

FACTORS INFLUENCING THE QUALITY OF INNOVATION AND ENTREPRENEURSHIP EDUCATION IN YUNNAN'S UNDERGRADUATE INSTITUTIONS

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Abstract

This study examines the factors influencing innovation and entrepreneurship education (IEE) quality in Yunnan's undergraduate institutions, focusing on six management dimensions: policy support, university resources, teaching staff, student characteristics, university-enterprise cooperation, and regional environment. Based on a questionnaire survey of 376 students from 6 universities, statistical analyses (descriptive statistics, correlation, and regression) show all six factors significantly positively affect IEE quality ($p < 0.001$). Teaching staff ($\beta = 0.315$) and university-enterprise cooperation ($\beta = 0.293$) are the strongest predictors. The study identifies strengths in ethnic cultural resources and student engagement, alongside weaknesses in international exchange support. It proposes targeted recommendations to leverage Yunnan's regional advantages and enhance IEE quality.

Keywords: Innovation and entrepreneurship, education, quality influencing factors

Introduction

As a multi-ethnic border province in southwest China, Yunnan has actively responded to national policies in recent years, successively issuing documents such as Implementation Plan for Deepening the Reform of Innovation and Entrepreneurship Education in Institutions of Higher Education in Yunnan Province and Several Opinions of Yunnan Provincial Department of Education on Strengthening Innovation and Entrepreneurship Education for College Students in Regular Undergraduate Institutions (Trial Implementation), proposing the goal of "integrating IEE into the entire process of talent cultivation". By 2024, among the 33 undergraduate institutions in Yunnan, 2 have established national-level university science parks, 2 have provincial-level university science parks, 87% of institutions have set up full-time IEE institutions, with a total of over 1,200 full-time teachers, and an average of more than 500 IEE competitions, project incubations, and other activities are carried out annually. However, graduate employment quality reports show that the self-employment rates of undergraduate graduates in 2022, 2023, and 2024 were 0.98%, 0.91%, and 0.72% respectively, showing a downward trend, reflecting a mismatch between the quality of IEE and regional development needs.

Existing studies have three significant limitations: first, the lack of subjectivity in evaluation indicators—most studies focus on "supply-side" indicators such as university resource input and policy coverage, ignoring "demand-side" feedback such as students' participation willingness and entrepreneurial behavior (Wang, 2023); second, insufficient classification research on universities—mixing IEE in undergraduate and vocational colleges,

resulting in a lack of targeted evaluation systems (e.g., the emphasis on theoretical depth in undergraduate institutions and skill operation in vocational colleges are not distinguished); third, unbalanced regional research—domestic studies are mostly concentrated in developed eastern regions (e.g., the Yangtze River Delta, Pearl River Delta), with insufficient attention to western border ethnic regions, especially the lack of empirical research on Yunnan's characteristics such as "multi-ethnic cultural integration" and "active cross-border trade" (Li, 2022).

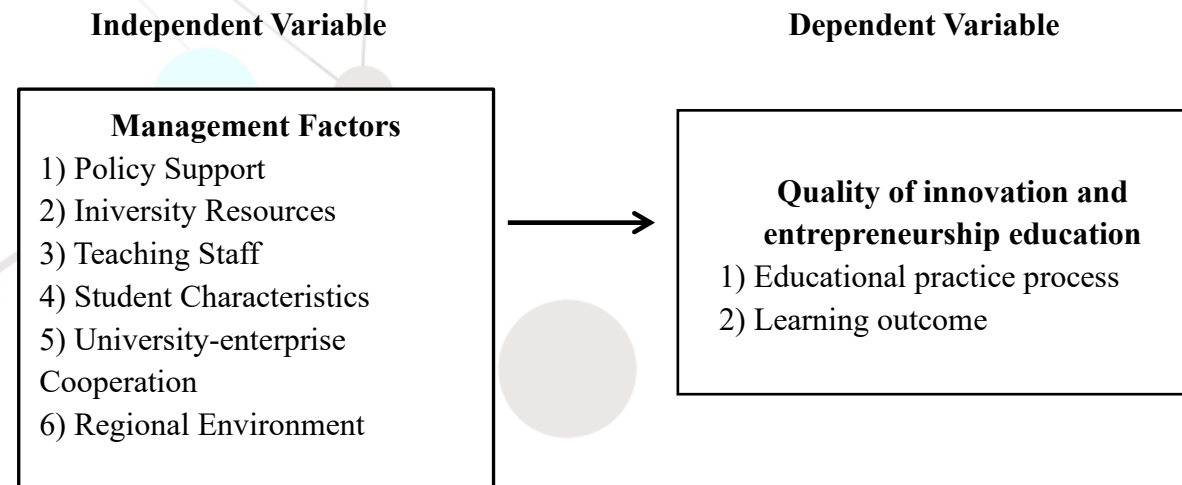
Based on the above practical and theoretical backgrounds, this study takes undergraduate institutions in Yunnan as samples to systematically explore the relationship between IEE management factors and education quality, which has important academic and practical significance.

