

Development Model of Entrepreneurial Employment in Higher Education of Southwest China

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Abstract

This study investigates the effects of entrepreneurial and employment education in higher education on students' employment competitiveness in Southwest China, with particular attention to the mediating role of self-efficacy and the moderating roles of career planning ability and innovation ability. A quantitative research design was employed, and data were collected from 400 undergraduate students using a structured questionnaire. Structural Equation Modeling (SEM) was applied to test the proposed research framework.

The results indicate that entrepreneurial and employment education has a significant positive effect on employment competitiveness ($\beta = 0.173$, $p < .001$). In addition, entrepreneurial and employment education significantly enhances students' self-efficacy ($\beta = 0.490$, $p = .008$), which in turn positively influences employment competitiveness ($\beta = 0.132$, $p < .001$). Mediation analysis using the bootstrapping method confirms that self-efficacy partially mediates the relationship between entrepreneurial and employment education and employment competitiveness (indirect effect $\beta = 0.0007$, $p = .018$). Furthermore, career planning ability and innovation ability significantly moderate the relationship between self-efficacy and employment competitiveness ($p < .05$).

The structural model explains 38.2% of the variance in employment competitiveness ($R^2 = 0.382$), indicating satisfactory explanatory power. These findings highlight the importance of integrating psychological development, career planning, and innovation-oriented learning into entrepreneurial employment education. The study contributes empirical evidence on the internal mechanisms linking educational practices and employment outcomes and provides practical implications for higher education reform in less-developed regions.

Keywords: Entrepreneurial And Employment Education, Employment Competitiveness, Self-Efficacy, Career Planning Ability, Innovation Ability, Higher Education

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Introduction

The rapid advancement of globalization and digital technology has fundamentally reshaped labor market structures and significantly increased the demand for highly skilled and adaptable talent. While emerging sectors such as the digital economy, green industries, and intelligent manufacturing continue to expand, the diffusion of artificial intelligence and automation has simultaneously displaced many traditional occupations, intensifying employment pressure on higher education graduates (Frey, C. B., & Osborne, M. A., 2017; World Bank, 2022). In China, this challenge is further exacerbated by the continuous growth in the number of higher education graduates, which has reached record highs in recent years, resulting in a widening mismatch between graduate supply and labor market demand (National Bureau of Statistics of China [NBS], 2023).

This structural imbalance is particularly pronounced in Southwest China, where economic development and industrial upgrading lag behind those of the eastern coastal regions. Although national policies actively promote (Somthawinpongchai, C. et al., 2025) employment and entrepreneurial education in higher education, regional disparities in industrial foundations, enterprise participation, and educational support systems have constrained the effectiveness of these initiatives. Many local higher education institutions continue to emphasize theoretical instruction and traditional career guidance, while insufficient attention is given to cultivating innovation ability, career planning competence, and practical entrepreneurial skills—capabilities that are critical for enhancing graduates' employment competitiveness (Liu, J. D., 2023).

Moreover, existing practices in entrepreneurial employment education face systemic challenges, including outdated curriculum design, weak university–enterprise collaboration, and limited entrepreneurial support mechanisms. Although previous studies have confirmed the positive role of innovation and entrepreneurship education in improving graduates' employability, empirical research that systematically examines the internal mechanisms linking such education to employment competitiveness in less-developed regions remains limited. In particular, the mediating roles of career planning ability and innovation ability, as well as the moderating effect of self-efficacy, have not been sufficiently explored.

Therefore, investigating entrepreneurial employment education in higher education institutions in Southwest China is of considerable theoretical and practical significance. Clarifying these mechanisms can support regional higher education reform, improve alignment between talent cultivation and local economic development, and provide evidence-based guidance for enhancing graduates' employment competitiveness.



Objective

1. To study the current situation of Entrepreneurial employment in higher education in Southwest China.
2. To create a model of Entrepreneurial employment in higher Education of Southwest China.
3. To evaluate the model of Entrepreneurial employment in higher Education of Southwest China.

Review of Literature and Ideas

Existing studies on entrepreneurial and employment education in higher education primarily emphasize its direct impact on graduates' employment outcomes, while the underlying psychological and competency-based mechanisms remain insufficiently explored. Recent research suggests that employment competitiveness is increasingly shaped by a combination of educational interventions, individual abilities, and psychological factors, particularly in regions with uneven economic development (Wei, Q. Y., 2024; Teng, S., & Du, H. B., 2023).

