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The effect of attachment style on entrepreneurial behavior: personal accomplishment as a moderator

Gülçin Kazan^{1*} and Tuğçe Uzun Kocamış²

Abstract

Entrepreneurs are the primary drivers of economic growth in a globalizing world, and as such, it is imperative to understand the psychological determinants of entrepreneurial activity. Even though existing studies have examined some personal traits that influence entrepreneurial behaviors, the exact interplay between attachment styles and entrepreneurial tendencies among students at the university level has not been exhaustively studied [1–2]. Moreover, the potential moderating effect of personal sense of accomplishment is overlooked. This study aims to fill this gap by investigating the effects of attachment styles on entrepreneurial behaviors and the moderating role of personal sense of accomplishment using a sample of 411 Istanbul university students. The study reveals that entrepreneurs with secure attachment styles are more likely to have entrepreneurial intentions, and a high sense of personal accomplishment significantly contributes to such intentions. Such findings suggest that support initiatives and entrepreneurship education should place a very high priority on the acquisition of a sense of personal accomplishment to enable entrepreneurial action.

Keywords Attachment style, Entrepreneurial behavior, Personal accomplishment, Entrepreneurship

Introduction

Entrepreneurship, which is one of the most basic mechanisms of economic development and social welfare, means discovering opportunities based on products and/or services, evaluating these opportunities and turning them into business concepts, processing these concepts and directing them to investment, and lastly ensuring the continuity and efficiency of investments [3]. Societies that support entrepreneurship and increase the number of entrepreneurs through institutional or educational

means benefit significantly in terms of employment, innovation, and competitiveness [4]. An entrepreneur is typically described as a person who generates new ideas, takes risks to implement them, and aims to achieve both individual success and economic value creation [4]. Although many external and structural factors influence the entrepreneurial process, individual psychological traits have been shown to play a particularly important role [5].

The entrepreneurial process includes stages such as idea development, opportunity recognition, fund-raising, and business establishment. These stages are influenced not only by skills or environmental factors, but also by the individual's internal characteristics such as confidence, emotional resilience, and motivational drive [6–8]. While some of these traits are innate, others can be cultivated over time through education and life experience.

*Correspondence:

Gülçin Kazan
gulcin.kazan@izu.edu.tr

¹Faculty of Business and Management Sciences, Istanbul Sabahattin Zaim University, Istanbul, Türkiye

²Vocational School of Social Sciences, Istanbul University Cerrahpaşa, Istanbul, Türkiye



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Entrepreneurial attitudes reflect both the intention to be entrepreneurially active and the behavioral tendency to take initiative, seek opportunity, and innovate. While entrepreneurial intention reflects a motivational willingness to start a business, entrepreneurial behavior reflects observable traits and proactive efforts that may occur even before the formal launch of a business [2–9]. This study aims at university students, a group that is likely to be at the beginning stages of career search, and assesses their entrepreneurial intentions as behavioral outcomes influenced by psychological processes.

In particular, attachment styles, which are established early in life and influence later interpersonal relationships, are predicted to influence entrepreneurial behavior. Attachment was initially developed by John Bowlby in the 1950s to describe the emotional ties children make with caregivers. It was later extended to adulthood to explain patterns of emotional regulation, social interaction, and risk taking—variables extremely pertinent to entrepreneurial motivation and behavior [10–12]. In addition to attachment styles, the sensation of personal accomplishment—a motivational trait associated with perceived competence and self-efficacy—has also been established to facilitate proactive entrepreneurial behaviors [13–15].

University students are a unique population in entrepreneurship research. Their ongoing identity development, high flexibility, and access to academic resources render them ideal targets for entrepreneurial education and first-time ventures [16]. The investigation of the impact of psychological characteristics such as attachment style and perceived personal accomplishment on students' entrepreneurial behavior can yield valuable implications for the design of entrepreneurship education programs [17].

Accordingly, this study aims to examine the impact of attachment styles on entrepreneurial behavior among university students and to assess whether sense of personal accomplishment moderates this relationship. In doing so, it contributes to a deeper understanding of the psychological dimensions of entrepreneurship among emerging adults—a group with high potential for both personal development and economic impact. While this study uses a behavioral scale, it conceptualizes these behaviors as external reflections of entrepreneurial intention, particularly within the student population [2–9]. In line with the Theory of Planned Behavior [9], intentions are considered the most immediate predictors of actual behavior; thus, entrepreneurial behavior among students can be viewed as an early manifestation of strong entrepreneurial intentions shaped by psychological variables.

In the following sections, we define the key psychological constructs and review the theoretical and empirical

literature to establish the framework for our proposed model.

Conceptual definitions

This section includes basic concepts. These concepts are important in terms of evaluating the relationships between psychological factors and entrepreneurial behaviors in a correct context and understanding the theoretical framework of the study.

Attachment styles

Developed by British psychoanalyst John Bowlby in the 1950s, attachment theory proposes that the bonds individuals develop with their caregivers in early childhood shape their social, emotional, and behavioral patterns throughout life [10]. The “Strange Situation” experiments conducted by Mary Ainsworth in the 1970s significantly advanced the development of attachment theory. Through these experiments, Ainsworth observed children's attachment behaviors towards their caregivers and classified attachment styles as secure, anxious, and avoidant [11]. These basic classifications are also used to understand the relationship dynamics of individuals, particularly in adulthood.

In the early 1990s, Bartholomew and Horowitz (1991) expanded attachment theory by adding a fourth category, the fearful-avoidant attachment style [18]. In particular, Brennan, Clark, and Shaver (1998) have examined in depth how attachment styles affect the emotional reactions and social behaviors of adults in their close relationships [19].

Attachment styles are considered important factors that influence individuals' entrepreneurial tendencies [1]. Different attachment styles play a critical role in shaping people's emotional reactions in close relationships, and this can be reflected in people's behavior in risky and independent activities such as entrepreneurship [12].

