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Family capital and entrepreneurial intentions of vocational undergraduates: the chain mediating role of social support and critical thinking

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Background: Vocational undergraduates in China often face structural barriers in entrepreneurship, including limited family resources, weak social support, and insufficient critical thinking skills. Understanding the psychological mechanisms underlying their entrepreneurial intentions is essential for improving support strategies.

Objective: This study investigates the chain mediating effect of social support and critical thinking on the relationship between family capital and entrepreneurial intentions among vocational undergraduate students.

Methods: A convenience sampling method was used, with the questionnaire link randomly distributed across departments of a vocational university in Guangdong, China. Data were collected from 858 valid participants through the Wenjuanxing online platform. Four established instruments were used: the Family Capital Scale (FCS), Individual Entrepreneurial Intentions Scale (IEIS), Oslo Social Support Scale (OSSS-3), and the Critical Thinking Disposition Scale (CTDS). Data analysis was conducted using SPSS 27.0 and PROCESS macro with bootstrapping to examine the hypothesized chain mediation model.

Results: Family capital significantly predicted entrepreneurial intentions ($\beta = 0.523$, $p < 0.001$), social support ($\beta = 0.110$, $p < 0.001$), and critical thinking ($\beta = 0.236$, $p < 0.001$). Social support significantly predicted both critical thinking ($\beta = 0.564$, $p < 0.001$) and entrepreneurial intentions ($\beta = 0.733$, $p < 0.001$). Critical thinking also positively predicted entrepreneurial intentions ($\beta = 0.407$, $p < 0.001$). The total indirect effect of social support and critical thinking was significant, supporting the chain mediation hypothesis.

Conclusion: Family capital enhances vocational undergraduates' entrepreneurial intentions through the mediating roles of social support and critical thinking. The findings highlight the importance of strengthening both external support networks and internal cognitive resources in entrepreneurship education. Policymakers and educators should consider targeted strategies to improve social capital and critical thinking development among vocational students.

KEYWORDS

family capital, entrepreneurial intentions, social support, critical thinking, vocational undergraduates

1 Introduction

Against the backdrop of slowing economic growth and an increasingly challenging employment landscape, university students-particularly those enrolled in vocational undergraduate programs-are encountering unprecedented difficulties in securing employment or launching entrepreneurial ventures (Wang, 2024). On one hand, innovation and entrepreneurship are widely regarded as key drivers of economic development, as they stimulate individual potential, generate employment opportunities, and foster technological advancement (Medeiros et al., 2020). In recent years, the Chinese government has placed growing emphasis on promoting innovation and entrepreneurship education in higher education institutions, with a range of supportive policies and practical programs being actively implemented (Lv et al., 2021).

On the other hand, despite national advocacy for the equal importance of vocational and general higher education, vocational undergraduates continue to face structural disadvantages in the labor market, including academic credential discrimination and prejudices regarding their perceived capabilities. These obstacles restrict their access to quality job opportunities and often result in significantly lower salary expectations (Huang et al., 2025). The dual pressures of ongoing economic restructuring and university enrollment expansion have further magnified the competitive disadvantages of vocational undergraduates. Many employers prioritize graduates from elite institutions-such as "985," "211," or "Double First-Class" universities-while holding stereotypical views that vocational undergraduates are "practically skilled but theoretically weak" or "limited in capability" (Li et al., 2024). Furthermore, the lack of consistent social support systems and structured entrepreneurial guidance means that even those with strong entrepreneurial intentions often struggle to translate their aspirations into action, thereby reinforcing the cycle of "employment difficulty" and "entrepreneurial difficulty" among this group (Lu et al., 2021).

