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How Entrepreneurial Spirit Influences Entrepreneurial Intentions Through Psychological Capital: A Case Study in Guangxi, China

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Abstract

Aim/Purpose: This paper aimed to explore the influence of entrepreneurial spirit on entrepreneurial intentions, and to investigate whether a stronger entrepreneurial spirit was correlated with higher entrepreneurial intentions among students. It also investigated the possible mediating role of psychological capital in order to understand how psychological capital may bridge or influence the relationship between entrepreneurial spirit and entrepreneurial intentions.

Introduction/Background: These issues were addressed by integrating theories of entrepreneurial spirit, psychological capital, and entrepreneurial intentions, and conducting an empirical study. The study built on previous research that examined these constructs separately or in limited combinations, seeking to provide a more comprehensive understanding of how entrepreneurial spirit, characterized by innovation, risk-taking, and perseverance, interacts with psychological capital, consisting of optimism, resilience, hope, and self-efficacy, to shape college students' entrepreneurial intentions.

Methodology: The research was conducted using a survey questionnaire. The target population was college students in Guangxi, China, with a final sample size of 2,131 students from 15 universities. An online questionnaire ("Questionnaire Star") was used; it was sent to a convenience sample of students, allowing them to freely choose whether to participate or not. The questionnaire was designed based on Luthans' psychological capital measurement theory, covering Entrepreneurial Spirit (consisting of innovation ability, risk-taking, and leadership dimensions), Entrepreneurial Intentions (entrepreneurial motivation, attitude, and subjective perception dimensions), and Psychological Capital (optimism, resilience, and hope dimensions), with four questions for each dimension, and five additional questions about respondents' demographic characteristics. All questions were scored on a 5-point Likert scale. The data was analyzed using various statistical techniques, including Cronbach's alpha for reliability testing, Kaiser–Meyer–Olkin and Bartlett's tests for validity assessment, ANOVA for variance analysis, Pearson's correlation for relationship examination, and regression analysis using Stata 17 to test hypotheses and analyze direct and mediating effects.

Findings: The study found that entrepreneurial spirit had a significant positive correlation with entrepreneurial intentions, and this relationship was further mediated by psychological capital. Cronbach's alpha tests showed good reliability for all constructs, with coefficients as follows: psychological capital (.894), self-efficacy (.754), hope (.713), resilience (.727), optimism (.704), entrepreneurial spirit (.860), and entrepreneurial intentions (.869). The Kaiser–Meyer–Olkin value of .898 and a passing score for Bartlett's test of sphericity indicated the data's suitability for factor analysis. Descriptive statistics revealed gender and class level differences in the measured variables, with more female and senior respondents; higher scores were observed among seniors and males. ANOVA results showed that the regression model significantly explained variations in the outcome variables. Pearson's correlation analysis indicated strong positive correlations between Entrepreneurial Spirit and Entrepreneurial Intentions (.697), Psychological Capital and Entrepreneurial Intentions (.805), and Entrepreneurial Spirit and Psychological Capital (.521). Regression analyses demonstrated that both Entrepreneurial Spirit and Psychological Capital had significant positive effects on Entrepreneurial Intentions, with acceptable VIF and D-W values. The mediation effect was

confirmed through three regression models, where the introduction of Psychological Capital enhanced the model's explanatory power, as shown by increased ΔR^2 values.

Contribution/Impact on Society: This study clarifies psychological capital's mediating role between entrepreneurial spirit and intentions, advancing theoretical frameworks in entrepreneurship. Practically, it suggests integrating targeted psychological capital training (e.g., resilience and optimism enhancement) into educational programs to strengthen students' entrepreneurial preparedness, aligning with national entrepreneurship policies. The findings highlight how nurturing entrepreneurial mindsets in underdeveloped areas could stimulate local ventures like cultural tourism startups, addressing regional disparities while contributing to sustainable economic growth and job creation.

Recommendations: For practitioners in entrepreneurship education, it is recommended to incorporate activities into curricular programs that cultivate entrepreneurial spirit, focusing on enhancing students' innovation, risk-taking, and perseverance, while simultaneously nurturing their psychological capital to boost confidence and resilience. Researchers are advised to further explore the complex relationships among these variables, possibly by incorporating additional factors or using more diverse samples. Moreover, future studies could investigate optimal ways to develop and integrate these constructs in educational settings.