The basic attachment styles, as outlined by attachment theory, are briefly described below:

- **Secure Attachment:** Characterized by individuals who have a positive self-view and positive views of relationships, being comfortable with both closeness and independence, thus balancing these emotions in a healthy manner [11–18].
- **Anxious-Preoccupied Attachment:** This attachment style describes individuals who define their own value through dependence on others or over-reliance on other individuals [18]. Individuals with this style often seek high levels of closeness and approval and are highly sensitive to their partners' reactions.
- **Dismissive-Avoidant Attachment:** Those with the dismissive-avoidant attachment style, also defined by Bartholomew and Horowitz (1991), typically

maintain emotional distance from others [18]. They often prioritize self-reliance and independence, sometimes ignoring the importance of close relationships [19].

- Fearful-Avoidant Attachment: As discussed by Brennan, Clark, and Shaver (1998), individuals with a fearful-avoidant style exhibit a combination of avoidant and anxious tendencies. They may desire close relationships but are afraid of getting hurt, which leads to avoidance behaviors [19].

Personal achievement sense

A sense of personal accomplishment is a concept related to intrinsic motivational factors such as self-efficacy and self-confidence, reflecting how individuals perceive and evaluate their own success. Defined as a component of the burnout scale developed by Maslach and Jackson (1981), a sense of personal accomplishment is related to an individual finding meaning and value in their work, using their problem-solving skills effectively, and overcoming difficulties encountered in business life [13]. This feeling plays an important role in individuals' entrepreneurial tendencies and behaviors; individuals with a high sense of personal accomplishment are generally more willing and motivated to participate in entrepreneurial activities. Personal accomplishments are not only about reaching a goal, but also about the growth, endurance, and determination exhibited along the way [14].

Entrepreneurship

The concept of entrepreneurship, which refers to the tendency of individuals to develop business ideas, discover opportunities, take risks and offer innovative solutions [7], is related to the personal characteristics of individuals such as self-confidence, self-sufficiency, innovation, risk-taking and success motivation and also has a critical role for social and economic development [4].

The concept of entrepreneurship is the tendency of individuals to generate business ideas, discover opportunities, take risks, and offer innovative solutions [7] and is related to individual characteristics such as self-confidence, self-reliance, risk-taking, and achievement motivation, and entrepreneurship plays a fundamental role in social and economic development [4].

Conceptual framework and literature review

This section covers the theoretical foundations of the study, literature supporting studies, and conceptual framework of the study. The study first sets out the relationships between attachment styles, internal sense of achievement, and entrepreneurial behavior. To this end, the conceptual framework outlines the psychological and behavioral drives that influence individuals'

entrepreneurial tendency through attachment theory and entrepreneurship literature.

Attachment styles and entrepreneurial attitude

The effects of adult attachment styles on complex social arenas such as business life and entrepreneurship have gained increasing research interest over the last few years. Mikulincer and Shaver (2019) have argued that individuals with a secure attachment style possess more mature emotion regulation skills and that such individuals tend to show higher entrepreneurial inclinations [12]. Segal et al. (2023) also made sure that there was a positive relationship between secure attachment and entrepreneurial intentions, and anxious and avoidant attachment styles decreased these intentions [2].

Within the attachment theory context, Hazan and Shaver (1990) argued that attachment styles in close relationships also shape individuals' work orientation and found anxious attachment orientation to negatively correlate with entrepreneurial orientation [20]. Whereas Harms (2011) explained attachment style dynamics in the workplace context, Scrima et al. (2015) found that secure attachment is associated with organizational commitment and favorable business performance [21–22]. Towler and Stuhlmacher (2013) underlined the effect of secure attachment to job satisfaction and work well-being, more so for female employees, while Lanciano and Zammuner (2014) showed that both secure and anxious attachment shape work engagement in organizations [23–24]. Entrepreneurship is a multiconstruct phenomenon that involves individuals' tendencies to create business ideas, take risk, innovate, and evaluate opportunities [7]. In this context, psychological traits of the person and attachment patterns are pertinent factors in accounting for entrepreneurial behavior. Ajzen's (1991) Theory of Planned Behavior and Shapero and Sokol's (1982) Entrepreneurial Event Model propose that individuals' entrepreneurial intentions are determined by attitudes, perceptions, and social norms [9–25]. On this premise, the Zelekha, Yaakobi, and Avnimelech (2018) theoretical model shows that attachment anxiety is the greatest predictor of entrepreneurial variation, and that anxiety and avoidance dimensions directly influence entrepreneurial characteristics [1]. Family history and parental attachment, which are aspects of childhood relationships, also have the ability to affect entrepreneurial inclinations. Jiang, Hayward, and Morris (2017) suggested that parenting has a direct influence on entrepreneurial intentions; Kurniawan et al. (2019) illustrated that proximity to parents increases entrepreneurial orientation in adolescents [26–27]. Lahti et al. (2019) identified the intersection of emotional attachment between entrepreneurs and their parents, highlighting the role of this relationship in building self-confidence [28].

Current studies have shown that attachment styles are decisive factors in the entrepreneurial intentions, attitudes, and behaviors of students in higher learning institutions. Segal et al. (2023) showed that individuals with a secure attachment style have higher entrepreneurial tendencies, while Jansen et al. (2023) showed that secure attachment has the ability to improve mentalization skills and thus has an advantage when it comes to overcoming psychological constraints faced during the entrepreneurial process [2–29]. Mohamad (2023) stated that participation in real-life-based entrepreneurial projects increases student commitment and entrepreneurial skills [30]. On the other hand, insecure attachment has often been associated with chronic anxiety, and it has been suggested that these individuals may have low entrepreneurial motivation [31]. Family support also has a moderating role in the transformation of entrepreneurial intentions into behavior [32–33]. Pergelova et al. (2023) stated that entrepreneurship education may have different effects according to gender, and this may be due to attachment experiences [34]. Emotional attachments such as place attachment may also be effective in entrepreneurial decisions. Lv et al. (2024) revealed that attachment to the hometown increases entrepreneurial intentions, while Luo et al. (2024) revealed that students with insecure attachment style experience psychological distress in foreign environments, and this may suppress entrepreneurial potential [35–36]. Individual qualities such as self-efficacy, risk taking, and innovativeness, which are closely related to entrepreneurship, are also affected by attachment styles. Wu et al. (2022) stated that these psychological resources are effective on entrepreneurial intentions [37]. Huang, Bu, and Long (2023) identified the regulatory environment as a necessary condition for entrepreneurial willingness, while Lu, Song, and Pan (2021) found that institutional support within the university context indirectly strengthens entrepreneurial intentions [38–39]. Chaudhary and Biswas (2024), indicated that personality traits associated with secure attachment, such as altruism and innovation, increase entrepreneurial intentions; Neneh and Dzomonda (2024) showed that internal locus of control and personal commitment levels are determinants of the transition to entrepreneurial behaviors [40–41]. Individual. When all this literature is evaluated together, it is understood that students' attachment styles - in individual, familial or institutional contexts - significantly affect their entrepreneurial potential.