In an effort to address these challenges, the Chinese government launched the Implementation Plan for the Reform of National Vocational Education in 2019, aiming to strengthen the modern vocational education system and enhance the quality of vocational undergraduate education (Huang et al., 2021). In 2021, Chinese President Xi Jinping reiterated the importance of steadily advancing vocational undergraduate education and establishing a number of high-quality, competitive vocational institutions at the National Vocational Education Conference (Cheng and Lu, 2024). According to the International Standard Classification of Education (ISCED), vocational undergraduate programs in China correspond to ISCED Level 6, which refers to bachelor's level education with a technical or vocational orientation (Tianzuo et al., 2025). Despite these encouraging policy signals, practical outcomes remain limited: the entrepreneurial rate among vocational undergraduates is still significantly lower than that of their counterparts in general higher education. Reports indicate that while the entrepreneurial rate for general university graduates can reach up to 28%, the rate for vocational undergraduates is less than 2% (Wu and Tian, 2022). This stark contrast not only highlights the persistent structural deficiencies within the vocational undergraduate education system but also reflects the relative lack of social capital that hinders students' entrepreneurial pathways.

Entrepreneurial intention refers to an individual's willingness or inclination to engage in entrepreneurial activities in the near future and is widely recognized as one of the most significant predictors of entrepreneurial behavior (Maheshwari et al., 2023). For vocational undergraduate students, entrepreneurial intention reflects their psychological tendency and determination to pursue entrepreneurial endeavors in the future. Previous studies have indicated that entrepreneurial intention is influenced by a variety of factors, including personality traits, background variables, and environmental conditions (Anjum et al., 2020). In addition to entrepreneurial education, self-efficacy has also been identified as a critical factor shaping individuals' entrepreneurial intentions (Mei et al., 2020). Moreover, entrepreneurial intention is regarded as the most reliable predictor of actual entrepreneurial behavior, serving as a key psychological antecedent in the transition from intention to action (Wang et al., 2023).

In the current context of economic slowdown, many small and medium-sized enterprises (SMEs) are reducing recruitment or laying off employees to cope with unfavorable market expectations, leading to a significant decline in overall employment demand (Shi, 2023). Vocational college graduates, in particular, face a dual disadvantage: not only do they encounter weaker employment competitiveness, but they are also more likely to experience job instability and underemployment (Wang and Wang, 2023). These challenges highlight the urgent need to diversify employment pathways for vocational undergraduates. Among these, entrepreneurship serves as a vital alternative route for career development. Therefore, it is of critical importance to explore the key factors that influence the entrepreneurial intentions of vocational undergraduate students, in order to provide theoretical guidance and practical support for enhancing their entrepreneurial engagement.

Family capital refers to the manifestation of social capital within the family and typically encompasses three key components: economic capital, cultural capital, and social capital (Liu and Liao, 2023). For vocational undergraduate students, family capital represents the aggregate of the financial resources, educational and cultural assets, and social networks that their families possess. These forms of capital collectively influence the opportunities, confidence, and strategic decisions that students may have when considering entrepreneurial activities.

Previous research has indicated that family support can effectively mitigate the negative effects of financial stress encountered during the entrepreneurial process (Xu et al., 2020). In particular, family social capital serves as a critical driving force in entrepreneurship, offering individuals not only emotional support but also access to social networks and strategic connections (Iturrioz-Landart et al., 2023). Moreover, families often play an instrumental role in entrepreneurial activities by providing unique combinations of skills, knowledge, human resources, and material support-resources that are essential for

the initiation and sustainability of entrepreneurial ventures (Bu et al., 2023). Given the multidimensional contributions of family capital, it is reasonable to posit that family resources can significantly shape students' entrepreneurial mindset and behavioral intentions. Therefore, the following hypothesis is proposed in this study:

> *H1*: Family capital significantly and positively predicts the entrepreneurial intentions of vocational undergraduate students.

Social support refers to the emotional, informational, and material assistance that individuals receive from their social relationships (Vuong et al., 2023). For vocational undergraduate students, social support includes both tangible and intangible help obtained from family members, friends, and broader community networks. This support may take the form of emotional encouragement, psychological reassurance, financial aid, or access to relevant information and resources. Particularly in the context of entrepreneurship-an inherently uncertain and challenging process-social support plays a crucial role in shaping individuals' psychological resilience and decision-making capacity.