Research Limitations: The main limitations of this study included its geographical focus on Guangxi, China, which may limit the generalizability of the findings due to China's diverse economic and cultural contexts. Additionally, the study only examined the mediating role of psychological capital, overlooking other potential mediating factors such as social networks, family support, and institutional factors. The cross-sectional nature of this study limited the understanding of temporal changes in entrepreneurial intentions and related constructs.

Future Research: Future researchers could use a larger sample by including students from different Chinese regions and diverse institutional backgrounds. They could also explore other mediating and moderating variables in the relationship between entrepreneurial spirit and entrepreneurial intentions, conduct longitudinal studies to track changes over time, and investigate the impact of different entrepreneurship educational programs on these constructs.

Keywords: *Entrepreneurial spirit, psychological capital, entrepreneurial intentions, students*

Introduction

Entrepreneurial Spirit refers to a mindset and attitude of innovation, risk-taking, adaptability, perseverance, and entrepreneurial vision; together these factors play an active role in the formation of entrepreneurial consciousness and the entrepreneurship process (Kong et al., 2020). As an important innovative force for social development, the entrepreneurial intentions of college students need to be kindled and cultivated. However, entrepreneurial spirit alone is not enough; *Psychological Capital*, as an individual psychological resource, also plays an important role in this process. Psychological capital, including optimism, resilience, hope, and self-efficacy, directly affects the entrepreneurial intentions of college students (Chen & Wang, 2017). A high level of psychological capital enhances an individual's confidence; it also enhances an individual's determination when facing entrepreneurial challenges. Thus, psychological capital increases the probability of entrepreneurial success.

Researchable Questions

1. How does entrepreneurial spirit influence college students' entrepreneurial intentions?
2. How does entrepreneurial spirit influence college students' entrepreneurial intentions through psychological capital?

Research Objectives

1. To explore the influence of entrepreneurial spirit on entrepreneurial intentions; to investigate whether a stronger entrepreneurial spirit is correlated with higher entrepreneurial intentions among students.

2. To investigate the mediating role of psychological capital; the study further delves into how psychological capital bridges or influences the relationship between entrepreneurial spirit and entrepreneurial intentions.

Literature Review

Connotation of Entrepreneurial Spirit

Entrepreneurial spirit encompasses the unique mental qualities and capabilities that empower individuals to create, innovate, and take risks. Autio et al. (2001) defined entrepreneurial spirit as the driver of innovation that propels the economy. As research in this field has advanced over time, the significance of entrepreneurial spirit has only grown more pronounced. Koh and Buttle (2022) view it as the ability to take uncertainty and risk, while Qu and Tan (2021) regard it as the ability to find and create value in opportunities. Entrepreneurial spirit includes several dimensions such as innovation, decision-making ability, risk-taking, and awareness of opportunities, which form the basis for entrepreneurial intentions.

The Effect of Entrepreneurial Spirit on Entrepreneurial Intentions

There has been much research on college students' entrepreneurial intentions and the factors that influence them. Scholars have usually studied these influencing factors separately. Entrepreneurial spirit is often researched in mature start-ups or enterprise management; the focus is mainly on organizational management, enterprise performance, and so on.

When it comes to entrepreneurial spirit and college students, research has mainly been done on entrepreneurship education. Although entrepreneurship education involves ability and skill training, entrepreneurial spirit is more about personality traits and other elements related to innate abilities and experience. Furthermore, these can't be addressed by entrepreneurship education alone (Li & Chen, 2018). So studying the relationship between entrepreneurial spirit traits and entrepreneurial intentions as a whole may further improve entrepreneurship educational systems and achieve theoretical and practical significance.

