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Risk Propensity to Entrepreneurial Intention: The Parallel Mediating Roles of Entrepreneurial Self-Efficacy and Perceived Financial Literacy in a Sustainability Context

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Abstract

This study investigates how cognitive competence and belief-based mechanisms are associated with the entrepreneurial intentions of university students. A quantitative research method involving a questionnaire survey was used to collect data from 360 university students in Türkiye. A parallel mediation study model, reflecting the research hypotheses, was tested using the PROCESS Macro with bootstrapping. The findings indicate that risk propensity, entrepreneurial self-efficacy, and perceived financial literacy are all positively and significantly associated with entrepreneurial intention. Moreover, when tested as parallel mechanisms, both self-efficacy and perceived financial literacy mechanisms were found to partially mediate the relationship between risk propensity and entrepreneurial intention. This study measured general entrepreneurial intention rather than sustainable entrepreneurial intention as a distinct construct. Within this context, the findings align with the view that financial competence serves as an intangible resource supporting venture durability, treating economic viability as a precondition for pursuing socio-ecological objectives rather than a competing goal. As a cross-sectional research design was adopted, the results indicate associations rather than causal effects. Practical implications are discussed for universities and policymakers, who may consider pairing financial training with confidence-oriented pedagogy, including in sustainability-oriented entrepreneurship programs.

Keywords: entrepreneurial intention; risk propensity; entrepreneurial self-efficacy; perceived financial literacy; partial mediation; social cognitive theory; sustainable entrepreneurship

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1. Introduction

Entrepreneurship is emerging as a mechanism through which economies pursue long-term sustainable development, not purely as a source of job creation and innovation [1,2]. This approach places particular emphasis on younger generations, as their practiced ventures will shape the ability of business populations to reconcile social and environmental responsibilities with economic viability in the future [3]. Balli and Üstün [4] defined entrepreneurial intention as an individual's conscious commitment to establish a venture with a preparatory plan and their steps taken in that direction. Therefore, entrepreneurial intention is broadly considered an early indicator of subsequent venture creation. In this study, sustainability is considered not as a single outcome but as an interpretive condition; in other words, we measured general entrepreneurial intention rather than sustainable

venture performance or sustainable entrepreneurial intention. The relevance of sustainability rests on the idea that social and environmental initiatives can only continue only if the venture remains economically viable, meaning that economic viability does not compete with sustainability but rather serves as a prerequisite for it. Understanding which individual resources link personal dispositions to actionable entrepreneurial intentions is both academically and practically significant, as high market volatility raises the failure rate of new businesses in emerging economies [5,6]. An appropriate theoretical framework for examining entrepreneurial intention is Social Cognitive Theory (SCT) developed by Bandura [7,8], which offers a suitable perspective on how dispositional tendencies are related to entrepreneurial intention. According to SCT, human behavior is the result of dynamic interactions between behavioral, personal, and environmental factors. It places strong emphasis on self-efficacy, namely, individuals' conviction that they can plan and perform the actions necessary to achieve their objectives. Furthermore, the SCT maintains that mastery experience plays a major role in the development of both efficacy beliefs and relevant domain knowledge, as people gain competence and confidence by doing [8]. According to this agentic, experience-driven explanation, a dispositional characteristic such as risk propensity may not only relate to intention directly but also through the cognitive and psychological resources that, according to SCT, risk-tolerant individuals are more likely to possess. This study examines an individual's entrepreneurial self-efficacy regarding their ability to perform entrepreneurial tasks as well as their perceived financial literacy, defined as the subjective assessment of their household's financial knowledge and practices, reflecting the environment in which their financial competence is formed and practiced. This logic is also consistent with the perceived behavioral control component of Ajzen's [9] Theory of Planned Behavior, which refers individuals' beliefs in their capabilities to form intentions. However, the present study focuses on Social Cognitive Theory (SCT) rather than the full Theory of Planned Behavior (TPB), as attitudes and subjective norms are not within the scope of this research.

In this regard, risk-taking propensity can be considered an important antecedent of entrepreneurial intention [10]; however, it cannot be expected that risk-taking propensity alone will sufficiently predict entrepreneurial intention. In this process, an individual's belief in their ability to successfully perform entrepreneurial tasks (i.e., entrepreneurial self-efficacy) may play a bridging role. Studies have shown that students with high self-efficacy perceive risky situations more as opportunities and tend to have increased entrepreneurial intention and behavior [11,12]. Thus, considering the relationship between risk-taking propensity and entrepreneurial intention to be mediated through self-efficacy is theoretically meaningful.

Furthermore, financial literacy is playing an increasingly important role in the context of modern entrepreneurship and decision-making. Being able to make informed financial decisions and having sufficient knowledge of capital management and financial risk analysis are advantageous in the entrepreneurial process; for example, previous studies have found that financial literacy is positively related to entrepreneurial intention [13–15]. Evidence from small- and medium-sized enterprises, however, indicates that the relevance of financial literacy is not limited to the formation stage, but extends to longer-term firm performance [16]. Specifically in emerging economies, financial planning capacity has been shown to support the development of sustainable businesses that combine environmental and social objectives with economic performance [17].

In Türkiye, studies involving university students have revealed that, although young people show entrepreneurial potential, their personal resources and financial knowledge significantly influence whether this potential can be transformed from intention into action [18,19]. In this context, it is necessary to develop and test models that jointly address risk-taking propensity, self-efficacy, and perceived financial literacy variables. The pur-

pose of this study is therefore to investigate the mechanism through which an individual's risk propensity is related to their entrepreneurial intention by using the SCT framework and focusing on belief-based and cognitive mediators. More specifically, this study conceptualizes risk propensity as a distal antecedent and entrepreneurial self-efficacy and perceived financial literacy (PFL) as two parallel mediating variables. In particular, perceived financial literacy plays a critical role in managing financial uncertainty as a cognitive resource for competence, while self-efficacy represents an individual's psychological belief in their capabilities in creating a venture. By integrating these constructs, this research offers an explanation of how risk propensity is associated with entrepreneurial intention among university students in Türkiye and explores potential implications for sustainability-oriented entrepreneurship.