Entrepreneurial behavior and entrepreneurial tendencies

Entrepreneurial behavior and entrepreneurial tendencies play an important role in people establishing a business and making this process sustainable [4]. The basic motivation in entrepreneurial behavior can be defined as the sum of a person's efforts, actions, and attitudes in turning

a business idea into reality [3]. Entrepreneurship as a process includes both establishing and managing an entrepreneurial company and all behaviors that contribute to this process. Undoubtedly, this process is affected by many factors, especially personal characteristics, social environment, social rules, and economic conditions [42].

In general, studies in the literature cover a wide range of factors, especially risk-taking tendencies, personal characteristics, success criteria, economic conditions, and the social environment in which people live. Lachman's (1980) study provides a basic method for measuring entrepreneurial potential through personality traits [43]. Cromie (2000) emphasizes the role of personal characteristics such as need for achievement, locus of control, and creative tendencies in predisposing individuals to entrepreneurship, and suggests that the assessment of entrepreneurial personality can provide insight into a person's potential to achieve success in entrepreneurship [44]. Evidence showing that personal attitudes, social norms, perceived behavioral control, and the perception of self-efficacy are effective in the formation of entrepreneurial intentions show that the same variables are also conclusive in the long-term success of firms [6, 17, 45, 46]. Geri (2013) examined the relationship between entrepreneurial skills and tendencies of young people and found that entrepreneurial motivation and skills are the motivating factors for entrepreneurial tendencies [47]. Yao, Wu, and Long (2016)'s study of university students in China provides evidence of the impact of environmental factors on entrepreneurial tendencies [48]. Holienka et al. (2015) and Tiftik and Zincirkiran (2014) provide data on the difference of entrepreneurial tendencies in their study in order to illustrate the entrepreneurial tendencies and levels of entrepreneurship in students from various academic backgrounds, and students from various academic backgrounds possess different entrepreneurial tendencies [49–50]. Zelekha and Kavé (2022) found that although age is negatively associated with entrepreneurial tendency, this effect diminishes with increasing age and is no longer evident after the age of 50, potentially due to the stability of personality traits such as Openness to Experience and Extraversion [51]. Generally, the study illustrates an overall depiction of entrepreneurial tendencies through illustrating the interaction between personality traits and environmental factors. For university students, entrepreneurial actions are usually nourished by robust entrepreneurial intentions formed while at university.

Personal achievement and entrepreneurial sense

Sense of personal achievement plays an essential role in the explanation of people's beliefs regarding their own ability, intrinsic motivation, and entrepreneurial orientation as a result of external influence. The literature presents insights from research regarding the topic significant

to the knowledge of how sense of personal achievement affects entrepreneurial actions.

Xue et al. (2021) also investigated how entrepreneurial motivation affects individuals' commitment to foreign markets and stated that high achievement motives lead to more powerful international contacts [52]. This suggests that individuals can become more determined to engage in entrepreneurship due to feeling personally successful. Naktiyok et al. (2010) established that entrepreneurial self-efficacy (ESE) has a direct association with entrepreneurial intentions among Turkish students, and it establishes that personal accomplishment increases people's entrepreneurial intentions [53]. Creativity, especially entrepreneurship, is one major element of a sense of personal accomplishment. Walton (2003) examined the connection between creativity and successful entrepreneurial practice and posited that innovation is a significant determinant of entrepreneurial success [54]. Staniewski and Awruk (2021) examined the negative effect of parental attitudes on entrepreneurial success [55]. Tangney et al. (2018) examined the effect of self-control on entrepreneurial behavior and examined the associations between academic achievement and feeling of personal competence [56]. Lima et al. (2020) prioritized psychological capital, which includes such elements as self-efficacy, optimism, hope, and resilience, as the foundation for encouraging entrepreneurial conduct, and, based on their research, experiencing personal accomplishment is an element that encourages individuals' entrepreneurial attitude, and their model is aligned with the evidence regarding the relevance of internal psychological resources [15]. Omerzel Gomezelj and Kušce (2013) also emphasized the importance of personality traits and the environment in shaping entrepreneur performance in their study, and argued that an optimistic work environment and personality traits have a significant effect on perceived entrepreneurial success [57]. All these studies reveal that both intrinsic and extrinsic motivational sources play a critical role in shaping entrepreneurial behaviors and achievements through a sense of personal accomplishment. In this context, a sense of personal accomplishment is an important driving force in the entrepreneurial process and can help individuals overcome the difficulties they encounter on the way to achieving their entrepreneurial goals by strengthening their belief in their inner strength. Therefore, entrepreneurship training and support programs aimed at increasing the sense of personal accomplishment can be considered important strategies for increasing entrepreneurial potential and success.

The moderating role of personal confidence in entrepreneurial tendencies

In the literature, attachment styles, sense of personal accomplishment, and entrepreneurial behaviors have generally been examined separately. While studies examining the effect of attachment styles on entrepreneurship are included in the literature, studies examining the effect of sense of personal accomplishment on entrepreneurship are limited [1]. Personal success generally means that an individual achieves the goals he/she has set, and personal confidence stands out as an important factor in this process [58]. Personal confidence, defined as an individual's belief in his/her inner strength, is an important factor in an individual's success. Individuals with high self-confidence tend to try and learn repeatedly, maintain their motivation even in the event of failure, and this learning process contributes to personal success in the long term [59]. Personal confidence, personal success, and entrepreneurial tendency are dynamics that complement and support each other. Self-efficacy theory, developed by Bandura (1997), suggests that individuals develop positive performance expectations when working on simple tasks and negative performance expectations when working on complex tasks, and that the presence of others triggers positive or negative expectations regarding performance evaluation [60]. Individuals' confidence in their abilities directly affects the probability of success. Personal confidence increases individuals' determination to achieve their goals, while strengthening personal success and entrepreneurial tendencies.