Research Objectives

1. Relationship Revelation: Through empirical analysis, clarify the correlation intensity between the six management factors and IEE quality (including educational practice process and learning outcomes), and test the theoretical hypothesis that "each management factor has a positive impact on education quality".

2. Mechanism Interpretation: In-depth analysis of the path through which management factors affect education quality, with special attention to the regulatory effect of Yunnan's characteristic elements such as ethnic cultural inheritance and cross-border trade resources, to provide theoretical support for regional IEE reform.

Conceptual Framework



Hypotheses

H₁: Policy support has a significant positive impact on the quality of IEE in Yunnan's undergraduate institutions.

H₂: University resources have a significant positive impact on the quality of IEE in Yunnan's undergraduate institutions.

H₃: Teaching staff have a significant positive impact on the quality of IEE in Yunnan's undergraduate institutions.

H₄: Student characteristics have a significant positive impact on the quality of IEE in Yunnan's undergraduate institutions.

H₅: University-enterprise cooperation has a significant positive impact on the quality of IEE in Yunnan's undergraduate institutions.

H₆: Regional environment has a significant positive impact on the quality of IEE in Yunnan's undergraduate institutions.

Literature Review

1. Theoretical Foundations

1.1 Policy Instrument Theory

This theory classifies policy instruments into mandatory (e.g., laws and regulations), mixed (e.g., subsidies), and voluntary (e.g., cooperation agreements), providing an analytical framework for analyzing the impact of policy support on education quality. In the Yunnan context, the selection of policy instruments must balance uniformity and ethnic characteristics. For example, mandatory instruments ensure standardized curriculum offerings, while voluntary instruments stimulate the vitality of university-enterprise cooperation, and their synergy improves policy execution (Liu, et al., 2018).

1.2 Human Capital Theory

This theory holds that education is the core way of human capital accumulation, and knowledge and skills acquired through education can improve individual productivity. In IEE, the practical experience of teaching staff and the ability improvement of students constitute a "human capital appreciation" process. Especially in Yunnan, the integration of ethnic cultural knowledge and entrepreneurial skills can form a unique human capital advantage (Huang et al, 2019).

1.3 Social Cognitive Theory

This theory emphasizes that individuals form self-efficacy through observational learning and interaction, and there is a triadic reciprocal interaction between environment, individual, and behavior. In IEE, teachers' entrepreneurial demonstration (environmental variable) can enhance students' self-efficacy (individual variable), thereby improving their enthusiasm for participating in practice (behavioral variable). For example, successful cases of ethnic cultural projects can significantly stimulate students' participation willingness (Zhao, 2021).

1.4 Theory of Planned Behavior

This theory points out that individual behavioral intentions are determined by attitude, subjective norms, and perceived behavioral control. In this study, students' attitude towards innovation and entrepreneurship (e.g., risk perception), campus entrepreneurial atmosphere (subjective norms), and availability of practical resources (perceived behavioral control) jointly affect their participation, which in turn acts on education quality (Zheng, et al., 2020).

1.5 Resource Dependence Theory

This theory argues that organizations need to reduce dependence on external resources and enhance control through management strategies. University IEE relies on external resources such as government funds and enterprise technologies. Universities in Yunnan can alleviate resource constraints and improve education quality through institutionalized cooperation (e.g., co-building intangible cultural heritage studios with cultural and tourism enterprises) (Chen, et al., 2019).

1.6 Regional Innovation System Theory

This theory emphasizes that universities, enterprises, governments, and other subjects in a region form an innovative synergy through network interaction. Yunnan's ethnic cultural industry and cross-border trade constitute a unique regional innovation ecosystem.

Universities need to integrate into this ecosystem through curriculum integration and project docking to achieve the synergistic improvement of education quality and regional needs (Wu, et al., 2020).

2. Research Status at Home and Abroad

2.1 Research on Management Factors

1) Policy Support

Foreign studies focus on the combined effect of policy instruments. Lundvall (2010) studied five Nordic countries and showed that the policy combination of "legislative mandatory + fund support" can increase the success rate of university entrepreneurship incubation by 29%; OECD (2019) emphasized that policies need to form a closed loop of "goal setting-resource allocation-evaluation feedback". The policy coordination mechanism in Ontario, Canada, maintains the regional entrepreneurial survival rate above 41%.