2. Theoretical Background

2.1. A Social Cognitive Perspective on Entrepreneurial Intention

Social Cognitive Theory [7] explains human behavior over a triadic loop in which personal factors, environmental conditions, and behavioral actions collectively influence one another. It treats individuals as dynamic agents that set goals, plan ahead, and control their actions in accordance with their perceived capabilities. Social Cognitive Theory positions self-efficacy as a central component and defines the main source as active, hands-on experience leading to the accumulation of repeated successes in challenging tasks [8]. The extensive body of research conducted on SCT includes various entrepreneurial studies in which entrepreneurial self-efficacy has been shown to distinguish those who pursue starting a business from those who do not [20].

Two elements of the Social Cognitive Theory model make it particularly suitable for the presented research model. The first is that it also uses dispositional traits, such as risk propensity, as inputs rather than only accepting direct determinants of behavioral intention; these traits alters the situations of individuals' select and experiences they gain, which subsequently built-up proximal beliefs and competencies that related to intention [21]. Secondly, knowledge acquisition is considered to be experience-driven, just as mastery experience builds belief in efficacy and domain knowledge improves through active engagement [8]. This reasoning is represented in the financial literacy literature, where "learning by doing" through financial activity involvement has been linked with higher literacy [22,23]. Building on this perspective, risk-tolerant individuals may be more willing to enter uncertain financial and entrepreneurial situations and, therefore, have more opportunities to gain both confidence (entrepreneurial self-efficacy) and perceived financial competence (perceived financial literacy), both of which are associated with higher entrepreneurial intention. This experience-based account becomes particularly relevant when entrepreneurial activity is focused on sustainable outcomes, as these ventures are characterized by layered forms of uncertainty that individuals must navigate through active practice rather than avoidance [2,24].

The model tested in this study represents a dual pathway in the social cognitive framework, where risk propensity sits at the distal end and acts as a dispositional starting point; notably, we do not expect these mechanisms to fully explain the relationship between risk propensity and entrepreneurial intention. Similar partially mediated model findings have demonstrated consistent direct relationships between risk propensity and entrepreneurial intention [21,25]. The inclusion of both psychological and cognitive competence in a single model is motivated by the argument put forward in prior work that the ability to build a durable business is not limited to psychological readiness to operate under uncertainty, but also requires financial competence for organizational survival [26]. As the research design

used in this study is cross-sectional, the proposed directional relationships are grounded in theory but do not establish causal relations.

2.2. Risk Propensity and Entrepreneurial Intention

Entrepreneurial intention is defined as an individual's conscious decision and determination to establish their own business in the near- or medium-term [27]. Individuals with a high level of entrepreneurial intention are more likely to engage in behaviors such as opportunity scanning, resource gathering, and venture initiation [12,28]. Previous studies, particularly those conducted among university students, have indicated that entrepreneurial intention is shaped by individual cognitive evaluations (e.g., opportunity perception, perceived control) [29], psychological traits (e.g., self-confidence, tolerance for ambiguity) [30], and perceptions related to financial concerns [31]. These studies have all concluded that entrepreneurial intention is no longer merely a matter of "desire," but can be conceptualized as a rational career alternative under conditions of risk and uncertainty.

In this regard, risk propensity can be considered a dispositional tendency to take risks when making decisions under conditions of uncertainty [10]. Recent findings have indicated that university students with high-risk propensity show higher entrepreneurial intentions since they perceive entrepreneurship as more manageable and feasible to pursue [32–34]. Moreover, recent evidence suggests that risk propensity is related to entrepreneurial intention not only directly but also indirectly through self-efficacy, with psychological mechanisms such as an individual's self-confidence leading to risk-taking tendencies toward entrepreneurial action [35]. Developed within the context of university students in Türkiye, the present model proposes that the association between risk propensity and entrepreneurial intention operates partly through two mechanisms.

2.3. Entrepreneurial Self-Efficacy and Its Mediating Role

Entrepreneurial self-efficacy (ESE) refers to an individual's belief in their ability to execute the courses of action required to produce given attainments and is regarded as a central mechanism of human agency that reflects whether individuals determine themselves as being capable when organizing and executing entrepreneurial tasks [8,20]. A similar notion is captured in the perceived behavioral control component of the Theory of Planned Behavior [9], which associates belief capacity with intention formation. Empirical studies have consistently supported this proposition, demonstrating that higher levels of ESE are linked with greater entrepreneurial intention among university students and potential founders [21,36,37].

In addition to its direct association with entrepreneurial intention, ESE also serves as a fundamental psychological mechanism that explains how other personality traits influence entrepreneurial intention [28]. More recent studies have confirmed that greater levels of self-efficacy are associated with tolerance for ambiguity and opportunity recognition across various contexts [38–40], and with the resilience and persistence required to sustain entrepreneurial action [41,42].

An early theoretical work presented by Gist and Mitchell [43] defined a self-efficacy framework according to individuals' risk propensity judgments and psychological states when undertaking a venture that generates anxiety and excitement. Consequently, risk-prone individuals exhibit higher opportunity recognition and stronger entrepreneurial intention [44]. The previous literature has identified that entrepreneurial self-efficacy acts as a mediator between risk propensity and entrepreneurial intention; hence, risk-tolerant individuals are more likely to become entrepreneurs as higher ESE is associated with greater confidence in executing entrepreneurial tasks, and this confidence is associated with

stronger intention [21]. Entrepreneurial self-efficacy is therefore considered a mediating mechanism in the association between risk propensity and entrepreneurial intention.

