical and practical implications of the study, acknowledge its limitations, and propose directions for future research.

5 Conclusion

This chapter provides a comprehensive conclusion to the study by summarizing its theoretical contributions, practical implications, and recognized limitations while suggesting directions for future research. The research aimed to explore how subjective norms influence entrepreneurial intentions among students in Finland, incorporating both direct and indirect effects, and examining how various experiential and demographic factors shape these norms.

5.1 Theoretical contribution

This study offers three key theoretical contributions to the entrepreneurial intention literature by deepening and contextualizing the Theory of Planned Behavior (TPB) in the Finnish higher education setting. First, it provides empirical support for the TPB framework (Ajzen 1991, 181) by confirming that subjective norms, attitudes, and perceived behavioral control collectively influence students' entrepreneurial intentions. However, rather than exerting a strong direct influence, subjective norms primarily operate through indirect pathways, with attitudes and perceived behavioral control acting as significant mediators. This aligns with and extends the work of Liñán and Chen (2009, 609) and González-Serrano et al. (2018, 399), suggesting that in cultures with high individual autonomy such as Finland, the social norms may shape intentions more effectively when internalized into personal beliefs and confidence.

Second, the study challenges commonly held assumptions about demographic influences within entrepreneurial intention models. Contrary to expectations, gender, age, and education level did not significantly affect subjective norms in this context. This finding contributes to ongoing debates about the relevance of demographic segmentation in TPB-based models and highlights the need for greater attention to psychosocial and contextual variables, such as the presence of entrepreneurs in one’s social network and perceptions of their success.

Third, and more unexpectedly, the study reveals that perceived exposure to highly successful entrepreneurs can negatively impact subjective norms. This contrasts with traditional TPB interpretations that view role models as purely positive referents (Engle et al. 2011, 19-24). The results suggest a potential intimidation or distancing effect,

particularly among less-experienced students, where high entrepreneurial success may feel unattainable. This nuance adds a new dimension to normative influence and calls for theoretical refinements to TPB that account for both motivational and discouraging effects of social comparisons.

In sum, this study contributes to TPB-based entrepreneurship research by reinforcing the importance of mediation mechanisms, encouraging a shift from demographic to psychosocial predictors, and revealing the dual nature of social influence within student populations. It advocates for a more nuanced application of TPB that reflects the internal psychological processing of normative pressures in culturally specific and educationally structured environments like Finland.

While the theoretical contributions deepen the academic understanding, the findings also offer practical lessons for educators, policymakers, and institutions. The next section explores how these insights can inform real-world practices.

5.2 Practical Implication

This study offers several practical implications for entrepreneurship educators, institutional policymakers, and university-based entrepreneurship support services. The results confirm that subjective norms influence entrepreneurial intentions primarily through attitudes and perceived behavioral control rather than directly. This finding underscores the importance of designing interventions that foster not only entrepreneurial knowledge but also students' psychological readiness and belief in their capabilities. Educational institutions should embed confidence-building activities within entrepreneurship curricula (such as simulations, boot camps, and guided reflection sessions) that help transform external social influences into internalized motivation. These activities should aim to strengthen self-efficacy and reinforce the perception that entrepreneurship is a viable and achievable career path.

Furthermore, universities should rethink the structure of mentorship programs by including a broader range of role models. In addition to highly successful entrepreneurs, students should be exposed to early-stage founders and locally relevant entrepreneurs who can share more relatable experiences. This is particularly important in light of the study's finding that exposure to highly successful entrepreneurs may have a discouraging effect on some students. Presenting only idealized success stories can unintentionally

foster feelings of inadequacy or perceived inaccessibility. Therefore, promotional materials, case studies, and guest lectures should be carefully curated to reflect realistic, effort-driven entrepreneurial journeys rather than focusing exclusively on exceptional outcomes.

The absence of significant influence from demographic variables such as gender, age, and education level suggest that entrepreneurship programs should be universally accessible and not segmented solely based on these categories. Instead, program design should be guided by psychological factors such as entrepreneurial mindset, prior exposure to entrepreneurship, and individual readiness to engage. Tailoring support based on these elements is likely to be more effective in fostering genuine entrepreneurial intentions across diverse student groups.