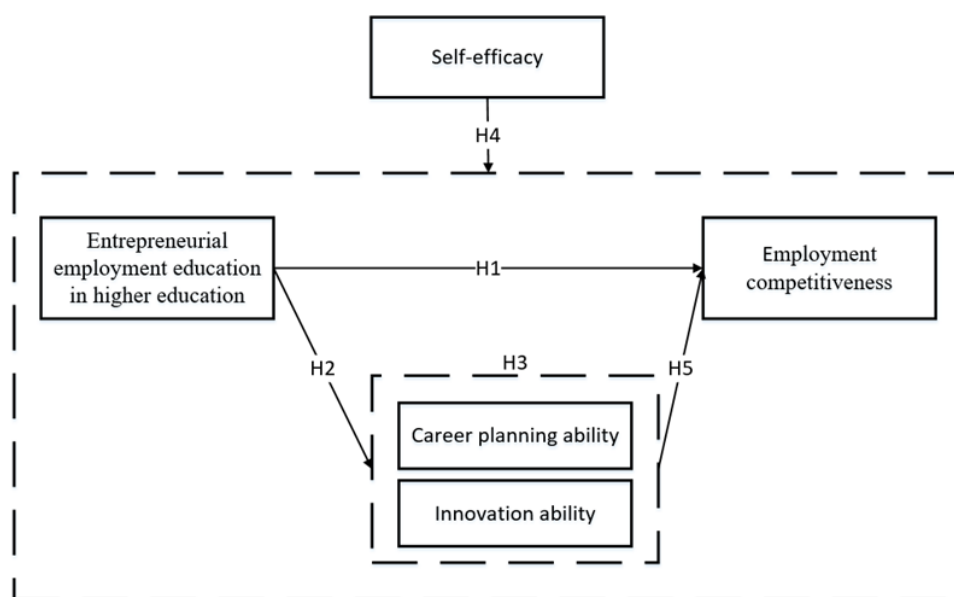


Figure 1 Conceptual Framework

Building on this literature, the present study extends the theoretical framework of entrepreneurial employment education by integrating career planning ability and innovation ability as key mediating variables, and self-efficacy as a moderating variable influencing employment competitiveness. This approach aligns with perspectives from educational psychology and career development theory, which emphasize the interaction between



individual agency and institutional support in shaping career outcomes (Yu, L., 2020; Luo, Y. Q., 2021).

Moreover, interdisciplinary studies highlight that effective entrepreneurial employment education requires close integration of education, psychology, and regional socio-economic conditions to enhance students' adaptability and innovation capacity (Zhu, S. S. et al., 2024). However, empirical evidence on these mechanisms remains limited, particularly in Southwest China. By addressing this gap, the current study provides theoretical support and empirical validation for a mechanism-based model of entrepreneurial employment education, offering a more comprehensive understanding of how higher education can enhance graduates' employment competitiveness in diverse regional contexts.

Research scope

This study examines the relationship between entrepreneurial and employment education in higher education and students' employment competitiveness, with particular emphasis on the mediating role of self-efficacy and the moderating roles of career planning ability and innovation ability. The research is conducted in Southwest China, a region facing distinctive challenges related to graduate employment and uneven economic development. The independent variable of this study is entrepreneurial and employment education in higher education, referring to educational practices designed to enhance students' entrepreneurial awareness, employability skills, and practical competencies (Kuratko, D. F., 2005; Fayolle, A., & Gailly, B., 2008). Self-efficacy is examined as the mediating variable, reflecting students' beliefs in their ability to successfully perform tasks related to career development and employment (Bandura, A., 1997; Schunk, D. H., 2012). The dependent variable is employment competitiveness, which represents graduates' capacity to secure and sustain employment in a competitive labor market (Wang, X., 2023). Career planning ability and innovation ability are included as moderating variables that influence the strength of relationships among the study variables (Savickas, M. L., 2005; Ning, 2017).

Research Methodology

This study employed a quantitative research design to examine the relationships among entrepreneurial and employment education in higher education, self-efficacy, career planning ability, innovation ability, and employment competitiveness. The proposed research framework was tested using Structural Equation Modeling (SEM) to analyze direct, mediating, and moderating effects.

The population comprised undergraduate students from higher education institutions in Southwest China, totaling 168,366 students. Based on the sample size determination table of Krejcie, R. V., & Morgan, D. W. (1970), a sample of 400 students was selected using stratified random sampling to ensure representativeness.



Data were collected through a structured questionnaire consisting of five sections measuring entrepreneurial and employment education, self-efficacy, career planning ability, innovation ability, and employment competitiveness. All items were adapted from validated instruments in previous studies and measured using a five-point Likert scale. Reliability and validity were assessed through Cronbach's alpha, composite reliability, and confirmatory factor analysis.

SEM analysis was conducted to test the research hypotheses. The bootstrapping method was applied to examine the mediating role of self-efficacy, while the moderation effects of career planning ability and innovation ability were tested through interaction analysis. Model fit was evaluated using standard goodness-of-fit indices.