In this respect, personal confidence is not only an effective factor on individual success, but can also function as a moderating variable in the transformation of psychological tendencies resulting from an individual's attachment style into entrepreneurial behavior. In individuals with a secure attachment style in particular, high personal confidence creates a reinforcing effect in supporting entrepreneurial behavior; while in individuals with an anxious or avoidant attachment style, personal confidence can balance negative effects and facilitate the emergence of entrepreneurial tendencies [5–60].

The regulatory role of personal confidence in entrepreneurial tendencies is a multifaceted issue that has been addressed in various studies. The literature investigates how trust affects entrepreneurship through different lenses in many disciplines, including psychology, organization theory, sociology, economic theory, and business management. Emphasizing the importance of trust in entrepreneurial activities, Welter and Smallbone (2006) discuss the role of trust in the field of entrepreneurship both conceptually and empirically, and state that trust forms the basis of business behavior [61]. Discussing the interaction between entrepreneurial characteristics and overconfidence in their study, Goel and Karri (2006)

state that entrepreneurs who follow effective processes may tend to be overconfident, and that certain personality traits of the entrepreneur interact with effective logic, making the entrepreneur more prone to overconfidence [62]. Examining the impact of the personal characteristics of Generation Y on entrepreneurial tendencies, Konakay (2017) emphasizes the need to understand how demographic and personal characteristics shape entrepreneurial behavior, and reveals that trust, together with personal values, significantly affects entrepreneurial tendencies [63]. Welter (2012) critically examines the literature on trust and entrepreneurship and emphasizes that future studies on trust and entrepreneurship should acknowledge the bright and dark sides of trust, its duality, and the different contexts in which it occurs [64]. In these studies, which follow a cognitive and behavioral approach, Bi, Boh, and Christopoulos (2021) compare trust behaviors among entrepreneurs and non-entrepreneurs [65]. This literature review supports the conceptual model of our study by addressing the relationships between attachment styles, sense of personal accomplishment, and entrepreneurial tendencies. The research seeks to answer the questions “How do attachment styles affect entrepreneurial behavior?” and “What role does sense of personal accomplishment play in this interaction?” In this context, it is assumed that personal trust shapes entrepreneurial behavior by playing a moderating role in the interaction between sense of personal accomplishment and attachment styles. In addition, our study predicts that sense of personal accomplishment may increase entrepreneurial motivation in individuals with a secure attachment style and that this feeling may play a balancing role against possible negative effects in individuals with anxious and avoidant attachment styles.

Theoretical model

The main hypothesis of this study, which examines the relationship between attachment styles, sense of personal accomplishment and entrepreneurial behaviors among university students, suggests that secure attachment has a positive effect on entrepreneurial tendencies. Individuals with a secure attachment style have the self-confidence and It is suggested that since individuals have personal characteristics such as resilience, they exhibit these characteristics at a high level in entrepreneurial activities [18].

Self-efficacy theory, which suggests that individuals’ beliefs in themselves can increase motivation and performance The second hypothesis, formulated in the context of the theory [60], suggests that the sense of personal accomplishment plays a moderating role in the relationship between secure attachment and entrepreneurial behavior. In this case, individuals may exhibit entrepreneurial behaviors even if they have low levels of attachment security, when they have a strong sense of personal accomplishment.

The direct and moderating relationships are visually represented in Fig. 1. The data collected from 411 students studying at universities in Istanbul were obtained using a questionnaire method and the proposed hypotheses were tested by conducting multiple regression analysis with SPSS 25 software. The findings aim to provide a deeper understanding of how psychological factors influence entrepreneurial tendencies, especially in an educational setting.

Hypothesis H1: Secure Attachment level of students is positively associated with their entrepreneur behavior tendency.

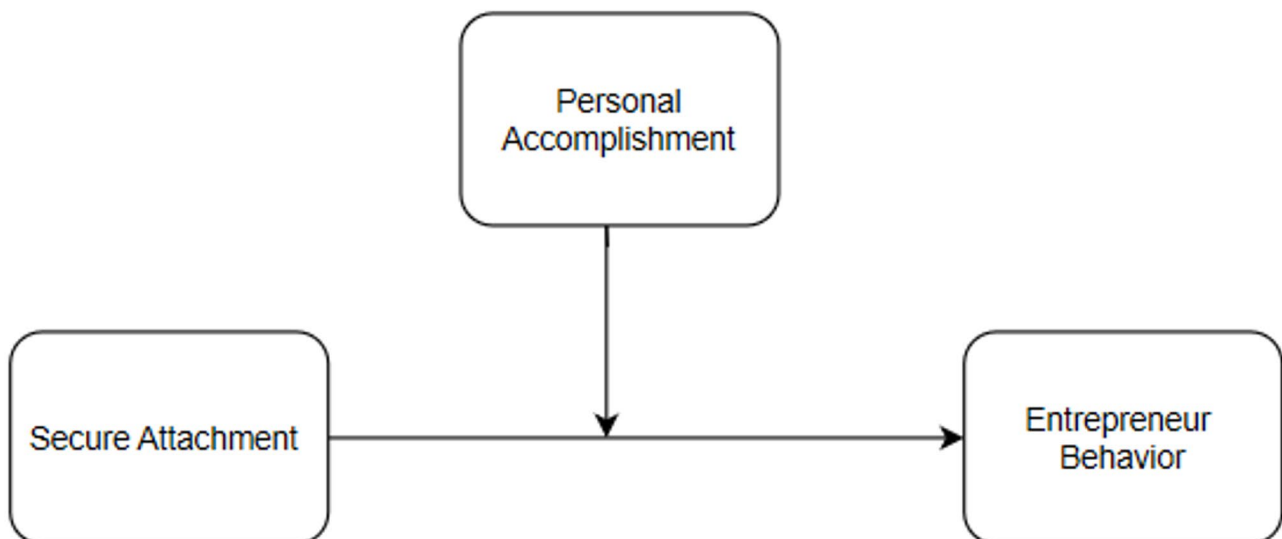


Fig. 1 Theoretical Model

H2 Feeling of personal accomplishment of students moderates the interaction between their secure attachment level and entrepreneur behavior tendency.