Moreover, since professional and entrepreneurial experience alone did not show a strong effect, experiential learning initiatives must go beyond offering exposure. These programs should incorporate structured community-building elements, such as peer discussions and facilitated reflection, to activate the social reinforcement mechanisms that are critical for shaping subjective norms. Finally, universities should actively create opportunities for students to connect with entrepreneurial ecosystems early in their studies. This can be achieved through regular networking events, collaborations with startup hubs, and interactions with alumni entrepreneurs. Increasing such exposure enhances the likelihood that students will perceive entrepreneurship as both socially supported and personally attainable, thereby strengthening the intention to pursue entrepreneurial paths.

Despite the valuable insights gained, this study is not without its limitations. The next section addresses these limitations and outlines opportunities for future research in this field.

5.3 Limitations and Directions for Future Research

While this study provides important insights into the role of subjective norms in shaping entrepreneurial intentions among students in Finland, several limitations should be acknowledged, particularly from a methodological perspective.

First, the study employed a cross-sectional research design, which captures data at a single point in time. Although this approach allows for efficient data collection and analysis, it limits the ability to examine causal relationships or observe how students' perceptions and intentions evolve over time. As entrepreneurial intention is a dynamic construct that may develop through different phases of education and exposure, future research would benefit from adopting longitudinal or mixed-method designs to better capture changes over time and enrich the explanatory power of the findings.

Second, the study relied exclusively on self-reported data collected through an online survey instrument. While anonymity was maintained to reduce response bias, social desirability bias and self-assessment inaccuracies remain inherent limitations in this method. Future research could address this by incorporating qualitative approaches such as interviews or focus groups, or by triangulating survey data with behavioral measures (e.g., participation in entrepreneurial activities or competitions) to validate self-reported intentions.

Third, although the sample size was sufficient and contextually rich, it was drawn from a specific population—students in Finnish higher education. This limits the generalizability of the findings to other cultural or institutional contexts. Entrepreneurial ecosystems differ across countries in terms of support structures, risk tolerance, and cultural attitudes. Therefore, cross-cultural comparative studies are recommended to test the robustness and transferability of the results across diverse educational systems.

In terms of theoretical advancement, future research could investigate the psychological mechanisms underlying the study's unexpected finding—that exposure to highly successful entrepreneurs may negatively impact subjective norms. Constructs such as entrepreneurial self-efficacy, fear of failure, or perceived attainability could provide useful explanatory frameworks. Experimental studies that manipulate exposure to different types of entrepreneurial role models would be particularly useful in unpacking this effect.

Additionally, future studies could extend the TPB framework by testing alternative mediators and moderators, such as entrepreneurial mindset, perceived institutional support, parental background, or prior entrepreneurship education. Network analysis could also be employed to examine how peer influence and community structure shape subjective norms in student populations. By addressing these methodological and

conceptual areas, future research can build on this study's foundation to generate more comprehensive, culturally sensitive, and practically relevant models of entrepreneurial intention.

The final chapter of this thesis will synthesize the main findings, revisit the research questions, and summarize the theoretical and practical contributions of the study.

6 Summary

This study investigates the role of subjective norms in shaping entrepreneurial intentions among university students in Finland. The research was motivated by a gap in existing literature regarding the influence of social context and behavioral beliefs on students' intention to engage in entrepreneurship, particularly through the lens of the Theory of Planned Behavior (TPB).

The first chapter introduced the research problem, outlined the background, and established the central research question: how do subjective norms influence students' entrepreneurial intentions in Finland? The chapter also presented the scope of the study and the rationale for focusing on the Finnish university environment.

Chapter 2 presented a review of existing literature on entrepreneurship, entrepreneurial intentions, and theoretical frameworks such as TPB. It further explored how subjective norms, attitudes toward entrepreneurship, perceived behavioral control, and demographic and experiential variables relate to entrepreneurial intentions. Based on this, nine hypotheses were formulated, and a conceptual model was developed.