Luthans' (2002) study delved into the relationship between university-supported entrepreneurial spirit and students' entrepreneurial intentions by using questionnaires examining social background, individual attitudes, self-efficacy, and predisposition. Wei's (2019) study revealed that three external factors were barriers to entrepreneurial intentions, including a) insufficient regulations and legal protection in terms of policy, b) asymmetry of language, experience, and information in terms of socio-culture, and c) financial support, partners, and suitable employees in terms of economy. Qu and Tan (2021) believed that the spiritual power of "mass entrepreneurship and innovation" originates from entrepreneurial spirit, and that the cultivation of entrepreneurial spirit among college students is an important mechanism to promote the practice of innovation and entrepreneurship among them. Scholars Li and Chen (2018) pointed out that innovation and entrepreneurship education entail more than simply urging students to open a company and journey on the road of entrepreneurship, but are part of a human development process.

Psychological Capital

Psychological capital appreciation, which refers to a positive psychological state manifested by an individual in the process of growth and development, is a core psychological element that transcends human and social capital, and is a psychological resource that promotes personal growth and performance improvement.

Psychological capital is a concept developed by Shane and Venkataraman (2000) based on positive organizational behavior and positive psychology. They believed that psychological capital is a positive

psychological state possessed by an individual, which has the characteristics of being developable and measurable. Scholars such as Wilson et al. (2007) summarized psychological capital into four dimensions: optimism, resilience, hope, and self-efficacy. In China, Zhao and Zhang (2023) divided psychological capital into two categories from actual situations: one was transactional psychological capital, i.e., optimism and hope, resilience and tenacity, courage and self-confidence, etc.; and the other was interpersonal psychological capital, which includes tolerance and courtesy, honesty and modesty, and patience and gratitude.

The Effect of Psychological Capital on Entrepreneurial Intentions

In studies involving entrepreneurial intentions and the psychological capital of college students, Fred Luthans, an American psychologist and a founder of the psychological capital theory, has made important contributions to the concept and measurement of psychological capital (Zhao et al., 2010). His research lays a crucial theoretical foundation for understanding the impact of individual self-efficacy on entrepreneurial intentions. In the field of entrepreneurship education, the theories and practices of Luthans have had a profound impact on the cultivation of entrepreneurial spirit and entrepreneurial intentions among college students (Zhao & Zhang, 2023).

With the advent of in-depth research on college students' entrepreneurial intentions, scholars began to introduce the concept of psychological capital into business settings, and developed the concept of entrepreneurial psychological capital. Qin and Kong (2022) found that entrepreneurial psychological capital included three dimensions: positive growth, optimism and hope, and idiosyncrasy and daring. Liang and Dunn (2016) found that optimism, hope, and self-efficacy were among the psychological capital elements that demonstrated significant positive relationships with entrepreneurial team behavior.

Empirical research has confirmed that entrepreneurial spirit exerts a significant positive influence on college students' entrepreneurial intentions. Zhao and Zhang (2023), along with other scholars such as Shane and Venkataraman (2000), have pointed out that college students' entrepreneurial intentions were not only related to their external environment, but also related to their own psychological traits. Wilson et al. (2007) argued that college students' psychological capital can be tested to determine their entrepreneurial potential through the three dimensions of self-efficacy, social interaction, and positive acumen. The entrepreneurial potential of college students can be assessed to make scientific predictions, thereby guiding entrepreneurship education in colleges and universities. Scholar Wei (2019) pointed out that psychological capital not only directly affects the entrepreneurial intentions of college students, but also indirectly affects their entrepreneurial spirit by acting on their traditional economic capital, human capital, and social capital.

In summary, existing research has explored the impact of entrepreneurial spirit on entrepreneurial intentions, as well as the influence of psychological capital on entrepreneurial intentions. However, there is a lack of research specifically focusing on how entrepreneurial spirit affects entrepreneurial intentions through psychological capital. Moreover, there is also a shortage of studies in this regard that target specific college students. This represents a gap that is worthy of further exploration.