2.4. Perceived Financial Literacy and Its Mediating Role

Financial literacy can be identified as the ability to process economic information and make rational decisions about saving, borrowing, and investment [45]. Resource-based theory states that financial literacy is an intangible asset for entrepreneurial ventures, as higher financial literacy among young people could encourage entrepreneurial activities through characteristics such as self-employment motivation and autonomy [46,47]. The entrepreneurship literature considers financial literacy as not only a prerequisite for short-term firm creation, but also a foundational pillar for establishing a sustainable business that is sufficient for long-term survival and economic viability in uncertain economic environments [16,26]. Recent studies among university students have confirmed the existence of a direct positive relationship between financial literacy and entrepreneurial intention [14,15]. Individuals with higher financial literacy exhibit greater ability in cash flow, debt, and capital management. These are all skills that are essential in sustainable and socially responsible ventures as the majority of capital is allocated and payback times are typically longer [48]. Thus, financially literate entrepreneurs can make appropriate decisions when working with risk-bearing financial products, such as loan applications or capital investments, without compromising their economic stability [46,49]. However, objective financial literacy alone is often insufficient for venture creation, as how individuals perceive their financial competence also shapes their choices [7]. Therefore, this study focuses on perceived financial literacy, a subjective assessment, rather than an objective test of financial competence. The works reviewed above address financial literacy more broadly and are used here to provide background on a perceived construct.

The development of financial literacy cannot be evaluated independently of an individual's social environment. The financial socialization approach posits that individuals' financial knowledge, attitudes, and behaviors are shaped through social learning sources such as family, school, peer groups, and media [50]. Among these factors, parents remain the primary source of financial learning; for example, it has been determined that the impact of parental influence on first-year university students is greater than the combined effect of work experience and high school financial education [51]. In this context, household financial literacy and individual financial literacy are therefore closely intertwined, and the financial knowledge, skills, attitudes, and behaviors of an individual's household can be considered important components of their financial socialization process [50,52]. Students who see their parents as financial role models are better able to control their financial behavior, suggesting that this influence extends to the self-assessed aspect of financial competence. In Türkiye, financial literacy among university students has been observed to vary based on family income, parental education, and previous entrepreneurial presence in the family [53]. As many first-year university students are not financially independent, the household environment continues to remain a learning environment for financial decision-making [51]. Accordingly, this study conceptualizes perceived financial literacy as a subjective assessment of household financial knowledge and practices based on individuals' self-assessment of their financial competence rather than objectively tested knowledge.

In economies such as Türkiye, one of the key considerations shaping students' entrepreneurial decisions is the question: "Can I afford it financially?" In this context, financial literacy is not only a matter of technical knowledge but also reflects a sense of perceived financial autonomy and control [17,45]. Recent findings have indicated that students with higher levels of financial literacy tend to view the decision to start a business as more rational and attainable, as they have a better understanding of how to manage financial risks,

secure capital, manage it effectively, and reduce cash flow pressures [54]. Furthermore, as financial products are gradually evolving into more sophisticated and risk-oriented forms, engaging with modern financial systems requires greater risk propensity [55–57]. In the context of changing socio-economic frameworks and economic uncertainty, individuals are increasingly exposed to higher financial risks, creating the need for greater financial understanding in order to align with strategic individual risk objectives [58–60]. In this context, perceived financial literacy is expected to function as a key cognitive resource that is associated with stronger entrepreneurial intentions.

From Risk Propensity to Perceived Financial Literacy: A Learning-by-Doing Perspective

We acknowledge that the most common direction of the relationship in the existing literature is from financial literacy to risk attitudes, with financial knowledge usually represented as an antecedent that affects people's financial behavior and tendency to take risks [61]. However, this directional relationship is mostly presented in the context of investment and consumer finance decisions, and the reverse path has received significantly less attention. Notably, Atkinson and Messy [58] found that risk-tolerant individuals presented higher financial literacy scores in various countries and identified the direction of this relationship as a topic for future research. Social Cognitive Theory's concept of mastery experience offers a theoretical basis for the reverse pathway, as it posits that competence and confidence develop through hands-on engagement with challenging tasks [8]. This directional pathway is consistent with prior empirical findings demonstrating that individuals acquire a significant portion of their financial knowledge through direct, repetitive exposure to financial experience rather than pure formal education [62,63]. Research conducted on individual-level investors has shown that their trading performance significantly improved with their transaction experience [64]. Experience in investment shapes how individuals treat financial information [65], and research on such experiential learning has indicated that the use of complex financial tools enhances the understanding of financial principles, as they are applied in practice rather than merely having theoretical knowledge of them [22,23].

From a learning-by-doing perspective, risk propensity acts as a distal correlate of perceived financial literacy, as individuals with high risk propensity may be more likely to enter uncertain financial environments where hands-on engagement with complex financial decisions is expected to be accompanied by higher perceived financial literacy [8,22]. One of the environments where such engagement takes place is in the household, whereby financial learning in the family occurs not only through observation but also hands-on practice (e.g., managing an allowance) [50]. Furthermore, university students' financial perceptions of their parents are associated with their own financial attitudes and behaviors [52]. Financial risk tolerance among university students is positively associated with both their objective financial literacy and self-assessed investing knowledge, and discussing financial matters at home is positively associated with self-assessment of one's own financial ability [66]. According to SCT's triadic logic, risk propensity is a personal factor, while knowledge of household financial practices is part of the environment in which students initially participate in financial decision-making. Students who are more risk-tolerant may be more willing to participate in these decisions; therefore, their perceived level of financial literacy is likely to reflect both their own experience and their household financial environment. The pathway proposed from risk propensity to perceived financial literacy is therefore a theoretically grounded rather than empirically established. The opposite direction, in which perceived financial literacy shapes risk attitudes [61], remains equally plausible, and the cross-sectional data used in this study cannot distinguish direction of this relationship. Individuals with perceived financial competence may feel more proficient when it comes

to launching and managing a venture, which is expected to be associated with greater entrepreneurial intention.

2.5. Sustainability Context

The model examined in this study involves four constructs: risk propensity, entrepreneurial self-efficacy, perceived financial literacy, and entrepreneurial intention. Associations between these constructs are the only focus of the hypotheses. This section establishes the theoretical basis for the interpretation of these associations in the context of sustainability.

The purpose of sustainable entrepreneurship is to establish a balance between social–ecological responsibility and economic performance [2,67]. According to earlier studies, this combination increases the demands placed on founders. In addition to commercial uncertainty, founders now face ecological, ethical, and regulatory uncertainties, as sustainability-oriented ventures frequently involve longer payback periods and a wider range of stakeholder claims [48,68,69]. As a result, a willingness to act under uncertainty and individual's confidence in their abilities are considered relevant in this context [70]. Besides solving ethical or environmental issues, such ventures must also remain economically viable [67], and founders who pursue these objectives tend to report greater financial barriers compared to other founders [71]. As we treat economic viability as a prerequisite for pursuing social and environmental objectives, perceived financial literacy is relevant alongside self-efficacy.