An increasing number of studies have emphasized the significant impact of social support on individuals' entrepreneurial intentions. Social support has been shown to be a key determinant of entrepreneurial activity, especially among women (Hossain et al., 2024). Similarly, research indicates that students who perceive higher levels of social support tend to demonstrate stronger entrepreneurial intentions (Ernawati et al., 2022). Moreover, social support functions as a mediating variable between entrepreneurial passion and entrepreneurial intention, suggesting both direct and indirect pathways of influence (Neneh, 2022). Based on the above findings, it is plausible that social support serves as a psychological and contextual mechanism through which family capital affects students' entrepreneurial intentions. Accordingly, this study proposes the following hypothesis:

> *H2*: Social support mediates the relationship between family capital and entrepreneurial intentions.

Critical thinking is defined as a purposeful and self-regulated process of judgment that involves interpretation, analysis, evaluation, and reasoning, while also taking into account the evidence, concepts, methodological standards, and contextual information upon which the judgment is based (Fan and See, 2022). For vocational undergraduate students, critical thinking refers to their capacity to deliberately apply logical analysis, evaluative judgment, and reasoning strategies in order to assess the validity and reliability of information. In today's era of information overload and increasingly complex decision-making environments, the ability to think critically is especially vital.

A substantial body of research has confirmed the indispensable role of critical thinking in the field of business education. It helps students navigate the uncertainty and complexity of entrepreneurial environments and is regarded as a core component of entrepreneurship education (Calma and Davies, 2021). Moreover, critical thinking, along with problem-solving and innovation capabilities, constitutes a set of essential competencies for entrepreneurial success. Individuals who possess strong critical thinking skills are more likely to effectively identify entrepreneurial opportunities, evaluate potential risks, and make sound, evidence-based decisions (Odeyemi et al., 2024). In addition, critical thinking not only enhances students' entrepreneurial learning but also directly contributes to the development of their entrepreneurial intentions, particularly under conditions of uncertainty and challenge (Ghafar, 2020).

Building on these findings, it is reasonable to infer that critical thinking serves as a key cognitive mechanism through which family capital influences entrepreneurial intentions. It enables students to transform family-based resources into strategic thinking and decision-making capacities, thus enhancing their autonomy and judgment in the entrepreneurial process. Furthermore, when considered in conjunction with social support, critical thinking may form a synergistic mechanism at the psychological and cognitive levels, jointly reinforcing individuals' preparedness for entrepreneurship. Therefore, this study proposes the following hypotheses:

> *H3*: Critical thinking mediates the relationship between family capital and entrepreneurial intentions.

> *H4*: Social support and critical thinking jointly play a chain mediating role in the relationship between family capital and entrepreneurial intentions.

Currently, while China's vocational undergraduate education increasingly emphasizes entrepreneurial practice, empirical research on how family-related factors shape entrepreneurial intentions in this group remains limited, especially in terms of underlying mechanisms. To gain a more comprehensive understanding of how family background resources translate into entrepreneurial motivation, this study takes family capital as the starting point to examine its influence on entrepreneurial intentions, and further explores the chain mediating roles of social support and critical thinking. The aim is to provide theoretical insights and empirical evidence for improving entrepreneurship support systems and informing relevant policy development for vocational undergraduates.

2 Materials and methods

2.1 Participants

This study adopted a convenience sampling strategy, with the survey link randomly distributed across different departments and classes within the university to ensure coverage of students from diverse academic backgrounds. Data collection took place from March 6 to March 21, 2024. All participants joined voluntarily after being informed about the study's purpose and anonymity protocol. The questionnaire was administered via Wenjuanxing, a widely used online survey platform in China. A total of 950 questionnaires were distributed.

To ensure data quality, two exclusion criteria were applied during data screening: (1) questionnaires with abnormally short response times (less than 2 min, compared to an average of approximately 8 min); and (2) questionnaires with highly repetitive response patterns (e.g., selecting the same option throughout), which may indicate inattentive answering. After applying these criteria, 858 valid responses were retained, yielding a response rate of 90.3%. The final

sample consisted of 416 male and 442 female vocational undergraduate students, aged between 17 and 24 years (M = 20.49, SD = 2.30).