Sampling

Data were gathered from students attending in Turkish universities in İstanbul. The data is collected with convenience sampling method. Consent was obtained from all participants before filling out the questionnaire. All data were collected at three different period between February and June 2023 with 15 days lag to avoid common variance bias problem [66]. The online questionnaire link formed by Google Form were sent to participants’ personal e-mail or whatsapp account. In this study, data is collected from 411 participants.

The sample consisted of 308 women (74.9%) and 103 men (25.1%) with ages ranging from 20 to 25. It is seen that 209 (50.9%) of the participants describe their income level as moderate, 189 (46.0%) of them describe as good. It is also seen that 73% of the participants are working and approximately 70% of mother or father of the participants have a business.

The reason for choosing university students as participants in this study is that they are at the beginning of their careers and have the potential to gain new knowledge and skills in this process. Especially young individuals are still at the stage of developing personal characteristics and psychological factors that shape their entrepreneurial tendencies. Therefore, understanding the impact of factors such as attachment styles and sense

of personal accomplishment on entrepreneurial behavior can provide important information for the design of entrepreneurship education programs and support mechanisms.

As of 2024, 1,472,000 university students are studying in Istanbul. The data was collected from 411 students from 7 different universities in Istanbul, 3 public and 4 privates, using random sampling. When the sample number is evaluated based on a 95% confidence interval and a 5.0% margin of error, it is at least 384. At the end of this process, 411 data were gathered from the contributors. The data collection process was conducted in three periods between February 2023 and June 2023, each with 15-day intervals, and these intervals were planned to reduce covariate bias [66]. Participants were sent the link to the online survey created on Google Forms via personal email or WhatsApp message. Consent was obtained from all participants before completing the survey. Before starting the survey, participants were asked whether they would like to participate in the survey. Information about the participants is given in Table 1.

The sample consisted of 308 female (74.9%) and 103 male (25.1%) students between the ages of 20–25. The distribution of students according to their academic years was determined as first year (21.2%), second year (24.1%), third year (28.5%) and fourth year (26.2%). This classification enabled the analysis of possible differences in entrepreneurial behavior at different levels of academic progress.

Table 1 Demographical characteristics of the participants

		Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Gender	Female	308	74,9	74,9	74,9
	Male	103	25,1	25,1	100,0
	Total	411	100,0	100,0	
Marital Status	Married	54	13,1	13,1	13,1
	Single	357	86,9	86,9	100,0
	Total	411	100,0	100,0	
Age	20 or below	65	15,8	15,8	15,8
	21–22	180	43,8	43,8	59,6
	23–24	112	27,3	27,3	86,9
	25 or above	54	13,1	13,1	100,0
	Total	411	100,0	100,0	
Revenue Perception	Bad	13	3,2	3,2	3,2
	Modarete	209	50,9	50,9	54,0
	Good	189	46,0	46,0	100,0
	Total	411	100,0	100,0	
Working Condition	No	No	110	26,8	26,8
	Yes	Yes	301	73,2	73,2
	Total	411	100,0	100,0	
Business Oriented Families	No	121	29,4	29,4	29,4
	Yes	290	70,6	70,6	100,0
	Total	411	100,0	100,0	

To examine the impact of socioeconomic factors, participants were categorized according to their income level: 209 (50.9%) participants reported their income level as moderate and 189 (46.0%) as good. These income levels were reported by the respondents, with “moderate income” defined as sufficient to meet basic needs but not leaving a significant surplus, and “good income” defined as income levels that provide comfort beyond basic needs and allow for savings or discretionary spending. Instead of an absolute value, participants’ perceptions of income were taken into account in income information.

Furthermore, 73% of the respondents work part-time or full-time alongside their studies. In addition, around 70% of the students indicated that at least one parent owned a business. These categories were used in the analysis of the study to assess whether the entrepreneurial characteristics of working students or students from business-owning families differed. For example, whether working students have higher entrepreneurial traits compared to non-working students and how their parents’ entrepreneurial background influences their own entrepreneurial behavior were investigated.

This detailed demographic and socioeconomic segmentation was important for a more detailed understanding of the factors that may influence entrepreneurial behavior among university students in Istanbul.

Measures

The questionnaire was consisted of three different scales called as “Relationship Scale (RS)”, “Entrepreneur Behavior Scale (EBS)”, and “Personal Accomplishment Scale (PAS)”.

Relationship Scale was developed by Griffin and Bartholomew in 1994 and adapted to Turkish by Sümer and Güngör in 1999. It was developed as a continuous measure of adult attachment [67–68]. Although this scale is an old scale, it is still a frequently used scale in the literature. The RS contains 30 items and two main dimensions called as “Secure Attachment” and “Unsecure Attachment”. In this study, only the items which measure secure attachment level were considered. Participants assess the degree to which each statement aligns with their characteristic approach in close relationships using a 5-point scale, where options range from “not at all like me” to “very much like me”. Sample items are in the scale as “I find it easy to depend on other people”, “I find it easy to get emotionally close to others”. Fix index results for RS

is as $\chi^2/df = 3.812$; CFI=0.910; AGFI=0.896; GFI=0.902; RMSEA=0.058. Alpha for RS is as 0.762. These results show that the RS scale is adequately compatible and reliable.

Entrepreneur Behavior Scale (EBS) was developed by Akkoç, Çalışkan and Turunç in 2019 [69]. The scale was designed to determine the entrepreneurial behavior tendency in people. EBS contains 6 items. A 5-point Likert scale ranging from “strongly disagree” to “strongly agree” is used in the scale. Sample items are in the scale as “I’m excited about learning new skills”, “I create an environment of collaborative work groups and work teams for challenging and opportunity-filled work”. Fix index results for EBS is as $\chi^2/df = 3.732$; CFI=0.932; AGFI=0.902; GFI=0.912; RMSEA=0.055. Alpha for EBS is as 0.912. These results show that the EBS scale has good fit and reliability.