This reasoning is not a tested component of the model but, rather, a theoretical bridge. Intentions specifically directed into sustainable ventures are linked to sustainability attitudes [72] and are not measured here. Therefore, the findings indicate general entrepreneurial intention, and any implications for sustainable entrepreneurship are conjectures based on the reviewed literature.

To summarize the social cognitive reasoning developed above, we propose the following hypotheses for this study:

H1: *Risk propensity is positively associated with entrepreneurial intention.*

H2a: *Entrepreneurial self-efficacy is positively associated with entrepreneurial intention.*

H2b: *Entrepreneurial self-efficacy mediates the relationship between risk propensity and entrepreneurial intention.*

H3a: *Perceived financial literacy is positively associated with entrepreneurial intention.*

H3b: *Perceived financial literacy mediates the relationship between risk propensity and entrepreneurial intention.*

2.6. Present Research

While the literature on entrepreneurial intention, risk propensity, and entrepreneurial self-efficacy is growing, several gaps remain underexplored. First, existing research has largely focused on entrepreneurial intention through direct relationships with psychological factors such as self-efficacy; however, only a limited number of studies have examined perceived financial literacy as an additional mechanism that links risk propensity to entrepreneurial intention. Most studies on the financial characteristics of university students have focused on how family financial socialization shapes students' financial attitudes and behaviors [51,52]. In contrast, the current model positions perceived financial literacy as a mechanism linking risk propensity and entrepreneurial intention within a single framework.

Second, much of the literature has treated financial knowledge as an antecedent of risk attitudes [61] while giving little attention to the reverse relationship, from risk propensity to perceived financial literacy, particularly from an experiential learning perspective.

Furthermore, a limited number of studies have considered these individual-level mechanisms in sustainability-oriented contexts, particularly in emerging markets where venture survival is highly dependent on financial competence. By addressing these gaps, researchers can better understand how perceived cognitive and psychological resources relate to entrepreneurial intentions.

The conceptual model of this research is illustrated in Figure 1.

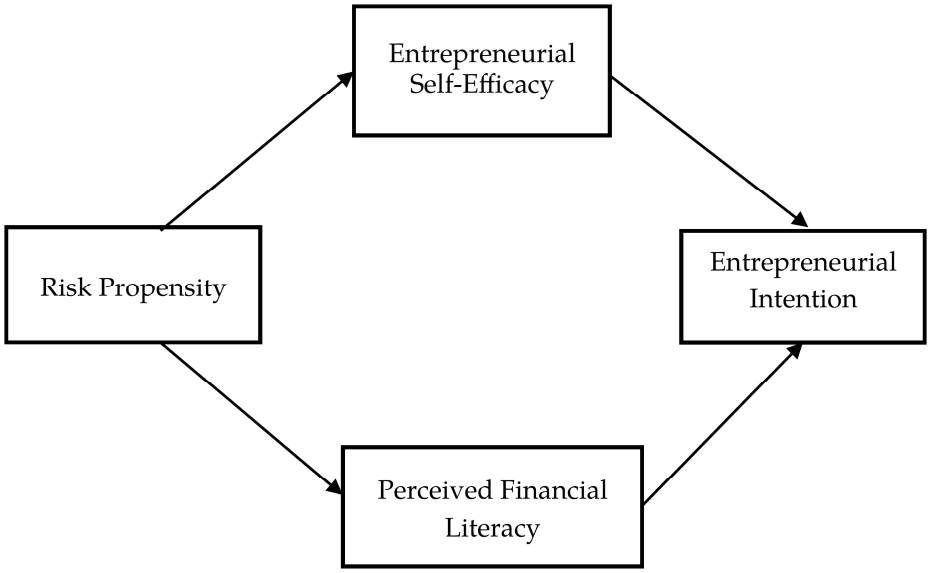


Figure 1. Research model.

3. Method

3.1. Participants and Procedure

This study was conducted among university students enrolled at 12 public and private universities across Türkiye, with participating institutions predominantly located in Ankara and Istanbul. A non-probability convenience sampling approach was employed to recruit participants based on their accessibility and willingness to participate. At each participating university, one individual was assigned to coordinate the survey administration and received training on the data collection procedures to promote consistency in questionnaire administration.

The inclusion criteria required participants to be currently enrolled at a university and to participate voluntarily. Before completing the questionnaire, respondents were informed about the purpose of the research and provided written informed consent. They were assured that their responses would remain anonymous, that the collected information would be used exclusively for research purposes, and that they could withdraw from the study at any time without consequences.

The questionnaire was administered in Turkish. To support linguistic clarity and conceptual equivalence between the original English-language measurement instruments and their Turkish versions, the translation process involved two academics whose native language was English. Particular attention was given to preserving the semantic meaning and conceptual consistency of the original measurement items. The translation process also included a back-translation procedure, in which the Turkish-language items were translated

back into English and compared with the original instruments to identify potential linguistic or conceptual discrepancies.

Prior to the main data collection phase, the Turkish version of the questionnaire was subjected to a preliminary pilot assessment involving 15 university students. The purpose of this assessment was to evaluate the clarity, comprehensibility, and contextual appropriateness of the translated measurement items. The participants' feedback was utilized to assess the linguistic suitability of the questionnaire for the target population. This preliminary assessment was intended to identify potential ambiguities and support the comprehensibility of the questionnaire before its administration in the main study.

The final questionnaire consisted of demographic questions followed by measurement items assessing risk propensity, entrepreneurial self-efficacy, perceived financial literacy, and entrepreneurial intention. A total of 378 questionnaires were collected from the participating universities. Following the data-screening process, 18 questionnaires were excluded, resulting in a final analytical sample of 360 valid responses, representing approximately 95.2% of the initially collected questionnaires.