This study received ethical approval from the Ethics Committee of Guangdong Institute of Business and Technology on February 23, 2024 (Approval No. 2024GS011). To ensure participant privacy and confidentiality, all responses were collected anonymously. Prior to participation, each respondent was provided with a detailed informed consent form outlining the purpose, procedures, and voluntary nature of the study. Written informed consent was obtained from all participants before the commencement of data collection.

2.2 Research tools

To ensure the cultural and linguistic appropriateness of the measurement instruments used in this study, all original English-language scales were adapted through a rigorous back-translation procedure. Initially, the original scales were translated into Chinese by a bilingual expert fluent in both English and Chinese. Subsequently, a second bilingual translator-who was not involved in the initial translation-independently translated the Chinese version back into English. The original and back-translated English versions were then carefully compared to identify discrepancies in meaning, terminology, or phrasing.

Based on this comparison, necessary revisions were made to the Chinese version to ensure semantic equivalence and conceptual consistency with the original instruments. This process helped to enhance the validity and reliability of the scales in the Chinese cultural context and ensured that the items were both linguistically accurate and culturally relevant for vocational undergraduate students in China.

2.2.1 Measurement of family capital

This study used the Family Capital Scale (FCS) to assess vocational undergraduate students' family capital (Wu, 2012). The scale consists of 14 items rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item is: "My parents harbor a predilection for engaging with literary materials." The scale comprises three dimensions: family economic capital, family social capital, and family cultural capital. Higher total scores indicate higher levels of perceived family capital. In this study, the Cronbach's alpha coefficient was 0.916, indicating good internal consistency and reliability.

2.2.2 Measurement of entrepreneurial intentions

Entrepreneurial intentions were measured using the Individual Entrepreneurial Intentions Scale (IEIS) (Thompson, 2009). The scale contains 10 items, including 4 distractor items (not scored) and 3 reverse-coded items. A sample item is: "Intend to set up a company in the future." All items are rated on a 6-point Likert scale ranging from 1 (very incorrect) to 6 (very correct). Higher total scores indicate stronger entrepreneurial intentions. In the present study, the scale demonstrated excellent reliability, with a Cronbach's alpha of 0.985.

2.2.3 Measurement of social support

Social support was assessed using the Oslo Social Support Scale (OSSS-3) (Kocalevent et al., 2018). The scale consists of three items: the first item is rated on a 4-point Likert scale, and the second and third items are rated on a 5-point Likert scale. A sample item is: "How easy is it to get practical help from neighbors if you should need it?" Higher scores reflect stronger perceived social support. The Cronbach's alpha in this study was 0.959, indicating a very high level of reliability.

2.2.4 Measurement of critical thinking

Critical thinking was measured using the Critical Thinking Disposition Scale (CTDS) (Sosu, 2013). The scale includes 11 items rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item is: "I use more than one source to find out information for myself." The scale contains two dimensions: critical openness and reflective skepticism. Higher scores indicate a stronger critical thinking disposition. In this study, the Cronbach's alpha was 0.956, showing excellent internal consistency and reliability.

2.3 Data analysis

All data analyses were conducted using SPSS version 27.0. First, reliability tests were performed to assess the internal consistency of all measurement instruments by calculating Cronbach's alpha coefficients. Descriptive statistics, including means and standard deviations, were computed to understand the distribution characteristics of each variable. Pearson correlation analysis was then conducted to examine the relationships among family capital, social support, critical thinking, and entrepreneurial intentions, and to test the assumptions required for mediation analysis.

To examine the mediating effects of social support and critical thinking, the PROCESS macro (Model 6) (Hayes, 2012). This procedure allows for the estimation of direct, indirect, and chain mediating effects within a multiple mediation model. The bootstrap method with 5,000 resamples was applied to test the significance of mediation effects, with 95% bias-corrected confidence intervals used to determine whether indirect effects were statistically significant. Mediation was considered significant if the confidence interval did not include zero. This analytical strategy enabled preliminary testing of the proposed hypotheses and clarified the structural relationships among the variables.

3 Results

3.1 Common method bias

Before analysing the data, common method bias was tested. Harman's single-factor method produced 7 factors with eigenvalues exceeding 1. The variance explained by the first factor was 38.27%, below the critical threshold of 40%, indicating no common method bias issue (Zhang et al., 2024).