Research Framework and Hypotheses

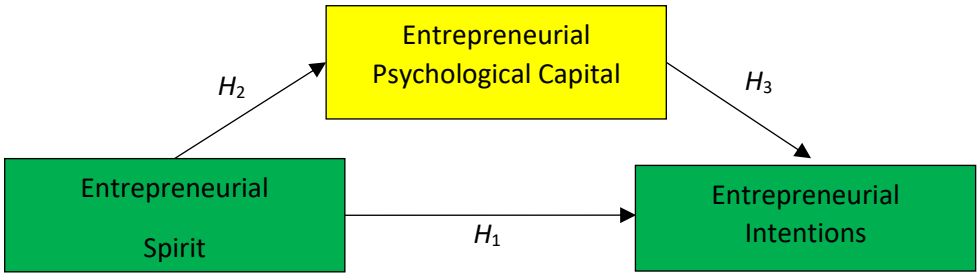
Based on the above research results, this study examined China as a case of how entrepreneurial spirit affects college students' entrepreneurial intentions through psychological capital, and analyzed whether and how psychological capital may play a role as a mediating variable in influencing how entrepreneurial spirit affects college students' entrepreneurial intentions. Therefore, the following hypotheses were proposed.

H_1: Entrepreneurial spirit positively influences the entrepreneurial intentions of college students.

H_2: Entrepreneurial spirit positively affects psychological capital.

H_3: Psychological capital plays a mediating role in how entrepreneurial spirit influences the entrepreneurial intentions of college students.

Figure 1 *Model Design*



Methodology

Research Scope

This study focused on the impact of entrepreneurial spirit on entrepreneurial intentions, and the mediating role of psychological capital in this relationship. The research subjects were college students from Guangxi Province in China. Data collection was conducted using an online questionnaire (named "Questionnaire Star"); a questionnaire link was sent to an unspecified convenience sample of college students, who freely chose whether or not to answer the survey.

Population and Sample Size

This study's subjects were college students in Guangxi Province: specifically sophomore, junior, senior, and graduate students. There are about 400,000 college students in Guangxi.

Based on the overall scale and the needs of this study, the targeted number of respondents was approximately 2,000; the final qualified sample size that was collected was 2,131.

Data Collection Instruments

According to the psychological capital measurement theory of Luthans (2002), entrepreneurial psychological capital in this study was divided into three dimensions: optimism, resilience, and hope. Four questions were drafted for each dimension, for a total of 12 questions. College students' entrepreneurial intentions were also divided into three dimensions: entrepreneurial motivation, entrepreneurial attitude, and subjective perception, with four questions for each dimension, totaling 12 questions. For entrepreneurial spirit, three dimensions were also selected: innovation ability, risk-taking, and leadership, with four questions for each dimension, totaling 12 questions. Together with five questions about respondents' basic situations, there were a total of 41 questions, all of which were scored using a 5-point Likert scale, from 1 to 5 (= *Strongly Disagree*, 2 = *Disagree*, 3 = *Average*, 4 = *Agree*, and 5 = *Strongly Agree*).

This study was carried out using a network questionnaire. The survey subjects were college students (undergraduates at the sophomore level or above) and graduate students who were enrolled in 15 universities in Guangxi, China. The survey was conducted by means of a network questionnaire (Questionnaire Star). The questionnaire was distributed anonymously. Acceptance of the survey indicated willingness to complete it. A total of 3,051 questionnaires were received, and after excluding those that did not meet the requirements, 2,131 valid questionnaires were recovered. The information obtained from this survey is shown below.

Reliability Test

Cronbach's alpha coefficient was used to measure the internal consistency reliability of the scale. A coefficient value greater than .70 is generally considered to indicate good reliability of the scale. The results for each variable may be seen in Table 1.

Table 1 *Cronbach's Alpha Test*

Variable	Cronbach's α
Psychological Capital	.894
Self-Efficacy	.754
Hope	.713
Resilience	.727
Optimism	.704
Entrepreneurial Spirit	.860
Entrepreneurial Intentions	.869

In the study of relevant dimensions, the measurement of Self-Efficacy within the Psychological Capital domain demonstrated a certain level of internal consistency, as evidenced by its Cronbach's alpha coefficient. Similarly, the dimensions of hope, resilience, and optimism also showed good reliability, with their respective coefficients falling within acceptable ranges. This implied that the measurements designed for these aspects were reliable enough to provide valid insights for further analysis. Entrepreneurial Spirit and Entrepreneurial Intentions also displayed high Cronbach's alpha coefficients, signifying a high degree of internal consistency. This indicated that the measurement methods employed for these two variables were robust and trustworthy to accurately capture the constructs they represented, thereby laying a solid foundation for subsequent research and interpretation.