Although the inclusion of students from multiple public and private universities provided institutional diversity, the use of convenience sampling and the geographical concentration of participating institutions (particularly in Ankara and Istanbul) may limit the representativeness of the sample. Accordingly, the findings should be interpreted with caution when generalizing to the broader university student population in Türkiye. To ensure data integrity and minimize the impact of missing responses on the analyses, questionnaires with more than 50% unanswered items were excluded from this study. For questionnaires with sporadic missing items (falling well below the 50% threshold), mean imputation was applied for the respective scales. To ensure that the final sample size provided sufficient reliability and statistical adequacy for testing the proposed mediation models via the PROCESS macro, the sample size was evaluated in accordance with established methodological criteria. In the literature, Comrey and Lee [73] classified sample sizes as follows: 100 = poor, 200 = fair, 300 = good, 500 = very good, and 1000 or more = excellent. Furthermore, following established rules of thumb for multiple regression and path analyses [74], such as the widely accepted >50 + 8 m formula (where m is the number of predictors), our models comfortably satisfy the required data-to-parameter ratios. Accordingly, our final sample of N = 360 exceeds the "good" threshold of 300 participants identified in [73] and meets the requirements for regression, supporting its use in the multivariate mediation analyses conducted in this study. Table 1 summarizes the demographic information of the sample.

Table 1. Demographic characteristics of the participants.

	Variables	**Number (*n*)**	**Percentage (%)**
Sex	Male	211	58.6
	Female	146	40.6
	Other	3	0.8
Does your father own a company or run his own business?	Yes	74	20.6
	No	283	78.6
	No response	3	0.8
Does your mother own a company or run her own business?	Yes	48	13.3
	No	311	86.4
	No response	1	0.3
Have you developed a business plan during your time at university?	Yes	174	48.3
	No	183	50.9
	No response	3	0.8

3.2. Measures

3.2.1. Risk Propensity

The participants' risk propensity tendencies were measured using the scale developed in [75], which consists of 8 items rated on a 5-point Likert scale ranging from 1 to 5. Sample items include "Taking risks makes life more fun" and "My friends would say that I'm a risk taker." The internal consistency reliability (Cronbach's alpha) for the risk propensity scale was calculated to be 0.891.

3.2.2. Entrepreneurial Self-Efficacy

The participants' entrepreneurial self-efficacy was assessed using the scale developed in [76], which consists of 4 items rated on a 5-point Likert scale. Sample items include "I feel able to discover new ways to improve existing products or services" and "I feel able to create products or services for unmet consumer needs." The internal consistency reliability (Cronbach's alpha) for the entrepreneurial self-efficacy scale was determined to be 0.792.

3.2.3. Perceived Financial Literacy

The participants' perceived financial literacy levels were measured using the scale developed in [77], which includes 20 items rated on a 5-point Likert scale. The scale assesses household-level financial literacy in a developing-country context, where sample items include "In this household, members are knowledgeable about financial risks" and "In this household, members always look to save money." The construct is interpreted as perceived financial literacy because respondents rate the financial practices and knowledge of the household; therefore, their responses reflect an assessment of the financial competence available in their own socialization environment, rather than tested knowledge. The internal consistency reliability (Cronbach's alpha) for the scale was calculated as 0.884.

3.2.4. Entrepreneurial Intention

The participants' entrepreneurial intention was assessed using the scale developed by [78], which consists of 3 items rated on a 7-point Likert scale. Sample items include "I am planning to start my own business in order to earn a lot of money" and "I have a vocation for entrepreneurship." The internal consistency reliability (Cronbach's alpha) for the entrepreneurial intention scale was calculated as 0.813.

3.2.5. Control Variables

Recent studies have indicated that entrepreneurial intention can be influenced by demographic background and prior experiential exposure [79,80]. Therefore, sex, parents' business ownership, and business plan preparation experience were included as control variables to isolate the net effects of the core structural paths. Sex was coded as a dummy variable (0 = male, 1 = female; with 'other' categories treated as missing or controlled via dummy coding). Fathers' and mother's company/business ownership were coded dichotomously (0 = no, 1 = yes). Similarly, having developed a business plan at university was coded as a binary variable (0 = no, 1 = yes).

3.3. Data Analysis

This study adopted a cross-sectional design. Statistical analyses were conducted using IBM SPSS 23.0 and AMOS 27.0 software. First, descriptive statistics were calculated. Then, to examine the relationships between variables, Pearson correlation coefficients were computed. The effect sizes of the correlations were interpreted according to the following thresholds suggested in [81]: small (0.10–0.30), medium (0.30–0.50), and large (>0.50). Finally, the research hypotheses were tested using the PROCESS Macro v3.4 developed in [82]. The

analyses were performed with 95% confidence intervals (CIs), employing 5000 bootstrap resamples; unstandardized coefficients (B) and standard errors (SE) are reported.

To address the potential common method bias (CMB) inherent to cross-sectional survey designs [83,84], both procedural and statistical remedies were applied. Procedurally, participant anonymity was guaranteed, item order was randomized, survey length was kept concise to prevent cognitive fatigue, and respondents were instructed that there were no right or wrong answers. Statistically, Harman's single-factor test showed that no single factor accounted for over 50% of the variance, and inter-construct correlations remained well below the 0.90 threshold [85]. Additionally, a full collinearity test using variance inflation factors (VIF), regressing all independent, mediating, and control variables against entrepreneurial intention, yielded VIF values below the threshold of 3.3. Although these diagnostics suggest that CMB and multicollinearity do not severely threaten the validity of the findings, as the data are self-reported and cross-sectional in nature, CMB cannot be entirely ruled out.

4. Results

4.1. Reliability and Validity Analyses

The reliability of the constructs was evaluated using Cronbach's alpha coefficient and composite reliability (CR) values, and convergent and discriminant validity were used as further criteria when evaluating their validity. The findings are presented in Table 2.

Table 2. Reliability analysis results.