Chapter 3 outlined the research methodology. A quantitative, explanatory research design was used, grounded in a positivist philosophy and deductive approach. Data was collected via a structured online survey from 206 students at the University of Turku. Standardized measurement scales from Liñán & Chen (2009) were used to assess TPB components. The study employed statistical techniques such as regression, mediation, moderation, and ANOVA to test the hypotheses.

In Chapter 4, descriptive statistics and correlation analyses were presented. Statistical assumptions for each analysis method were tested and confirmed. Inferential tests showed that subjective norms significantly influenced entrepreneurial intentions both directly and indirectly—particularly through attitudes and perceived behavioral control. However, demographic factors (gender, age, education) had no significant moderating effects.

Chapter 5 discussed the findings in relation to prior literature, highlighting the strong mediating role of attitudes and perceived control. Theoretical contributions include a refined understanding of how subjective norms function within TPB. Practical

implications emphasized the importance of fostering social support, role models, and confidence-building among students.

This final chapter has provided a concise summary of the entire thesis by highlighting each chapter's main contributions. The study concludes that while subjective norms matter, their influence operates significantly through students' internal beliefs and self-perceptions. Further research could expand the sample beyond one institution and explore longitudinal effects of subjective norms on actual entrepreneurial behavior.

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Appendices

Appendix 1 List of student-driven entrepreneurial societies in Finland

Sl. No.	*Name*	*Website*
1	Aalto Entrepreneurship Society	https://www.aaltoes.com/
2	LUT Entrepreneurship Society	https://lutes.fi/
3	Boost Turku	https://boostturku.com/
4	Helsinki Think Company	https://www.thinkcompany.fi/
5	Jyväskylä Entrepreneurship Society	https://www.jkles.fi/en/
6	Tampere Entrepreneurship Society	https://tamperees.com/
7	Hanken Entrepreneurship Society	https://www.hankenes.org/
8	Patteri Entrepreneurship Society	https://www.patteries.com/
9	Oulu Entrepreneurship Society	https://oulues.com/
10	Joensuu Entrepreneurship Society	https://joensuues.fi/
11	Laurea Entrepreneurship Society	https://laureaes.fi/
12	Pori Entrepreneurship Society	https://www.pories.fi/
13	Arcada Entrepreneurship Society	https://www.arcadaes.com/
14	Metropolia Entrepreneurship Society	https://www.metes.fi/about
15	Seinäjoki Entrepreneurship Society	https://www-seies.fi/
16	Vaasa Entrepreneurship Society	https://www.ves.fi/
17	XES Helsinki Entrepreneurship Society	https://www.xeshelsinki.com/

Appendix 2 List of companies by the alumni of the student-driven entrepreneurial society

Sl. No.	Company Name	Student-driven Entrepreneurial Society	Revenue (2022)
1	Smartly.io	Aaltoes	50M+
2	Wolt	Aaltoes	50M+
3	Silo.ai	OuluES	10M-50M
4	Gapps oy	Aaltoes	10M-50M
5	CubiCasa	OuluES	5M-10M
6	Happeo	Aaltoes	5M-10M
7	Linear	Aaltoes	5M-10M
8	Y4 works	HTC	5M-10M
9	Veri	Aaltoes	2M-5M
10	Huuva	Aaltoes	2M-5M
11	Singa	Aaltoes	2M-5M
12	Brella	JES	2M-5M
13	Falcony	LaureaES	2M-5M
14	Icebreaker	Aaltoes	2M-5M
15	Arctic Signature	LaureaES	2M-5M
16	UniqAir Oy	Lutes	2M-5M
17	Ritkapel Oy	PatteriES	2M-5M

Appendix 3 Survey Questionnaires

Role of subjective norms in shaping entrepreneurial intentions among Students in Finland

Mandatory questions are marked with a asterisk (*)

1.Your Name (Optional)

2. Your gender *

- ○ Female
- ○ Male
- ○ Other

3. Your age (in years) *

4. Your nationality? *

5. You are a..... *

- ◯ Bachelor's dregree student
- ◯ Master's degree student
- ◯ PhD student

6. Are there any entrepreneurs among your close individuals (Family members, friends, and other significant individuals)? *