The Personal Accomplishment Scale (PAS) is a component of the Burnout Scale created by Maslach and Jackson in 1981 [13]. The scale consists of 8 items. Item examples include “I accomplish many worthwhile things in the job”, “In my job, I can handle emotional problems very calmly”. Each item was assessed by a five-point scale ranging from “totally disagree” to “totally agree”. Fix index results for PAS is as $\chi^2/df = 4.896$; CFI=0.911; AGFI=0.878; GFI=0.928; RMSEA=0.010. Alpha for PAS is as 0.875. These results show that the PAS scale is adequately compatible and reliable.

The questionnaire also asked questions to determine the socio-demographic characteristics of the participants.

Findings

Descriptive statistics and correlation analyses regarding the participants’ secure attachment, sense of personal accomplishment and entrepreneurial behavior levels are presented in Table 2. According to the mean values, the students’ secure attachment level was found to be at a medium level (Mean=3.31; SD=0.44), their sense of personal accomplishment was at a medium-high level (Mean=3.45; SD=0.47) and their entrepreneurial behavior level was found to be high (Mean=3.74; SD=0.62).

According to the correlation analysis results:

- There is a significant and positive relationship between secure attachment and sense of personal accomplishment ($r = 0.200, p < 0.01$),

Table 2 Descriptive statistics and correlation analysis results

	Mean	SD	SA	PA
Secure Attachment (SA)	3,31	0,44	1	
Personal Accomplishment (PA)	3,45	0,47	0.200**	1
Entrepreneurial Behavior (EB)	3,74	0,62	0.262**	0.482**

Note(s): SD= Standard deviation; ** $p < 0.01$

- A positive and significant relationship was found between secure attachment and entrepreneurial behavior ($r = 0.262, p < 0.01$),
- The relationship between sense of personal accomplishment and entrepreneurial behavior is stronger ($r = 0.482, p < 0.01$).

Entrepreneurial tendencies were compared according to some demographic variables:

- Entrepreneurial tendencies of students with employed parents are significantly higher than those without ($t = 3.64, p < 0.001$),
- No significant difference was found between employed and unemployed students ($t = 0.94, p > 0.05$),
- Entrepreneurial tendencies differ significantly according to grade level ($F = 2.92, p < 0.01$).

Hypothesis tests were conducted using multiple regression analysis. Gender, age, income perception, employment status and whether the family has a job were included as control variables.

- Hypothesis H1 was supported: Secure attachment has a significant and positive effect on entrepreneurial behavior ($\beta = 0.273, SE = 0.048, t = 5.68, p < 0.01$).
- Hypothesis H2 was supported: Personal sense of accomplishment significantly affects the relationship between secure attachment and entrepreneurial behavior ($\beta = -0.247, SE = 0.084, t = -2.94, p < 0.01$).

Detailed results of multiple regression analyses for hypotheses H1 and H2 are presented in Table 3.

Figure 2 illustrates that a sense of personal accomplishment has a particularly strong influence on students

with low secure attachment. Specifically, students who reported both low secure attachment and a low sense of personal accomplishment exhibited the lowest levels of entrepreneurial behavior. In contrast, those with low secure attachment but a high sense of personal accomplishment demonstrated a significantly higher entrepreneurial tendency, suggesting that a strong feeling of achievement can offset the negative effects of insecure attachment. On the other hand, students with high secure attachment but low personal accomplishment showed relatively lower entrepreneurial activity. The highest entrepreneurial tendency was observed among students who had both high secure attachment and a strong sense of personal accomplishment, indicating that the combination of emotional security and personal efficacy fosters the greatest entrepreneurial engagement.

Discussion

The result of this research proves that secure attachment style has a positive and significant effect on entrepreneurial behavior among students. The finding aligns with recent research emphasizing the growing relevance of attachment theory in the explanation of entrepreneurial intention. Segal et al. (2023) showed that students who have secure attachment styles are more inclined to exhibit higher entrepreneurial behavior, while Jansen et al. (2023) showed that secure attachment enables mentalization capacities, which simplifies dealing with psychological obstacles in the entrepreneurial process [2, 29]. Collectively, these results show not just that secure attachment entrenches interpersonal relationships, but also that it contributes to agility in risky and uncertain entrepreneurial environments. Thus, our study fills a theoretical gap by illustrating how attachment styles work in entrepreneurial settings.

Therefore, our research found that individuals with more secure attachment are more involved in

Table 3 CI moderating analysis

	Entrepreneurial Behavior Tendency			
	H1		H2	
	β	SE	β	SE
Constant	1.835**	0.047	-0.124	.407
Gender	.157	.120	.172	.106
Age	.043	.056	.060	.049
Revenue Perception	.222	.187	.109	.077
Working Condition	.035	.026	.039	.111
Family Oriented Business	.189	.106	.209	.093
Secure Attachment (SA)	0.273**	0.048	0.167**	0.047
Personal Accomplishment (PA)			1.269**	0.280
SA *PA			-0.247**	0.084
R ²	0.30		0.44	
F	6.996**		21.554**	

N = 411; ** Significant at the 0.01 level (2-tailed)