Variables	Factor Loadings	AVE	α	CR
Risk Propensity		0.528	0.891	0.899
RP-1	0.716			
RP-2	0.746			
RP-3	0.624			
RP-4	0.816			
RP-5	0.732			
RP-6	0.739			
RP-7	0.725			
RP-8	0.704			
Entrepreneurial Self-Efficacy		0.600	0.792	0.856
ESE-1	0.782			
ESE-2	0.884			
ESE-3	0.695			
ESE-4	0.724			
Perceived Financial Literacy		0.587	0.884	0.965
PFL-1	0.608			
PFL-2	0.831			
PFL-3	0.843			
PFL-4	0.661			
PFL-5	0.822			
PFL-6	0.625			
PFL-7	0.639			
PFL-8	0.854			
PFL-9	0.851			
PFL-10	0.770			
PFL-11	0.785			
PFL-12	0.801			
PFL-13	0.815			
PFL-14	0.683			

Table 2. *Cont.*

Variables	Factor Loadings	AVE	α	CR
PFL-15	0.701			
PFL-16	0.863			
PFL-17	0.723			
PFL-18	0.753			
PFL-19	0.862			
PFL-20	0.742			
Entrepreneurial Intention		0.604	0.813	0.820
EI-1	0.725			
EI-2	0.829			
EI-3	0.774			

The Cronbach's alpha values are 0.891, 0.792, 0.884, and 0.813, respectively, while the composite reliability values are 0.899, 0.856, 0.965, and 0.820, respectively; all of these values are above 0.70, thus indicating acceptable reliability [86]. Furthermore, the high factor loadings of all items indicate their high representational power [87].

Fornell and Larcker [88] stated that Average Variance Extracted (AVE) values must exceed the threshold of 0.5 to confirm convergent validity. From Table 2, it can be seen that all AVE values exceed 0.50, indicating that the constructs possess convergent validity. Discriminant validity was assessed by calculating Heterotrait–Monotrait (HTMT) ratios in addition to the Fornell–Larcker criterion. The findings are presented in Table 3.

Table 3. Discriminant validity analysis results.

Variables	1	2	3	4
Risk Propensity	**0.727**	0.497	0.448	0.528
Entrepreneurial Self-Efficacy	0.429	**0.775**	0.687	0.553
Perceived Financial Literacy	0.393	0.607	**0.766**	0.629
Entrepreneurial Intention	0.468	0.464	0.540	**0.777**

Note: Diagonal values represent the square root of the average variance extracted (AVE). The values below the diagonal represent the correlations between variables, while values above the diagonal represent HTMT ratios.

According to [88], the square root of the AVE must be greater than the correlations with other constructs in order to establish discriminant validity; additionally, [89] indicated that HTMT ratio values should not be greater than 0.85. As shown in Table 3, both requirements are satisfied, thus indicating that the constructs have discriminant validity. To evaluate the measurement model, Confirmatory Factor Analysis (CFA) was conducted using AMOS 27.0. The measurement model demonstrated an acceptable fit to the data ($\chi^2 = 1283.400$, df = 558, $\chi^2/df = 2.300$, CFI = 0.938, TLI = 0.929, NFI = 0.915, RMSEA = 0.060, and SRMR = 0.045). The individual standardized factor loadings ranged from 0.608 to 0.884, all exceeding the recommended threshold of 0.50 ($p < 0.001$).

4.2. Hypothesis Testing

The mediation analysis examined the effect of risk propensity on entrepreneurial intention, considering the parallel mediating effects of entrepreneurial self-efficacy and perceived financial literacy (Figure 2 and Table 4).

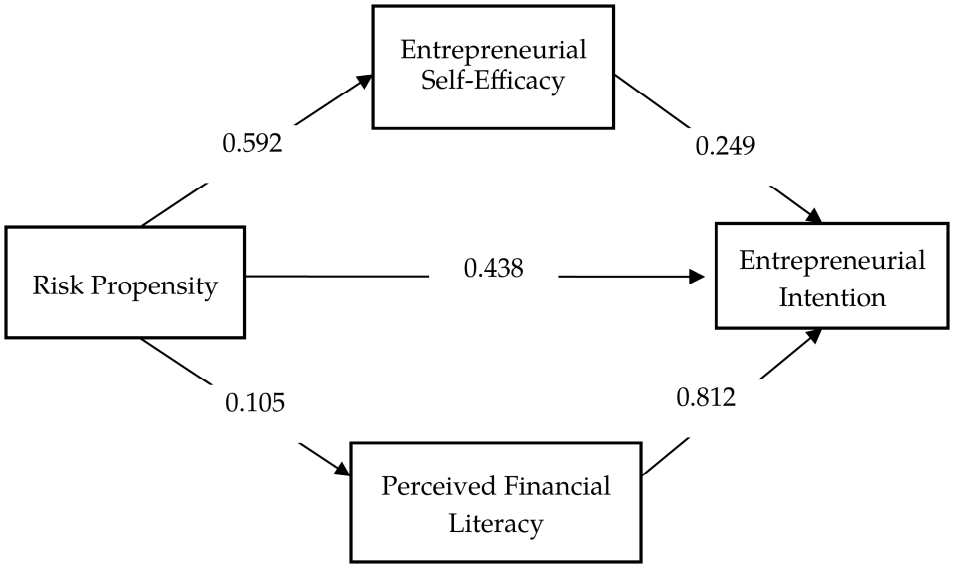


Figure 2. Research Model with Path Coefficients.

Table 4. Hypothesis testing results.

Path	B	SE	t	*p*	95%CI	
					LLCI	ULCI
Constant	−0.087	0.435	−0.200	0.841	−0.942	0.768
Sex	−0.175	0.089	−1.966	0.049	−0.351	−0.001
Father's company/business?	−0.034	0.112	−0.306	0.759	−0.254	0.185
Mother's company/ business?	0.084	0.138	0.604	0.546	−0.189	0.358
Business Plan	−0.109	0.088	−1.242	0.215	−0.281	0.064
Direct Effects						
RP –> PFL	0.105	0.031	3.387	<0.001	0.046	0.166
RP –> ESE	0.592	0.090	6.572	<0.001	0.415	0.762
RP –> EI	0.438	0.075	5.844	<0.001	0.291	0.586
ESE–> EI	0.249	0.101	2.462	0.014	0.051	0.448
PFL –> EI	0.812	0.128	6.345	<0.001	0.560	1.063
Indirect Effects						
	Effect	**BootSE**	**BootLLCI**		**BootULCI**	
RP –> ESE–> EI	0.147	0.040	0.078		0.232	
RP –> PFL–> EI	0.085	0.041	0.005		0.165	

RP: risk propensity; PFL: perceived financial literacy; ESE: entrepreneurial self-efficacy; EI: entrepreneurial intention.