- ◯ No
- ◯ Yes

8. Have you ever had your own entrepreneurial experience, such as starting or running your own business? *

- ◯ No
- ◯ Yes

9. Have you ever had any work experience, including part-time jobs (at least 20% of full-time employment), internships, or full-time employment? *

- ◯ No
- ◯ Yes

Section 1: Entrepreneurial Intentions (INT)

Please indicate how much you agree with the following statements about your entrepreneurial intentions. (Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Neutral, 5 = Slightly Agree, 6 = Agree, 7 = Strongly Agree)

10. I am ready to do anything to be an entrepreneur. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

11. My professional goal is to become an entrepreneur. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

12. I will make every effort to start and run my own business. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

13. I am determined to create a business in the future. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

14. I have very seriously thought of starting a business . *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

15. I have the intention to start a business someday . *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

Section 2: Attitude Toward Entrepreneurship (ATT)

Please indicate how much you agree with the following statements about your entrepreneurial intentions. (Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Neutral, 5 = Slightly Agree, 6 = Agree, 7 = Strongly Agree)

16.Being an entrepreneur implies more advantages than disadvantages to me. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

17. A career as an entrepreneur is attractive to me. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

18. If I had the opportunity and resources, I would like to start a business. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

19. Being an entrepreneur would entail great satisfaction for me. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

20. Among various options, I would rather be an entrepreneur. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

Section 3: Subjective Norms (SN)

Please indicate how much you agree with the following statements about your entrepreneurial intentions. (Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Neutral, 5 = Slightly Agree, 6 = Agree, 7 = Strongly Agree)

21. My close family (e.g. parents, siblings, spouse, children) would approve of my decision to become an entrepreneur. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

22. The opinions of my close family (e.g. parents, siblings, spouse, children) about my career choice are important to me. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

23. My friends (e.g. childhood peers, classmates) would approve of my decision to become an entrepreneur. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

24. The opinions of my friends (e.g. childhood peers, classmates) about my career choice are important to me. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

25. People who are important to me (e.g. Colleagues, relatives) would approve of my decision to become an entrepreneur. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

26. The opinions of people who are important to me (e.g. Colleagues, relatives) about my career choice are important to me. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

Section 4: Perceived Behavioral Control (PBC)

Please indicate how much you agree with the following statements about your entrepreneurial intentions. (Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Neutral, 5 = Slightly Agree, 6 = Agree, 7 = Strongly Agree)

27. To start a business and keep it working would be easy for me. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

28. If I tried to start a business, I would have a high probability of succeeding. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

29. I can control the creation process of a new business. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

30. I know the necessary practical details to start a business. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

31. I know how to develop an entrepreneurial project. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

Appendix 4 Data Consent Protocol

Consent for the Storage and Use of Data

Turku School of Economics, University of Turku, Finland

Dear Participant,

Thank you for participating in the survey conducted as part of the research for my master's thesis titled "Role of Subjective Norms in Shaping Entrepreneurial Intentions among Students in Finland." This appendix outlines how your data will be collected, stored, used, and protected in accordance with the ethical and data protection standards of the University of Turku.

Purpose of Data Collection

The data you provided through the survey serves the following purposes:

Academic Research: Your responses will be analysed to understand how subjective norms influence students' entrepreneurial intentions. This contributes to the broader academic field of entrepreneurship and behavioral studies.

Statistical Analysis: Aggregated and anonymized data will be used for statistical evaluation to examine hypotheses using methods such as regression and mediation analysis. The outcomes will be included in this thesis and may inform future academic studies.

Scientific Publication (Optional): With your full consent, anonymized and aggregated data may be used in future scientific publications or conference papers. All identifying information will be removed before any such use.

Anonymity and Confidentiality

All survey responses were collected anonymously without requiring personal identifiers such as names or student numbers. Data has been coded and stored securely, and individual responses cannot be traced back to you. Only the researcher and academic supervisors have access to the raw data.