Validity Check

From Table 2, it can be seen that the Kaiser–Meyer–Olkin value (KMO) was .898, which was greater than .60, meeting the prerequisite requirements for factor analysis, implying that the data could be used for factor analysis research. The data also passed Bartlett's test of sphericity ($p < .05$), which indicated that the research data was suitable for factor analysis, and the test of validity was passed.

Table 2 *Kaiser–Meyer–Olkin and Bartlett's Tests*

Kaiser–Meyer–Olkin Values		.898
Bartlett Sphericity Check	Approximate Chi-square	3098.567
	df	2129
	p-value	.000**

Note. * $p < .05$; ** $p < .01$.

Data Analysis and Interpretation

As shown in Table 3 on the following page, the descriptive statistical data about the respondents presented a diverse picture. In terms of gender, there was an imbalance as females were in the majority, which might have resulted from differences in interests or recruitment approaches that favored female participants. For class levels, seniors formed a relatively large group; they may have been more aware of the study, and also more willing to participate due to their advanced academic standing and accumulated experience. There was a good diversity of respondents due to a fairly even split between Economics/Management majors and students from other disciplines. This broadened the perspective of the research and helped avoid field of study bias.

Table 3 *Descriptive Statistical Analysis of the Respondents* (n = 2,131)

Project	Category	Number	Percent
Gender	Male	814	38.2
	Female	1,317	61.8
Class Level	Sophomores	388	18.2
	Juniors	471	22.1
	Seniors	848	39. 8
	Graduate Students	424	19.9
Field of Study	Economics and Management	961	45.1
	Non-Economics and Management	1,170	54.9
Totals	--	2,131	100

Mean Value Analysis

The mean values of the main variables are shown in Table 4, and they provide useful perspectives on differences among various groups of respondents.

Table 4 *Mean Values of Variables* (n = 2,131)

Variable	Entrepreneurial Spirit	Entrepreneurial Intentions	Psychological Capital
Overall	2.234	2.062	2.521
Sophomores	2.121	1.752	2.415
Juniors	2.245	1.942	2.496
Seniors	2.413	2.212	2.632
Graduate Students	2.132	2.243	2.621
Male	2.312	2.126	2.674
Female	2.015	1.716	2.357

When the data is examined by class levels, it's evident that there are significant variations as students make progress in their academic programs. Seniors generally displayed relatively higher levels in the aspects being measured compared to students in earlier years. This could be primarily due to the fact that as they move forward in their studies, they accumulate a wealth of knowledge and diverse experiences. They have likely been exposed to more courses, practical projects, and campus activities related to entrepreneurship or personal development, gradually enhancing their understanding and manifestation of these aspects. For instance, through participating in business plan competitions or internships during their senior year, they might have a deeper sense of entrepreneurial spirit and stronger intentions in this regard. By contrast, sophomores seemed to be at a relatively nascent stage of development in these aspects. They were still in the process of laying a foundation for their academic knowledge. They might not have had as many opportunities to engage deeply with relevant real-world applications or explore their own potential in these specific areas.

Regarding gender differences, males tended to exhibit higher levels than females across the variables. This disparity could stem from a variety of factors. Socially from an early age, boys are often encouraged to be more adventurous, take risks, and show leadership qualities in many cultures, which might align more closely with the traits associated with entrepreneurial spirit and intentions. They might also have more exposure to role models in the business world, or have been influenced by family expectations that emphasize career achievements and independence in a way that promotes development of these aspects. On the other hand, females may face different social expectations and stereotypes that sometimes limit their full exploration of and expression in these domains. However, it's important to note that these are just general trends, and individual differences within each gender can be substantial.

Analysis of Variance (ANOVA)

The ANOVA results displayed in Table 5 provide crucial insights into the analysis.

Table 5 *ANOVA (The intermediate process)*

Model	Sum of Squares	*df*	Mean Square	*F*	Sig.
Regression	94.441	2	97.241	312.121	0.000**
Residual	77.885	2129	0.142		
Total	131.345	2131			

Note. * $p < .05$; ** $p < .01$.