The findings indicate that risk propensity has significant and positive direct effects on perceived financial literacy (B = 0.105; SE = 0.031; 95% CI = [0.046, 0.166]), entrepreneurial self-efficacy (B = 0.592; SE = 0.090; 95% CI = [0.415, 0.762]), and entrepreneurial intention (B = 0.438; SE = 0.075; 95% CI = [0.291, 0.586]). Moreover, both entrepreneurial self-efficacy (B = 0.249; SE = 0.101; 95% CI = [0.051, 0.448]) and perceived financial literacy (B = 0.812; SE = 0.128; 95% CI = [0.560, 1.063]) show significant and positive direct effects on entrepreneurial intention.

The results also confirm the mediating roles of entrepreneurial self-efficacy (B = 0.147; SE = 0.040; 95% CI = [0.078, 0.232]) and perceived financial literacy (B = 0.085; SE = 0.041; 95% CI = [0.005, 0.165]) in the relationship between risk propensity and entrepreneurial

intention. As the confidence intervals for the indirect effects do not include zero, these mediating effects are statistically significant [82].

5. Discussion

Our study advances both theory and research in the entrepreneurship field by empirically investigating not only the mediating effect of entrepreneurial self-efficacy, capturing psychological beliefs, but also the mediating role of perceived financial literacy, reflecting perceived cognitive competence. In this way, this study suggests a partial dual mediating mechanism in addition to the direct association between risk propensity and entrepreneurial intention. Previously, partially mediated models have reported consistent outcomes, in which the mediators account for only part of the association between risk propensity and the tendency to start a business [25]. Consistent with the logic of Social Cognitive Theory, the entrepreneurial self-efficacy route fits comfortably with students who are able to handle uncertainty; these students also tend to exhibit a higher level of confidence in seeking active opportunities and hands-on experience [21].

A closer examination of the association between risk propensity and perceived financial literacy is necessary, as this research examines this link from a different perspective. Much of the literature has defined financial literacy as an antecedent of risk propensity, where the knowledge comes first and those with better knowledge approach risk differently [61]. However, drawing on the learning-by-doing argument, our interpretation leans in a different direction [22,90]; in particular, risk-tolerant students may be more willing to enter situations involving financial uncertainty, and exposure to such environments may eventually make them feel more secure when dealing with financial decisions. It is not necessary for the two interpretations to be mutually exclusive. Similarly, the association between risk tolerance attracting individuals to financial activity and the resulting sense of competence making higher levels of risk appear to be more acceptable can be explained in a reciprocal pattern. However, as the data utilized in the present study were collected at a single point in time, these possibilities cannot be distinguished.

Consistent with previous studies, perceived financial literacy among university students was found to be positively associated with entrepreneurial intention [15,91]. One plausible explanation for this observation is that students who perceive higher financial competence in their environment tend to consider a venture as something that can be maintained, rather than just initiated. Similar findings in existing firms have demonstrated that owners with a higher degree of financial expertise handle debt, liquidity, and investment decisions more effectively, and their businesses tend to persist longer [16,26,92]. As students choose whether entrepreneurship is within their reach before their financial skills have been put into practice, the construct of this study is perceived assessment rather than tested knowledge, which may matter most at the intention stage.

The findings concerning perceived financial literacy should be interpreted in light of the household-oriented nature of the measurement instrument. Although the construct is examined at the individual respondent level, the items primarily capture students' perceptions of financial knowledge and practices within their households rather than their independently demonstrated financial competence. From a financial socialization perspective, these perceptions may reflect the financial learning environment in which students develop their attitudes toward financial decisions and uncertainty. Accordingly, the observed association between perceived financial literacy and entrepreneurial intention should be understood in terms of students' evaluations of their household financial environment, rather than as direct evidence that their individual financial capabilities are associated with stronger entrepreneurial intentions.

Although the examined outcome is general entrepreneurial intention, the findings also carry some meaning for ventures pursuing social and environmental goals. These ventures typically have longer payback periods and must balance ecological goals while remaining solvent [24,48]. The combination of confidence and perceived financial competence seen in this sample may be relevant for students considering sustainable initiatives if economic viability is viewed as a prerequisite for pursuing such goals rather than a competitor to them.

5.1. Theoretical Implications

This study yields three main theoretical implications. First, by positioning perceived financial literacy as a cognitive mechanism alongside entrepreneurial self-efficacy, we extend the social cognitive framework of entrepreneurial intention. The implementation of a partial dual mediation model that combines psychological belief and perceived cognitive competence suggests that the link between risk propensity and entrepreneurial intention involves not only the psychological confidence to act, but also the perceived financial competence to control the venture [6,25].

Second, the relationship between risk propensity and financial literacy is addressed in this study. Previous research has mostly considered financial literacy as an antecedent of risk propensity; however, our study findings demonstrate a positive association between the two, which is consistent with but does not establish the reverse direction. Consistent with the learning-by-doing perspective [22], we interpret perceived financial competence as partly reflecting both the household financial environment and the experiences of risk-prone individuals accumulated in uncertain financial situations, which further enhances the interpretation rather than replacing the conventional ordering.

Finally, by examining these mechanisms among university students in an emerging economy, this study offers contextual contributions to the interpretative framework of sustainability. Our model treats perceived financial literacy as a resource that may distinguish calculated from uninformed risk-taking in the formation of entrepreneurial intention in the context of an emerging economy where cash-flow pressure, limited capital, and limited access to funding shape entrepreneurial decisions. It also suggests that descriptions of entrepreneurial intention based solely on risk propensity are incomplete without the perceived competencies that accompany it. This is particularly relevant to sustainability-oriented entrepreneurship, where founders typically perceive more financial barriers [71].

5.2. Practical Implications

The findings have two practical implications for higher education institutions and policymakers, presented here as suggestions grounded in the previous literature and our empirical results.