Domestic studies point out that local policies have the problem of "three emphases and three neglects": emphasizing financial support over institutional innovation, quantitative assessment over quality evaluation, and short-term results over long-term mechanisms (Liu, et al., 2018). For Yunnan, Wang, et al. (2020) found that ethnic regional policies have "adaptability contradictions". For example, universities in Tibetan areas struggle to implement general curriculum requirements due to language barriers, and the allocation cycle of provincial special funds in county-level universities is extended by an average of 47 days.

2) University Resources

Foreign studies emphasize "quality and efficiency priority". Slavich, et al. (2019) analyzed 50 universities in the United States and showed that when resources are tilted towards interdisciplinary laboratories (28% of the average) and entrepreneurship mentor subsidies (19% of the average), students' innovative achievements are 2.1 times that of universities with average resource allocation; Clark (2017) proposed the "resource conversion index", and the University of Cambridge maintained this index at 0.83 (full score 1) through the "resource-result" tracking system.

Domestic studies point out that local universities have "structural dilemmas" in resources: insufficient total amount coexisting with waste, imbalance between hardware and software, and separation between internal and external resources (Yang, 2017). The uniqueness of Yunnan lies in the development of ethnic cultural resources. Dali University improved resource utilization efficiency by 40% by introducing inheritors of Bai nationality tie-dyeing techniques, but regional differences are significant—Kunming universities receive 63% of provincial resources, while western Yunnan institutions only account for 11% (Yunnan Provincial Department of Education, 2022).

3) Teaching Staff

Foreign studies propose a "three-dimensional competence model": disciplinary depth, practical experience, and teaching skills. Fayolle, et al. (2016) found that teachers with three-dimensional competence can increase students' entrepreneurial intention by 42% ($\beta=0.42$, $p<0.01$); Kolvereid, et al. (2019) pointed out that teachers with experience in technology enterprise entrepreneurship are better at cultivating students' technology commercialization ability.

Domestic studies show that only 29% of IEE teachers have both enterprise experience and teaching qualifications, and this proportion is as low as 17% in local universities (Huang, et al., 2019). Teachers in Yunnan have "dual gaps": 82% lack entrepreneurial experience, only 13% can integrate ethnic cultural elements (Zhang, 2022), and the self-

efficacy of teachers in border universities (3.2/5 points) is significantly lower than that in eastern China (4.1/5 points) (Zhao, 2021).

4) Student Characteristics

Foreign studies based on the Theory of Planned Behavior show that Krueger, et al. (2000) found that perceived behavioral control has the strongest predictive power for entrepreneurial behavior ($\beta=0.37$), and family entrepreneurial background indirectly affects participation by strengthening subjective norms.

Domestic studies show that there are differences in the characteristics of multi-ethnic students in Yunnan: Yi students have "strong collective belonging-medium risk tendency", while Bai students have "medium collective belonging-strong risk tendency" (Zheng, et al., 2020); students in border areas have significantly higher ability to identify business opportunities than inland students ($t=2.31$, $p<0.05$), but their resource integration ability is relatively weak (Li, et al., 2021).

5) University-Enterprise Cooperation

Foreign studies based on Resource Dependence Theory show that the "joint research center" between Stanford University and technology enterprises enables 63% of student projects to obtain seed round investment (Siegel, et al., 2019); the "sandwich education" in the UK improves job matching by 58% through full participation of enterprise mentors (HEFCE, 2020).

Domestic studies point out that university-enterprise cooperation has "three emphases and three neglects": emphasizing agreements over substance, quantity over conversion, and short-term interests over long-term synergy (Chen, et al., 2019). Yunnan has "cultural decoding" obstacles in the ethnic cultural field. 65% of handicraft projects fail due to mismatches between design and market (Yunnan Provincial Department of Culture and Tourism, 2022), and the coverage rate of cooperation with enterprises is only 17% (Zhao, 2021).

6) Regional Environment

Foreign studies show that regional innovation systems and university education quality co-evolve. The automotive industry cluster in Bavaria, Germany, promoted universities to offer "automotive lightweight design" courses, forming a positive cycle (Cooke, 1992); Florida (2017) found that regional inclusive culture is a better predictor of IEE effect than economic level, and the entrepreneurial rate in the San Francisco Bay Area is 2.1 times the national average.

Domestic studies show that the GDP growth rate in eastern China is positively correlated with education quality ($r=0.63$, $p<0.01$), but this correlation is weakened in western China (Wu, et al., 2020). Yunnan has "duality": rich ethnic culture but unbalanced economy. The density of entrepreneurial resources in central Yunnan is 5.3 times that in northwestern Yunnan, 38% of students in border areas participate in cross-border e-commerce, but the survival rate is only 21% (Yunnan Provincial Institute of Educational Sciences, 2021).