Data Storage and Security

During Data Collection: Data was collected via the Webropol and stored on servers located in the European Economic Area, as per the contractual service agreement with the University of Turku.

After Data Collection: Upon completion of the research, data has been exported in anonymized format and stored securely on University of Turku's protected servers. Access is limited to the researcher and authorized faculty members.

Duration of Storage: The anonymized dataset will be retained until 31.12.2026, after which it will be permanently deleted unless required for follow-up academic purposes, in which case it will remain in anonymized form only.

Right to Withdraw

Participants who voluntarily provided their name in the survey may request the removal of their data from the study. If you entered your name while submitting the survey and wish to withdraw your responses, you may do so by contacting the author via email (shahin.m.mia@utu.fi) no later than 30.06.2025. Your data will then be located and deleted from the dataset before final anonymization.

Please note: If you did not provide your name in the survey, your data was collected fully anonymously. In such cases, it is not possible to identify or delete individual responses, and therefore withdrawal of data is not technically feasible after submission.

All data will be permanently anonymized after the withdrawal deadline. Once anonymized, no data can be traced back to any individual by 30.06.2025.

After this date, all data will be anonymized, and withdrawal will no longer be possible as individual records will be unidentifiable.

Appendix 5 Declaration of Artificial Intelligence Assistance

I, Md Shahin Mia, hereby declare that I have utilized the free version of the Artificial Intelligence (AI) tool, ChatGPT, during the preparation of my master's thesis titled *"Role of Subjective Norms in Shaping Entrepreneurial Intentions among Students in Finland."* The objective of using AI support was to enhance the clarity, coherence, and depth of the academic work, while upholding the principles of academic integrity and transparency.

This declaration outlines the specific ways in which ChatGPT assisted throughout the research and writing process, ensuring proper acknowledgment of technological support.

AI Assistance Utilization Areas

Simplifying academic theories and frameworks

ChatGPT was used to better understand complex theoretical models such as the Theory of Planned Behavior and its components, by generating clear, simplified summaries and practical examples.

Prompt Example: *Describe subjective norms and their role in the Theory of Planned Behavior using simple language.*

Explaining statistical analysis concepts

The tool helped clarify various statistical concepts encountered during data analysis, such as interpreting regression outputs and understanding key indicators like p-values and R-squared.

Prompt Example: *"What is the difference between R-squared and Adjusted R-squared in simple terms?"*

Step-by-Step Guidance for SPSS Procedures

ChatGPT was used to outline stepwise instructions for conducting regression, mediation, and ANOVA tests using IBM SPSS.

Prompt Example: *"Provide step-by-step instructions for conducting a regression analysis in SPSS."*

Professional Paraphrasing of Academic Content

AI support was used to rephrase technical and theoretical definitions to ensure clarity, academic tone, and fluency in writing.

Prompt Example: *"Paraphrase the definition of 'attitude towards entrepreneurship' in academic* style."

Improving Flow and Section Transitions

To maintain coherence throughout the thesis, ChatGPT was used to review transitions between major sections, such as literature review, methodology, and findings.
Prompt Example: *"Assess the logical flow of this paragraph and suggest improvements."*

Proofreading for Grammar and Style

Assistance was also sought to review grammar, punctuation, and sentence structure to ensure professional and polished academic writing.

Prompt Example: *"Correct grammar and improve clarity in the following paragraph."*

Simplifying Text by Removing Inline Citations

During the literature review process, ChatGPT was used to create citation-free summaries of scholarly content for easier understanding.

Prompt Example*: "Remove citations from the following text and summarize the content."*

Language Translation for Better Comprehension

In some cases, AI was used to translate academic content into Bengali for deeper understanding of terminology or context.

Prompt Example: *"Translate this explanation of perceived behavioral control into Bengali."*

All AI-generated content was carefully reviewed, edited, and verified by the author. The tool was employed strictly for language refinement, comprehension, and guidance

purposes. All interpretations, analyses, and research insights presented in the thesis are original and authored by me.

This declaration affirms my commitment to academic transparency, ethical conduct, and the responsible application of AI technology in the research process.

Md Shahin Mia

22.04.2025