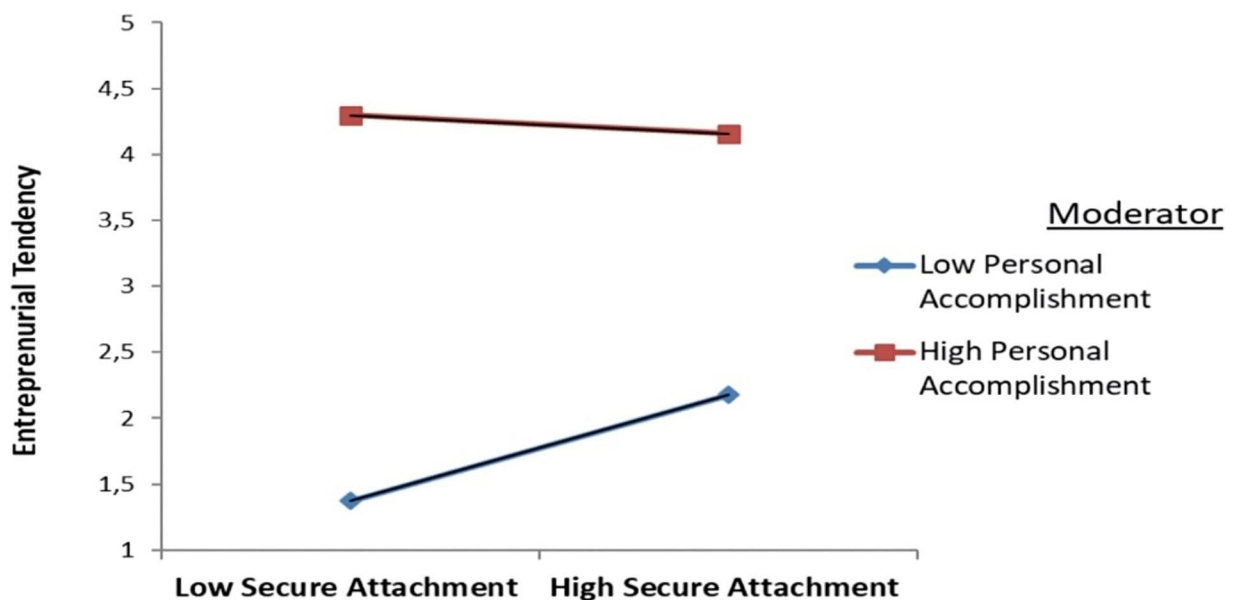


Fig. 2 The Interaction Between Secure Attachment and Entrepreneurial Behavior Tendency

entrepreneurial behavior. Mikulincer and Shaver (2019) highlighted that secure attachment supports emotional regulation and self-confidence, explaining the flexibility these individuals exhibit in risk-taking and uncertainty [12]. In domains like entrepreneurship that demand high levels of self-direction and persistence, emotional stability provided by secure attachment may ease proactive action. Therefore, our findings concretely demonstrate how secure attachment supports emotional resources in entrepreneurship.

The most novel contribution of this study lies in demonstrating that the sense of personal accomplishment moderates the relationship between secure attachment and entrepreneurial behavior. Regression analyses show that students with high personal accomplishment scores display high entrepreneurial behavior even when their secure attachment levels are low. This aligns with Bandura's (1997) self-efficacy theory, suggesting that belief in one's capacity enhances behavioral motivation and success orientation [60]. Similar to our findings, Xue et al. (2021) and Lima et al. (2020) highlighted the role of psychological capital in fostering entrepreneurship [15–52]. This study, therefore, contributes to the literature by introducing a new dimension in proving that individuals with high psychological resources are able to flourish in entrepreneurship despite their attachment levels.

Conversely, while high secure attachment and low personal achievement individuals show more limited entrepreneurial behavior. This finding implies that social security alone is not sufficient but that internal

motivation and self-belief are just as necessary. Goel and Karri's (2006) "overconfidence and achievement motivation" theory explains why highly motivated individuals are more likely to undertake entrepreneurial risk-taking [62]. It highlights the requirement to look beyond attachment types but to internal psychological resources also when trying to explain entrepreneurial behavior.

Our findings emphasize that emotional and cognitive flexibility, mediated through attachment and individual success, are key to entrepreneurial success. Such psychological traits might act as compensatory mechanisms when good relational security is not available. Especially in younger years, emotional resilience and intrinsic motivation are predictors of initiative-taking, persistence, and innovative behavior.

The study also points out environmental and social factors to be significant determinants of influencing entrepreneurial behavior. For instance, students with entrepreneurial parents demonstrate far greater entrepreneurial dispositions. Past research conducted by Jiang et al. (2017) and Kurniawan et al. (2019) validated the role of family relations and parental influence in entrepreneurial orientation [26–27]. Similarly, Lahti et al. (2019) showed that intensive emotional relationships with parents are influential in entrepreneurial identity construction [28]. Our findings statistically validate the role of family role models and entrepreneurship backgrounds.

Furthermore, Mohamad (2023) highlighted the positive impact of applied entrepreneurial projects on the development of entrepreneurial behavior and skills, which is

consistent with our findings [30]. Similarly, the institutional support systems emphasized by Lu et al. (2021) and Huang et al. (2023) have been shown to reinforce entrepreneurial behavior among students [38–39]. In this context, our study underscores the pivotal role of universities in serving as both psychological and social support systems, with institutional support in the university environment further enhancing students' entrepreneurial tendencies.

Contrary to this, insecure attachment types have been associated with chronic anxiety and intolerance of uncertainty, which can be destructive to entrepreneurial motivation, as evidenced in studies by Baratta et al. (2024) and Luo et al. (2024) [31–36]. Place attachment's influence on entrepreneurial decision, as documented by Lv et al. (2024), also implies emotional belonging plays a central role in this [35]. Our study contributes to the literature by arguing that attachment style is not only a unique psychological trait but can be viewed together with contextual and environmental influences.

The findings of this study determine that secure attachment and personal success have significant effects on students' entrepreneurial engagement. While attachment leads to emotional security, internal efficacy and motivation are responsible for amplifying or complementing the absence of relational security. Contextual variables, ranging from family history to institutional assistance, also affect entrepreneurial action. Implications are that a multidimensional framework involving psychological and social measures is required in order to explain and enable entrepreneurial development in youth populations.

Limitations

Some limitations of this study should be considered when interpreting the results. Firstly, the data were collected exclusively from university students, which limits the generalizability of the findings to other age groups and segments of society. Since entrepreneurial inclination can be influenced by factors such as age, occupational experience, and life stage, future studies using larger and more diverse samples could help overcome this limitation.

Secondly, the study employed a cross-sectional design, which makes it difficult to establish causal relationships between the variables. Longitudinal research is needed to determine the direction and changes in the relationship between attachment style, sense of personal accomplishment, and entrepreneurial behavior over time.

Thirdly, all data in the study were based on self-reports. Participants assessed their entrepreneurial tendencies, attachment styles, and sense of personal accomplishment themselves, which may have introduced social desirability bias and may not accurately reflect their actual behavioral tendencies.

Finally, other potential influencing variables were not controlled for in the research model. Individual characteristics such as self-efficacy, innovativeness, risk-taking propensity, and academic performance, as well as environmental factors like family structure or parental education level, were not included in the analysis. As a result, the explanatory power of the model remains limited to a specific psychological framework.