3.2 Descriptive statistics and correlation analysis

Table 1 presents the means, standard deviations, and Pearson correlation coefficients among the core variables of this study. The results indicate significant positive correlations among all key constructs. Specifically, family capital was positively correlated with

TABLE 1 Descriptive statistics and correlations among variables (N = 858).

Variables	Mean	SD	1	2	3	4
1. Family capital	39.15	6.61	1			
2. Entrepreneurial intentions	17.46	7.31	0.473***	1		
3. Social support	8.04	2.80	0.260***	0.467***	1	
4. Critical thinking	34.16	7.55	0.261***	0.570***	0.263***	1

***$p < 0.001$.

entrepreneurial intentions ($r = 0.473$, $p < 0.001$), social support ($r = 0.260$, p < 0.001), and critical thinking ($r = 0.261$, $p < 0.001$). In addition, entrepreneurial intentions were significantly associated with social support ($r = 0.467$, $p < 0.001$) and critical thinking ($r = 0.570$, $p < 0.001$). A significant positive correlation was also observed between social support and critical thinking ($r = 0.263$, $p < 0.001$).

These findings meet the fundamental assumptions for conducting mediation analysis-namely, the independent variable must be significantly correlated with both the mediators and the dependent variable, and the mediators must also be significantly associated with the dependent variable. Moreover, since all correlation coefficients are below the threshold of 0.7, multicollinearity does not appear to be a concern in this dataset, supporting the validity of subsequent regression and mediation analyses.

3.3 Mediation model testing

As shown in Table 2 and Figure 1, family capital significantly and positively predicted several key variables in the proposed model. Specifically, family capital was a significant positive predictor of entrepreneurial intentions ($\beta = 0.523$, $p < 0.001$), critical thinking (β = 0.236, $p < 0.001$), and social support (β = 0.110, $p < 0.001$). Furthermore, social support significantly predicted both critical thinking (β = 0.564, $p < 0.001$) and entrepreneurial intentions (β = 0.733, $p < 0.001$). Likewise, critical thinking significantly and positively predicted entrepreneurial intentions (β = 0.407, $p < 0.001$). After including social support and critical thinking as mediating variables in the regression model, the predictive effect of family capital on entrepreneurial intentions remained statistically significant (β = 0.321, $p < 0.001$), suggesting a partial mediation effect. These results support the hypothesized roles of social support and critical thinking as mediators in the relationship between family capital and entrepreneurial intentions.

Table 3 provides a detailed account of the chain mediating effects of social support and critical thinking in the relationship between family capital and entrepreneurial intentions. The results show that the total indirect effect was 0.202 [SE = 0.022, 95% CI = (0.160, 0.245)], indicating that a substantial portion of the effect of family capital on entrepreneurial intentions is transmitted through mediating variables. Specifically, the first pathway (Family Capital → Social Support → Entrepreneurial Intentions) yielded an indirect effect of 0.081 [SE = 0.012, 95% CI = (0.059, 0.106)], suggesting that social support plays a significant mediating role in this relationship, thereby supporting Hypothesis H2. The second pathway (Family Capital → Critical Thinking → Entrepreneurial Intentions) had an indirect effect of 0.096 [SE = 0.017, 95% CI = (0.064, 0.129)], indicating that critical thinking also serves as a key mediator, thus confirming Hypothesis H3. The third pathway (Family Capital → Social Support → Critical Thinking → Entrepreneurial Intentions) demonstrated a chain indirect effect of 0.025 [SE = 0.005, 95% CI = (0.016, 0.036)], revealing a significant sequential mediation between the two mediators, which further supports Hypothesis H4.

In addition, the direct effect of family capital on entrepreneurial intentions remained significant after controlling for the mediators [$\beta = 0.321$, SE = 0.028, 95% CI = (0.266, 0.377)], providing evidence for Hypothesis H1. Notably, all 95% bootstrap confidence intervals (based on 5,000 resamples) did not include zero, indicating that all indirect effects were statistically significant. These findings collectively suggest that both social support and critical thinking not only serve as independent mediators but also exert a joint effect through a sequential pathway in the relationship between family capital and entrepreneurial intentions.