First, considering the finding that perceived financial literacy appeared as a mediating mechanism alongside entrepreneurial self-efficacy, universities may consider pairing inspiration- and self-belief-oriented pedagogy with technical and competency-based skill training, rather than considering these as alternatives. This suggestion is in line with a pre–post-test study of a sustainability-oriented entrepreneurship course, the results of which showed that an increase in students' entrepreneurial intention was attributable to a change in perceived behavioral control and not a change in attitude [93]. Since risk propensity was positively associated with both mediators, business programs could be designed to give students opportunities to make decisions in risky environments. Possible classroom applications include financial management simulations, stock market games, or venture capital role-playing games, which offer a controlled environment for students to practice risk-taking. This may help students to understand risk in a calculated and technically grounded manner [94]. Additionally, rather than focusing only on conventional profit

projections, implementing sustainability parameters such as extended payback horizons or regulatory constraints could push students to practice and make judgments about financial matters under the real-world conditions that sustainable ventures typically face.

Second, this study's results point to the potential importance of integrating financial mentorship into entrepreneurship-supporting ecosystems for policymakers and government agencies in developing countries. In highly volatile environments such as Türkiye, providing only financial capital to individuals with a high risk appetite and limited financial management skills may not be sufficient to create durable ventures [48]. In this regard, government institutions could monitor these ventures' long-term survival, as a sustainable entrepreneurial ecosystem depends on venture longevity and volume. Combining financial incentives with capability-building and financial mentoring may help to direct public resources towards entrepreneurs who are able to take calculated risks. This is particularly important for sustainability-oriented ventures, as socio-ecological objectives can only be pursued if businesses survive their early years [24,67]. By implementing these steps through public support schemes, accelerators, and incubators, policymakers and government agencies could connect public development to the broader sustainable development goals of business ecosystems.

6. Limitations and Future Research

This study has certain limitations, as is typical of research on entrepreneurial intention. First, all research variables were measured at a single point in time, preventing the observation of dynamic processes. This limitation is particularly relevant to the learning-by-doing mechanism, as experiential financial competence develops over time. Neither the participants' prior financial experiences nor the longitudinal development of their financial competence was directly measured. Therefore, the learning-by-doing perspective remains a theoretical explanation rather than an empirically tested process. Furthermore, because all variables were self-reported by the same respondents, common method variance cannot be entirely ruled out. The study also examined students' entrepreneurial intentions rather than their actual entrepreneurial behaviors and did not investigate whether the participants subsequently established ventures or maintained their operations [95]. Future research should employ longitudinal designs to examine how entrepreneurial intentions develop, whether they translate into actual venture creation, and how newly established businesses maintain their financial viability and sustainability over time [96]. Such approaches would also provide stronger evidence regarding the temporal ordering of the proposed relationships.

Second, the use of convenience sampling among university students limits the generalizability of the findings. An additional measurement-related limitation concerns the conceptual scope of perceived financial literacy. Although this construct was assessed at the individual respondent level, the measurement instrument primarily captures students' perceptions of financial knowledge and practices within their households rather than their independently demonstrated financial competence. Accordingly, the findings should be interpreted as reflecting students' perceptions of their household financial environment, consistent with the financial socialization perspective, rather than as direct evidence of their individual financial capabilities or objectively verified financial literacy. Future research could address this distinction by incorporating individual-level financial literacy measures alongside household-oriented assessments and objective financial knowledge tests. Such an approach would help distinguish the respective contributions of personal financial competence and perceived household financial environments to entrepreneurial intention.

Third, the proposed model primarily examined individual-level factors, namely risk propensity, entrepreneurial self-efficacy, and perceived financial literacy, without explicitly incorporating broader environmental conditions that may shape entrepreneurial intention.

Social, political, and economic factors, including inflation, market volatility, and government support mechanisms, may influence individuals' entrepreneurial decisions, particularly in emerging economies such as Türkiye [97]. Future studies could therefore extend the present framework by integrating external environmental factors with individual psychological and cognitive characteristics. This would provide a more comprehensive understanding of entrepreneurial intention across different institutional and economic contexts.

Finally, this study did not distinguish between conventional and sustainability-oriented entrepreneurial intentions, as entrepreneurial intention was measured as a general construct. Consequently, the findings should not be interpreted as direct evidence concerning intentions to establish environmentally or socially sustainable ventures. Future research could examine sustainable entrepreneurial intention as a distinct construct to determine whether perceived financial literacy and entrepreneurial self-efficacy exhibit similar relationships when prospective ventures explicitly pursue environmental and social objectives alongside financial viability. Further extensions could incorporate sustainability-related factors, such as socio-ecological values, governmental incentives, and access to digital infrastructure, to explore how these contextual conditions interact with psychological and financial perceptions in shaping sustainability-oriented entrepreneurial intentions.

7. Conclusions

This study contributes to the entrepreneurial intention literature by examining the relationships between risk propensity, entrepreneurial self-efficacy, perceived financial literacy, and entrepreneurial intention among university students in Türkiye. From a Social Cognitive Theory perspective, this study proposed and tested a partial parallel dual mediation model to examine how risk propensity is related to entrepreneurial intention, both directly and indirectly, through entrepreneurial self-efficacy and perceived financial literacy. The results indicate that, alongside the direct association with risk propensity, both the psychological belief mechanism and the perceived cognitive competence mechanism are associated with university students' entrepreneurial intention.

In the sustainable entrepreneurship context, risk-taking alone may not be sufficient for venture creation, as students may also need perceived financial competence to manage their risks and keep the venture viable under volatile conditions. Our results were consistent with the view that this perceived competence is acquired not only through formal instruction but also, in part, through exposure to engagement with an uncertain financial context. This study's results also suggest that universities and policymakers could combine competency-based pedagogy with financial mentorship to support responsible risk-taking. This study did not measure sustainable entrepreneurial intention as a distinct construct but, instead, treated sustainability as the context in which entrepreneurial intention is formed. The contribution is conceptual and contextual rather than providing causal evidence, identifying capability resources related to entrepreneurial intention, and providing a foundation for longitudinal research.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. Participation was voluntary, and anonymity and confidentiality were ensured.

Data Availability Statement: The data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to privacy considerations.

Conflicts of Interest: The authors declare no conflicts of interest.

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