Results

This study employed Structural Equation Modeling (SEM) to examine the relationships among entrepreneurial and employment education in higher education, self-efficacy, career planning ability, innovation ability, and employment competitiveness. The results are presented in alignment with the research objectives and hypotheses.

1. Direct Effects

The SEM results indicate that entrepreneurial and employment education in higher education has a significant positive effect on employment competitiveness, supporting H1. The standardized path coefficient shows a positive and statistically significant relationship ($\beta = 0.173$, $p < .001$). This result confirms that higher exposure to entrepreneurial and employment education contributes directly to stronger employment competitiveness among students.

In addition, entrepreneurial and employment education was found to have a significant positive effect on self-efficacy, supporting H2 ($\beta = 0.490$, $p = .008$). This finding suggests that entrepreneurial-oriented educational experiences enhance students' confidence in managing career-related challenges.

Furthermore, self-efficacy has a significant positive effect on employment competitiveness, supporting H3 ($\beta = 0.132$, $p < .001$). Students with higher self-efficacy tend to demonstrate stronger employability and adaptability in the labor market.

2. Mediating Effect of Self-Efficacy

The mediating role of self-efficacy was examined using the bootstrapping method. The results show that the indirect effect of entrepreneurial and employment education on employment competitiveness through self-efficacy is significant ($\beta = 0.0007$, $p = .018$; 95% CI [0.0001, 0.0013]), while the direct effect remains significant. This finding supports H4, indicating that self-efficacy partially mediates the relationship between entrepreneurial and employment education and employment competitiveness.



3. Moderating Effects of Career Planning Ability and Innovation Ability

The moderating effects of career planning ability and innovation ability were tested through interaction analysis. The results indicate that both variables significantly strengthen the relationship between self-efficacy and employment competitiveness, supporting H5. Specifically, students with higher levels of career planning ability and innovation ability are more capable of translating self-efficacy into improved employment competitiveness.

4. Model Explanatory Power

The structural model demonstrates satisfactory explanatory power. The results show that the proposed model explains 38.2% of the variance in employment competitiveness ($R^2 = 0.382$; Adjusted $R^2 = 0.379$), indicating a moderate level of predictive accuracy. This suggests that entrepreneurial and employment education, together with self-efficacy, career planning ability, and innovation ability, play a substantial role in explaining students' employment competitiveness in Southwest China.

5. Summary of Hypothesis Testing

Overall, all proposed hypotheses (H1–H5) are supported. The findings confirm that entrepreneurial and employment education enhances employment competitiveness both directly and indirectly through self-efficacy, while career planning ability and innovation ability further strengthen this relationship.

Table 1 Summary of Structural Equation Modeling (SEM) Results and Hypothesis Testing

Hypothesis	Path Relationship	β (Standardized)	p-value	Result
H1	Entrepreneurial & Employment Education $\rightarrow$ Employment Competitiveness	0.173	< .001	Supported
H2	Entrepreneurial & Employment Education $\rightarrow$ Self-Efficacy	0.490	.008	Supported
H3	Self-Efficacy $\rightarrow$ Employment Competitiveness	0.132	< .001	Supported
H4	Entrepreneurial & Employment Education $\rightarrow$ Self-Efficacy $\rightarrow$ Employment Competitiveness (Indirect Effect)	0.0007	.018	Supported
H5	Moderating Effect of Career Planning Ability & Innovation Ability	—	< .05	Supported
Model Explanatory Power		$R^2 = 0.382$		
Adjusted R^2		0.379		



Conclusion, Discussion, Suggestion

Conclusion

This study investigated the effects of entrepreneurial and employment education in higher education on students' employment competitiveness in Southwest China. The findings reveal that entrepreneurial and employment education enhances employment competitiveness both directly and indirectly through self-efficacy. Moreover, career planning ability and innovation ability strengthen the positive relationship between self-efficacy and employment competitiveness. These results highlight the importance of integrating psychological development, career planning, and innovation-oriented learning into employment education. The study contributes to a deeper understanding of the mechanisms underlying graduate employability and provides practical implications for improving entrepreneurial employment education in less-developed regions.

Discussion

This study provides empirical evidence that entrepreneurial and employment education in higher education plays a critical role in enhancing students' employment competitiveness, particularly in the context of Southwest China. The findings demonstrate that entrepreneurial and employment education exerts both direct and indirect effects on employment competitiveness, confirming its importance as a key mechanism for supporting graduates' transition into an increasingly competitive labor market.

The significant direct effect of entrepreneurial and employment education on employment competitiveness is consistent with prior research emphasizing the value of entrepreneurship-oriented curricula and experiential learning in improving students' employability skills and career readiness (Kuratko, D. F., 2005; Fayolle, A., & Gailly, B., 2008). This result supports the human capital perspective, which views education as a fundamental means of enhancing individuals' productive capacity and labor market value.