4 Discussion

4.1 The impact of family capital on entrepreneurial intentions

This study explored the influence of family capital on the entrepreneurial intentions of vocational undergraduate students and found that family capital significantly and positively predicts entrepreneurial intentions, thereby supporting Hypothesis H1. In other words, students with higher levels of family capital tend to exhibit stronger entrepreneurial intentions. This finding aligns with a substantial body of existing literature, which emphasizes the critical role of family background in shaping entrepreneurial motivation (Georgescu and Herman, 2020; Moussa and Kerkeni, 2021).

From a theoretical perspective, family capital can enhance individuals' entrepreneurial confidence and behavioral readiness by providing access to material resources, social relationships, and cultural values. Specifically, family economic capital can alleviate financial pressures and uncertainties in the early stages of entrepreneurship, thereby lowering entry barriers and stimulating entrepreneurial willingness (Gao et al., 2021). This is consistent with the view of social capital theory, which highlights that the accessibility of resources influences behavioral choices.

In addition, the social networks embedded in family social capital offer students emotional support and informational resources, enabling them to obtain guidance, connections, and partnership opportunities during the entrepreneurial process, thus enhancing their entrepreneurial self-efficacy (Palmer et al., 2021). On the cultural dimension, family capital transmits entrepreneurial values, tolerance for risk, and a strong achievement orientation, all of which serve as psychological and cognitive support for entrepreneurial engagement.

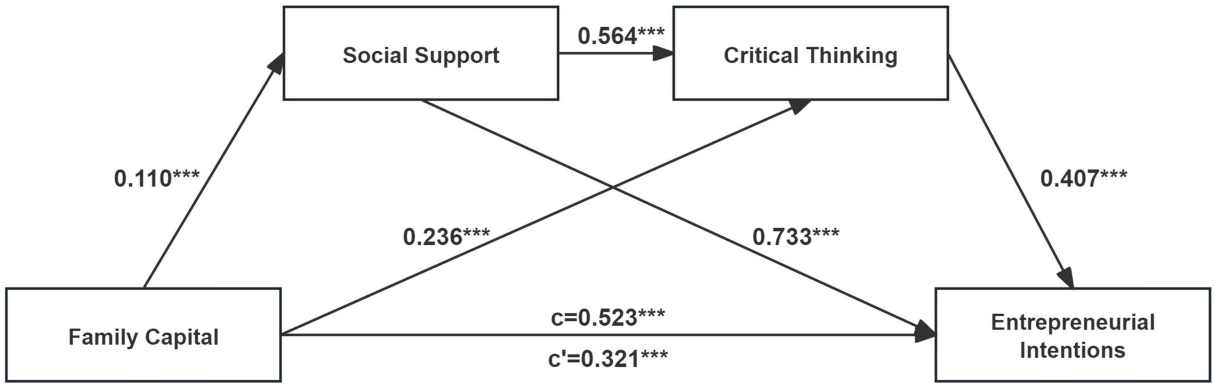

FIGURE 1
Standardized path coefficients for the mediation model between family capital and entrepreneurial intentions. ***$p < 0.001$.

TABLE 2 Regression analysis for family capital, entrepreneurial intentions, critical thinking and social support.

Dependent variable	Predictor	*R*	R^2	*F*	β	*t*
Entrepreneurial intentions		0.713	0.508	293.671***		
	Family capital				0.321	11.427***
	Social support				0.733	11.033***
	Critical thinking				0.407	16.529***
Critical thinking		0.330	0.109	52.151***		
	Family capital				0.236	6.174***
	Social support				0.564	6.247***
Social support		0.261	0.068	62.30***		
	Family capital				0.110	7.893***

***$p < 0.001$.

TABLE 3 Mediation effects of social support and critical thinking.