The data showed a highly significant value ($p < .01$), with the regression model playing an important role in explaining variations in the outcome variable (Entrepreneurial Intentions). The factors or independent variables incorporated into the model had a significant impact, and were relevant to understanding the phenomenon under study. This means that the hypothesized and modeled relationships have practical significance.

On the other hand, the residual component represented the part of the variability that the model failed to explain. Although it is inevitable that there will always be some unexplained variance in any real-world data analysis, the size of the residual sum of squares relative to the regression sum of squares indicates how well the model performs. By comparison, a smaller residual sum of squares would suggest that the model was a better fit for the data.

Relevance Analysis

Based on the analysis presented in Table 6, it's evident that there are significant relationships among the variables. There exists a substantial positive correlation between Entrepreneurial Spirit and Entrepreneurial Intentions. This means that as Entrepreneurial Spirit intensifies, Entrepreneurial Intentions tend to increase accordingly.

Likewise, a notably strong positive correlation between Psychological Capital and Entrepreneurial Intentions was also observed. This suggests that a higher level of Psychological Capital was also closely associated with stronger Entrepreneurial Intentions.

Moreover, there was a positive correlation between Psychological Capital and Entrepreneurial Spirit. Essentially, an increase in Entrepreneurial Spirit was accompanied by a rise in Psychological Capital. Overall, these correlations highlight the interconnections among these aspects and emphasize their mutual influence in the context of the research.

Table 6 *Pearson's Correlation*

Variable	Entrepreneurial Spirit	Psychological Capital	Entrepreneurial Intentions
Entrepreneurial Spirit (x)	1		
Psychological Capital (m)	.521**	1	
Entrepreneurial Intentions (y)	.697**	.805**	1

Note. * $p < .05$; ** $p < .01$.

Research Results

Regression Analysis

After the data was collated, the direct and mediating effects were tested separately first, and then the research hypotheses were tested using Stata 17 statistical software.

The Effect of Entrepreneurial Spirit and Psychological Capital on Entrepreneurial Intentions

The statistical data regarding the effect of Entrepreneurial Spirit and Psychological Capital on Entrepreneurial Intentions were as follows.

Table 7 *Effect of Entrepreneurs' Spirit and Psychological Capital on Entrepreneurial Intentions* (n = 2,131)

Independent Variable	Unstandardized Coefficient		Standardization Coefficient	*t*	Sig.	VIF	R^2	Adjusted R^2	*F*
	B	Std. Error	Beta						
Entrepreneurial Spirit (X)	.208	0.049	.345	4.231	.000**	1.589	.328	.198	*84.258*
Psychological Capital (M)	.513	0.041	.512	12.512	.000**	2.389	.414	.191	*58.415*
Dependent variable: Entrepreneurial Intentions (Y)									
D-W value: 1.857									

Note. * $p < 0.05$ ** $p < 0.01$.

The results show that the independent variable Entrepreneurial Spirit (X) had a significant positive effect ($p < .01$) on the dependent variable Entrepreneurial Intentions (Y). The Variance Inflation Factor (VIF) was 1.589, within the acceptable range, indicating no serious problem of multicollinearity.

Psychological Capital had a significant positive effect ($p < .01$) on Entrepreneurial Intentions to an even greater extent. Its VIF was 2.389, so there was no serious multicollinearity. In addition, the R^2 was .414 and the Adjusted Coefficient of Determination (Adjusted R^2) was .328, which indicated that the independent variable explained about 41.4% of variance in the dependent variable, or about 32.8% after adjustment. Thus, this model had a certain degree of explanatory ability. The D-W value was 1.857, close to 2.00, which indicated that the residuals did not have significant autocorrelation, and that the model was a good overall fit with the data. It may be concluded that both Entrepreneurial Spirit and Psychological Capital significantly and positively affected Entrepreneurial Intentions, and so H_1 was established.

The Impact of Entrepreneurial Spirit on Psychological Capital

The statistical data about the effect of Entrepreneurial Spirit on Psychological Capital was as follows.

Table 8 *Effect of Entrepreneurial Spirit on Psychological Capital* (n = 2,131)

Independent Variable	Unstandardized Coefficient		Standardized Coefficient	*t*	Sig.	VIF	R^2	Adjust R^2	*F*
	B	Std. Error	Beta						
Entrepreneurial Spirit (X)	.412	.056	.395	7.357	.000**	3.124	0.341	0.185	83.254
Mediating Variable: Psychological Capital (M)									
D-W value: 1.749									

Note. * $p < 0.05$; ** $p < 0.01$.