These limitations are important for contextualizing the research findings and for guiding future studies.

Future research directions

The findings of this study provide important clues in terms of revealing the effects of psychological variables on entrepreneurial behaviors. However, the following directions are suggested for future research in order to understand this relationship in more depth from different aspects:

First, considering the cross-sectional structure of this study, future longitudinal studies may provide the opportunity to evaluate the effects of attachment styles and personal accomplishment over time in a healthier way. Data collected especially in the early stages of students' careers may reveal the effects of these psychological variables on long-term entrepreneurial behaviors.

Second, the fact that the study was limited to university students constitutes a limitation in terms of sample diversity. Including individuals from different age groups, career stages and sectors in future studies will allow the effects of psychological variables on entrepreneurial behaviors to be tested more generally. Comparative studies, especially with new graduates, individuals who have received entrepreneurship training and active entrepreneurs, may be useful in this respect.

Third, it is suggested that new individual psychological variables be included in the research model. Factors such as self-efficacy, innovation, risk-taking tendency, proactive personality, and motivation types can affect entrepreneurial behaviors both directly and through mediator or moderator roles.

Fourth, studies conducted in different sectors and cultural contexts will increase the generalizability of the findings. For example, studies conducted in different business fields such as technology entrepreneurship, social entrepreneurship, or creative industries can reveal more clearly the sectoral differences in attachment styles and personal sense of accomplishment.

Fifth, increasing the variety in methods is important. Qualitative research methods (e.g. in-depth interviews, focus group discussions) can provide the opportunity to analyze in more detail how individuals' attachment experiences are reflected in their perceptions of entrepreneurship. In addition, experimental studies and behavioral data collection methods (e.g. observation, biometric

measurements) can reduce the social desirability bias encountered in self-report-based measurements.

Research to be developed in line with these suggestions will add theoretical depth to the entrepreneurship psychology literature while also having the potential to make practical contributions to entrepreneurship education, mentoring programs, and policy development processes.

Conclusion

This study has made a multidimensional contribution to the entrepreneurship psychology literature by examining the effect of university students' secure attachment style on entrepreneurial behaviors and the moderating role of the sense of personal accomplishment in this relationship. The study has developed an approach that focuses on the individual's early relational experiences and internal psychological resources by going beyond the cognitive and economic models that are frequently used to explain entrepreneurial behaviors. Empirical findings have shown that secure attachment positively and significantly affects entrepreneurial tendencies (H1), and that the sensation of personal success significantly strengthens this relationship (H2). From the findings collected, individuals with a secure attachment style exhibit high entrepreneurial behavior. This makes it clear that attachment theory is a determinant not only in interpersonal relationships but also in entrepreneurial activities of the individual, such as risk-taking, uncertainty management, and initiative-taking. The emotional stability and self-confidence that secure attachment provides enable individuals to adjust more comfortably to entrepreneurial processes. This finding is consistent with the findings of Zelekha et al. (2018) and Segal et al. (2023) and supports the literature on psychological determinants of entrepreneurial intention [1–2].

One of the original contributions of the study is that it shows that the sense of personal accomplishment plays a moderating role in the relationship between secure attachment and entrepreneurial behavior. Regression analyses revealed that individuals with a high sense of personal accomplishment can exhibit high entrepreneurial behavior even if their levels of secure attachment are low. This result is also consistent with Bandura's (1997) self-efficacy theory [60]. The individual's belief in his or her own capacity and intrinsic success motivation strengthen entrepreneurial behaviors and can compensate for the limitations of the perception of social security. This finding is parallel to studies in the psychological capital literature that reveal the effects of components such as self-efficacy, hope, resilience, and optimism on entrepreneurial tendencies [15].

The study also presented important findings on the effects of socioeconomic and demographic factors on entrepreneurial behaviors. The fact that students with

one or both parents who are employed show higher entrepreneurial tendencies indicates that early family role models create structural effects on entrepreneurial tendencies [26–27]. However, the increasing effect of institutional and psychological support provided at universities on entrepreneurial tendencies [38–39] reveals that higher education institutions should not only provide information but also encourage psychological empowerment. In light of all these findings, it is seen that entrepreneurial behaviors are shaped not only by economic opportunities or technical knowledge but also by the individual's psychological structure, early attachment experiences, internal perception of success, and social support systems. In this context, attachment styles, self-efficacy perception, and entrepreneurial behaviors, which are usually considered separately, were evaluated within the framework of an interactive theoretical model in this study. Thus, a holistic perspective on entrepreneurial potential was presented by analyzing individual (psychological), social (familial support), and institutional (university environment) factors together.

As a result, it is recommended that entrepreneurship education programs to be implemented in universities should be structured not only to provide technical skills but also to develop students' psychological resilience, self-efficacy perceptions and sense of personal accomplishment. This approach, which focuses on strengthening psychological capital, stands out as an important strategy both at academic and practical levels in terms of supporting entrepreneurial potential in a sustainable way. The findings of this study are expected to be guiding for educational program designers, entrepreneurship policy developers and student support units.

Abbreviations

RS	Relationship Scale
EBS	Entrepreneur Behavior Scale
PAS	Personal Accomplishment Scale
SA	Secure Attachment
PA	Personal Accomplishment
EB	Entrepreneurial Behavior
SD	Standard Deviation
CFI	Comparative Fit Index
AGFI	Adjusted Goodness of Fit Index
GFI	Goodness of Fit Index
RMSEA	Root Mean Square Error of Approximation

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Author contributions

G.K. designed the methodology and the research framework, conducted the data analysis, and prepared the original draft. T.U.K. contributed to the development of the conceptual framework and prepared the literature review section. All authors reviewed the manuscript, read the final version, and approved it for publication.

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Data availability

The raw data supporting the conclusions of this article will be made available by the authors without reservation.

Declarations**Ethics approval and consent of the participants**

This study was conducted in accordance with the principles outlined in the Declaration of Helsinki. Participants were provided with an information sheet describing the study procedures and were required to provide informed consent prior to participation. Ethical approval for this study was obtained from the Ethics Committee of Istanbul Sabahattin Zaim University (Reference No: 2025/02).

Consent for publication

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Competing interests

The authors declare no competing interests.

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