Total, direct, and indirect effect	Effect	SE	95% CI	
			LLCI	ULCI
Total effect	0.523	0.033	0.458	0.589
Direct effect: FC → EI	0.321	0.028	0.266	0.377
Total indirect effect	0.202	0.022	0.160	0.245
FC → SS → EI	0.081	0.012	0.059	0.106
FC → CT → EI	0.096	0.017	0.064	0.129
FC → SS → CT → EI	0.025	0.005	0.016	0.036

FC, family capital; EI, entrepreneurial intentions; SS, social support; CT, critical thinking; SE, standard error; CI, confidence interval; LLCI, lower limits of the confidence interval; ULCI, upper limits of the confidence interval.

However, some studies have suggested that in certain developing countries or resource-unequal regions, family capital does not always translate directly into entrepreneurial intentions. Instead, conservative family values or excessive risk aversion may suppress students' entrepreneurial drive (Huang et al., 2024). These inconsistent findings suggest that the effect of family capital on entrepreneurial intention may be moderated by factors such as cultural value orientation, regional economic development level, and educational resource equity. The stronger positive effect observed in this study may be attributable to the sample being drawn from a relatively developed coastal province in China, where families generally have greater access to educational and informational resources.

4.2 Independent mediating role of social support and critical thinking

This study further confirmed the mediating roles of social support and critical thinking in the relationship between family capital and entrepreneurial intentions, thereby supporting Hypotheses H2 and H3. First, the results showed that family capital significantly and positively predicts social support, which is consistent with prior research (Schobert et al., 2023). Students from families with greater resources are more likely to benefit from richer social interactions and external connections, and thus receive both emotional encouragement and instrumental support from family members, friends, and community networks during the development of their entrepreneurial motivation. According to the theory of resource acquisition, the more family capital individuals possess, the more likely they are to build supportive social networks, thereby enhancing their sense of social belonging and trust, and increasing their willingness to act.

The positive predictive effect of social support on entrepreneurial intentions was also confirmed (Neneh, 2022). Social support can take various forms—emotional comfort, practical advice, financial assistance, and opportunity recommendations—all of which directly enhance individuals' entrepreneurial confidence and feasibility. However, other studies have noted that social support from families, when overly controlling or interventionist, may hinder entrepreneurial autonomy and exert a counterproductive influence. This suggests that the type and quality of social support may serve as key moderating factors in the effect pathway, warranting further exploration.

Second, this study found that family capital significantly and positively predicts critical thinking, which is in line with prior findings (Wan, 2022). Students with higher levels of family capital are more likely to access quality educational resources and diversified knowledge, which help foster openness, independence, and reflective thinking at the cognitive level. Moreover, critical thinking significantly and positively predicts entrepreneurial intention, echoing the findings of Dumitru and Halpern (2023). This suggests that critical thinking serves as an essential cognitive resource that enables individuals to make informed judgments and develop rational strategies when facing uncertainty and risk in the entrepreneurial process.

4.3 Chain mediating effect of social support and critical thinking

The study also found that family capital influenced vocational undergraduate students' entrepreneurial intentions through the chain mediation of social support and critical thinking, consistent with previous research findings (Mahfud et al., 2020), while validating H4. Specifically, family capital first enhances individuals' social support networks. Resources and support from the family not only provide vocational undergraduate students with financial security but also emotional encouragement and confidence.

Strong social support further promotes vocational undergraduate students' critical thinking abilities. In a rich social support environment, they have more opportunities to engage in various exchanges and interactions, thus accessing different perspectives and information. This diverse information source and interaction opportunities help vocational undergraduate students develop critical thinking skills, enabling them to effectively analyze and evaluate entrepreneurial opportunities and risks.

Through this mechanism, family capital not only directly affects vocational undergraduate students' entrepreneurial intentions but also indirectly enhances it through social support and critical thinking. Social cognitive theory posits that behavior, cognition, and environmental factors interact (Schunk and DiBenedetto, 2020). In this process, social support provides vocational undergraduate students with a rich environment and resources, allowing them to develop critical thinking abilities, thereby better coping with challenges in the entrepreneurial process.

Ultimately, this chain mediating effect indicates that family capital significantly enhances vocational undergraduate students' entrepreneurial intentions through the dual paths of social support and critical thinking. This finding has important implications for educational policy and practice. First, schools and educational institutions should focus on building and strengthening students' social support networks through mentorship, alumni networks, and community resources, providing more support and assistance to students. Second, educational curricula should emphasize the cultivation of critical thinking through case analysis, group discussions, and simulated entrepreneurship projects, enhancing students' analytical and decision-making abilities.