The results showed that the unstandardized coefficient (B) was .412 and the standard error (Std. Error) was 0.056. The standardized coefficient (Beta) was .395, which meant that each unit increase in Entrepreneurial Spirit was related to an increase in Psychological Capital of .395 units when controlling for the other variables. Thus, Entrepreneurial Spirit had a significant positive effect on Psychological Capital. The D-W value was 1.749, which was used to test whether there was autocorrelation in the residuals. It is generally considered that when this value is close to 2.00, there is no significant autocorrelation in the residuals; thus, the D-W value of the model was within the acceptable range. Statistically, the *p*-value was less than .01 ($p < .01$), indicating that this positive effect was highly significant. Thus, it was concluded that Entrepreneurial Spirit had a positive effect on Psychological Capital, and so H_2 was established.

Mediation Effect Test

In order to test the mediating effects of Psychological Capital, three models were established: *Model 1*: Entrepreneurial Spirit → Entrepreneurial Intentions; *Model 2*: Psychological Capital → Entrepreneurial Intentions; *Model 3*: Entrepreneurial Spirit → Psychological Capital → Entrepreneurial intentions. The results of regression analysis are shown in Table 9 below.

Table 9 *Regression Analysis of the Three Models* (n = 2,131)

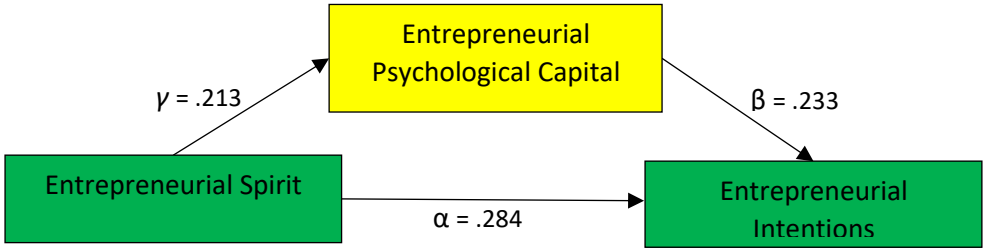
Variable	Model 1: Entrepreneurial Spirit → Entrepreneurial Intentions		Model 2: Entrepreneurial Spirit → Psychological Capital		Model 3: Entrepreneurial Spirit → Psychological Capital → Entrepreneurial Intentions	
	Beta	***p***	**Beta**	***p***	**Beta**	***p***
Entrepreneurial Spirit (X) Entrepreneurial Intentions (Y)	.345	.000**	.395	.000**	.284 .213 .233	.000** .000** .003**
t	8.457		7.125		9.215	
F	68.474		74.124		85.241	
ΔR^2	.245		.184		.302	

Table 9 Regression Analysis of the Three Models (n = 2,131) presents the different regression relationships. In Model 1, the relationship between Entrepreneurial Spirit (X) and Entrepreneurial Intentions (Y) was examined. Here, the regression coefficient showed a certain level of association, with the corresponding *p*-value, *t*-value, and *F*-value indicating the significance and strength of this relationship. The ΔR^2 value also gave an idea of the amount of variance explained by this model.

Model 2 focused on the connection between Entrepreneurial Spirit and Psychological Capital. Similar to Model 1, various statistical values, such as the regression coefficient, *p*-value, *t*-value, and *F*-value, are provided, along with the ΔR^2, which reveal the explanatory power of this relationship.

Model 3 was a mediation model, which is of particular interest. It showed the direct effect of Entrepreneurial Spirit on Entrepreneurial Intentions, as well as its indirect effect through Psychological Capital. The direct effect was significant, and the indirect effect was also significant. The total effect, calculated by adding the direct and indirect effects, showed a combined influence. The *t*-value and *F*-value again provided information about the significance and strength of the relationship. Notably, the ΔR^2 value indicated that with the inclusion of the mediating variable of Psychological Capital, the model's ability to explain the variance increased, showing that the introduction of this variable enhanced the model's explanatory power. This supported the establishment of H_3, suggesting that Entrepreneurial Spirit Affects Entrepreneurial Intentions not only directly, but also through the mediation of Psychological Capital, highlighting the complex and multifaceted nature of the relationships among these variables. Based on the analysis of the above data, the proposed model derived is shown in Figure 2.