In addition, the results reveal that entrepreneurial and employment education significantly enhances students' self-efficacy, which in turn positively influences employment competitiveness. The mediating role of self-efficacy underscores the importance of psychological mechanisms in linking educational experiences to employment outcomes. This finding aligns with social cognitive theory, which posits that individuals' beliefs in their own abilities strongly influence motivation, persistence, and performance (Bandura, A., 1997). Previous studies have similarly found that higher self-efficacy is associated with stronger career confidence and more proactive job-search behavior among college students (Schunk, D. H., 2012).

The moderating effects of career planning ability and innovation ability further indicate that the relationship between self-efficacy and employment competitiveness is strengthened when students possess higher levels of career adaptability and innovative competence. This supports career construction theory, which emphasizes proactive career planning as a key



resource for navigating complex and uncertain labor markets (Savickas, M. L., 2005). Moreover, innovation ability enables graduates to respond flexibly to changing job demands, thereby enhancing their competitiveness in emerging industries (Ning, Y., 2017).

From a regional perspective, the findings highlight the structural challenges faced by higher education institutions in Southwest China. Despite strong policy support for entrepreneurial employment education at the national level, disparities in industrial development and educational resources limit the effectiveness of such initiatives. The results suggest that improving employment competitiveness requires not only institutional reform but also systematic cultivation of students' psychological and competency-based capacities. This observation is consistent with prior research calling for context-sensitive and regionally adapted approaches to entrepreneurial education (Liu, J. D., 2023).

Overall, this study extends existing literature by clarifying the internal mechanisms through which entrepreneurial and employment education influences employment competitiveness. By integrating educational, psychological, and career development perspectives, the findings contribute to a more comprehensive understanding of how higher education institutions can better support graduate employability in less-developed regions.

Suggestion

Based on the empirical findings of this study, several recommendations are proposed to enhance the effectiveness of entrepreneurial and employment education in higher education, particularly in Southwest China.

First, higher education institutions should strengthen the integration of entrepreneurial and employment education with psychological development, especially by systematically fostering students' self-efficacy. Curriculum design should incorporate experiential learning, project-based activities, and real-world problem-solving opportunities to enhance students' confidence in their career-related abilities. Prior studies indicate that self-efficacy plays a crucial role in shaping students' motivation, persistence, and employability outcomes (Bandura, A., 1997; Schunk, D. H., 2012).

Second, universities should embed career planning education throughout the entire learning process rather than limiting it to short-term career guidance courses. Structured career planning modules, mentoring systems, and individualized career counseling can help students better understand labor market demands and align their competencies with career goals. This approach is consistent with career construction theory, which emphasizes proactive career adaptability as a key factor in employability (Savickas, M. L., 2005).

Third, higher education institutions are encouraged to enhance innovation-oriented learning and interdisciplinary training. By integrating innovation education with professional courses and encouraging participation in entrepreneurial competitions, internships, and collaborative projects, universities can improve students' innovation ability and practical skills.



Such initiatives are essential for preparing graduates to adapt to rapidly changing labor market conditions (Kuratko, D. F., 2005; Ning, Y., 2017).

Fourth, policymakers and education authorities should optimize policy support and resource allocation for entrepreneurial employment education in less-developed regions. Increasing financial investment, strengthening university–enterprise collaboration, and building regional innovation and entrepreneurship platforms can help (Somthawinpongsai, C. et al., 2025). reduce disparities between regions and improve graduates’ employment competitiveness. Previous research suggests that close alignment between education systems and regional economic development is critical for sustainable talent cultivation (Liu, J. D., 2023).

Finally, future research should expand the scope of investigation by adopting longitudinal designs or comparative studies across different regions to further examine the dynamic mechanisms through which entrepreneurial and employment education influences employment competitiveness. Such efforts would contribute to a more comprehensive understanding of graduate employability and support evidence-based educational reform.

Knowledge of Research

This study advances knowledge in the field of entrepreneurial and employment education in higher education by revealing the internal mechanisms through which such education enhances students’ employment competitiveness. The findings demonstrate that entrepreneurial and employment education influences employment outcomes not only through skill development but also through psychological factors, particularly self-efficacy. In addition, the study highlights the importance of career planning ability and innovation ability in strengthening the effect of self-efficacy on employment competitiveness, thereby extending existing theories of employability and career development. By focusing on higher education institutions in Southwest China, this research provides context-specific insights into how regional conditions shape the effectiveness of entrepreneurial employment education. Overall, the study contributes an integrated theoretical and empirical perspective that supports more effective educational practices and offers a foundation for future research on graduate employability in diverse regional contexts.

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