Moreover, the government and educational departments can consider incorporating social support and critical thinking into entrepreneurship education policies, providing special funds, training programs, and resource platforms to help students and their families better utilize and develop family capital. Future research can further explore the applicability of this chain mediating effect in different cultural and educational contexts and how to effectively apply this theoretical framework in educational practice.

4.4 Research limitations and future directions

Although this study offers valuable insights into how family capital influences entrepreneurial intentions among vocational undergraduate students through the mediating roles of social support and critical thinking, several limitations and delimitations should be acknowledged.

First, the use of a cross-sectional design limits the ability to make causal inferences. Future research could adopt longitudinal or time-lagged designs to better understand the dynamic relationships among family capital, social support, critical thinking, and entrepreneurial intentions. Second, the data were collected through self-report questionnaires, which may be subject to social desirability bias or self-reporting inaccuracies. Mixed-methods approaches, including interviews, focus groups, or experimental designs, are recommended for future research to enhance the objectivity and robustness of findings.

Regarding the delimitations, the study focused exclusively on students from a single vocational university in Guangdong Province, China. This presents geographical and institutional limitations, as the sample may not be representative of vocational undergraduates across other regions or institutional types. Therefore, caution should be taken in generalizing the findings. Future studies should aim to include broader and more diverse samples from different provinces and institutional contexts to test the generalizability of the model.

In addition, while the current study examined social support and critical thinking as mediators, other potentially important psychological or contextual variables-such as self-efficacy, innovation capacity, and risk tolerance-were not included. Future studies are encouraged to incorporate these factors to build a more comprehensive and explanatory framework.

At the policy level, this study underscores the importance of enhancing family capital, strengthening students' social support systems, and cultivating critical thinking abilities to improve entrepreneurial intentions among vocational undergraduates. Policymakers are advised to invest more in vocational education, facilitate university-community collaboration in entrepreneurship support, and integrate critical thinking training into entrepreneurship curricula. At the institutional level, targeted support mechanisms

should be developed for students from low-capital families by leveraging alumni networks, mentoring relationships, and community resources to construct effective support systems.

Finally, considering that cultural norms significantly shape family structures, forms of social support, and perceptions of entrepreneurship, future research should conduct cross-cultural comparisons to verify and extend these findings in broader global contexts.

5 Conclusion

This study explored the impact of family capital on vocational undergraduate students' entrepreneurial intentions through the mediating roles of social support and critical thinking, verifying the chain mediating effect of social support and critical thinking. The findings indicate that family capital directly influences entrepreneurial intentions and indirectly enhances vocational undergraduate students' entrepreneurial intentions through social support and critical thinking. Specifically, abundant family capital can strengthen vocational undergraduate students' social support networks, thereby promoting the development of their critical thinking abilities, ultimately increasing their entrepreneurial intentions. These findings have important theoretical and practical significance. First, the results emphasize the crucial role of family capital in forming vocational undergraduate students' entrepreneurial intentions, suggesting that educators and policymakers should focus on supporting students' family backgrounds to promote the development of entrepreneurship education. Second, the findings indicate that social support and critical thinking are important paths for enhancing entrepreneurial intentions, providing new ideas for designing entrepreneurship education and training programs. Strengthening students' social support networks and critical thinking abilities can effectively improve their entrepreneurial intentions and success rate.

Data availability statement

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

Ethics statement

The studies involving humans were approved by Ethics Committee of Guangdong Business and Technology University. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

Author contributions

ZZ: Conceptualization, Investigation, Software, Writing – original draft, Writing – review & editing. HA: Data curation, Methodology, Supervision, Writing – review & editing. AG: Methodology, Software, Supervision, Writing – review & editing. JD'S: Investigation, Project administration, Resources, Writing – review & editing. II: Conceptualization, Methodology, Writing – review & editing. ZH: Conceptualization, Investigation, Software, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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