Figure 2 *Mediation Effect Test*



Discussion

After the empirical study, it was verified that all three hypotheses were valid. For college students in Guangxi, China, Entrepreneurial Spirit had a positive effect on Entrepreneurial Intentions, and its influence coefficient was .284, which was consistent with the results of Zhao et al. (2010) and Qu and Tan (2021). Entrepreneurial Spirit positively affected Psychological Capital, and its influence coefficient was .213, which was not too different from the research results of Zhao and Zhang (2023) Psychological Capital played a mediating role in the process of Entrepreneurial Spirit affecting college students' Entrepreneurial Intentions, with an impact coefficient of .233, which was consistent with the findings of Wei (2019). Although the above research results were consistent with relevant literature, there were significant differences in the mediating factors, perhaps due to regional differences.

Conclusions, Recommendations, and Limitations

Conclusions

1. Entrepreneurial Spirit had a significant positive impact on Guangxi college students' Entrepreneurial Intentions.
2. Entrepreneurial Spirit had a significant positive impact on these students' Psychological Capital.
3. Psychological Capital played a mediating role in the positive impact of Entrepreneurial Spirit on college students' Entrepreneurial Intentions.

Recommendations

Based on an analysis of the empirical results, the researchers concluded that strengthening Entrepreneurial Spirit training would enhance college students' entrepreneurial awareness. Also, cultivating their entrepreneurial Psychological Capital and enhancing their entrepreneurial confidence would be key to enhancing their Entrepreneurial Spirit.

Strengthening Entrepreneurial Spirit Training Can Enhance Students' Entrepreneurial Awareness

This study found that Entrepreneurial Spirit had a significant positive effect on college students' Entrepreneurial Intentions. Entrepreneurial Spirit includes traits such as innovation, risk-taking, self-confidence, and persistence, which are qualities necessary for entrepreneurial success. Cultivating college students' Entrepreneurial Spirit and enhancing their level of entrepreneurial Psychological Capital can help stimulate their entrepreneurial enthusiasm and motivation. Therefore, helpful changes suggested by these results include strengthening Entrepreneurial Spirit through entrepreneurship education, and encouraging students to form innovative intentions and entrepreneurial determination through entrepreneurship practice, which would lay a solid foundation for their entrepreneurial pathways.

Cultivating Entrepreneurial Psychological Capital and Enhancing Entrepreneurial Confidence

This study also found that Psychological Capital partially mediated the relationship between students' Entrepreneurial Spirit and their Entrepreneurial Intentions. Psychological Capital refers to an individual's psychological resources, including traits such as self-efficacy, hope, resilience, and optimism. These psychological resources can help individuals cope with difficulties and challenges, and enhance their entrepreneurial confidence and resilience. Therefore, entrepreneurship education should focus on cultivating college students' entrepreneurial Psychological Capital. It should also focus on improving their self-efficacy and optimism. Moreover, it should enhance their determination and courage to face entrepreneurial risks and challenges.

Limitations and Suggestions for Further Study

This study had the following limitations and shortcomings due to various constraints, and suggested improvements in future studies include the following:

1. The sample for this study was college students in Guangxi, China. Due to the vastness of China's geographic area and differences in economic development and cultural backgrounds, these results

may not be fully representative of all Chinese college students. Therefore, future studies should expand their samples to cover more regions and different types of colleges/universities in order to improve the generalizability and representativeness of their findings.

2. This paper only examined the mediating role of Psychological Capital in the relationship between Entrepreneurial Spirit and its influence on Entrepreneurial Intentions, and did not examine other possible mediating variables. For example, factors such as social support, entrepreneurship education, and market opportunities may also play an important role in this process. Future research should expand the range of mediating variables to provide a more comprehensive understanding of the mechanisms by which Entrepreneurial Spirit may influence Entrepreneurial Intentions.

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