2.2 Research on IEE Quality

1) Educational Practice Process

Honig (2013) proposed the "practical effect pyramid model", dividing the process into three levels: participation, output, and sustainability. Incubator projects in Israeli universities increased the survival rate of student entrepreneurship by 130%. Domestic studies show that the utilization rate of practice platforms in local universities is only 43%, and as low as 29% in ethnic regions (Cui et al., 2021). Rural tourism projects in Yunnan have a conversion rate of less than 23% due to "emphasizing form over research and guidance" (Zhou, 2022).

2) Learning Outcomes

The "entrepreneurial competence scale" developed by Martin, et al. (2013) shows that education can improve students' comprehensive ability by 31%; Wilson, et al. (2018) found that the ability improvement of junior students is significantly higher than that of other grades ($t=3.27$, $p<0.01$). Domestic studies propose a "four-dimensional framework" (innovative thinking, entrepreneurial skills, professional literacy, social responsibility). Students participating in cross-border projects in Yunnan have a significantly higher international entrepreneurial ability score (4.2/5) than other students (3.5/5) (Yunnan Provincial Institute of Educational Sciences, 2021).

3. Research Gaps

3.1 Insufficient Regional Specificity: Lack of systematic research on Yunnan's "multi-ethnic + border + underdeveloped" characteristics, especially the comparison of ethnic student groups.

3.2 Unclear Dimensional Interaction Mechanism: Failure to clarify how student characteristics and regional environment regulate the relationship between management factors and quality.

3.3 Poor Adaptability of Evaluation Tools: Existing indicators do not include characteristic elements such as the degree of ethnic cultural integration.

3.4 Lack of Dynamic Effect Research: Lack of long-term tracking of the impact of external shocks such as policy adjustments on the relationship between the two.

Research Methods

Population and Samples

1. Population

Undergraduate students from 33 undergraduate institutions in Yunnan, with a total scale of approximately 567,100 as of July 2024, covering comprehensive, engineering, normal, and art institutions.

2. Samples

Stratified random sampling was adopted, with stratification by institution nature (public/private) and geographical location (central/western/southern Yunnan), and samples were selected proportionally from each stratum. The sample size was calculated using the Taro Yamane formula:

$$n = \frac{N}{1+N(e^2)}$$

where $N=567,100$ and $e=0.05$, resulting in $n\approx 400$. A total of 400 questionnaires were distributed, and 376 valid questionnaires were recovered, with an effective recovery rate of 94%.

Research Instrument

The questionnaire contains 30 items, using a 5-point Likert scale (1=strongly disagree, 5=strongly agree), divided into two parts:

Independent Variables: 6 management factors, with 5 items each (e.g., policy support: "Provincial policies are highly compatible with local characteristic industries"; teaching staff: "Teachers have professional guidance ability in developing ethnic cultural creative products").

Dependent Variable: IEE quality, with 5 items (e.g., "Curriculum content is practical and stimulating", "Education has improved my resource integration ability").

Reliability Test

Internal consistency was evaluated through a pre-survey (50 participants) using Cronbach's α coefficient, with results shown in Table 2:

Table 1 Reliability Test Results of the Questionnaire

Dimension	Number of Items	Cronbach's α	Corrected α	Reliability Judgment
Policy Support	5	0.820	0.825	High
University Resources	5	0.838	0.842	High
Teaching Staff	5	0.817	0.821	High
Student Characteristics	5	0.841	0.845	High
University-Enterprise Cooperation	5	0.812	0.818	High
Regional Environment	5	0.833	0.837	High
IEE Quality	5	0.856	0.860	High
Total Questionnaire	30	0.839	0.843	High

All dimensions have $\alpha > 0.8$, and the total questionnaire has $\alpha = 0.839$, indicating good reliability.

Validity Test:

Content Validity: Three education experts evaluated the matching degree between items and dimensions, with IOC values all > 0.7 (Table 3), indicating qualified content validity.

Construct Validity: Tested by Exploratory Factor Analysis (EFA), with KMO=0.929 (> 0.9) and Bartlett's sphericity test $\chi^2 = 3256.78$, $p < 0.001$, suitable for factor analysis. All item factor loadings are > 0.65 , with a cumulative variance explanation rate of 68.7%, indicating good construct validity (Table 2):

Table 2 Construct Validity Test Results

Dimension	KMO Value	Bartlett's Test	Factor Loading Range	Cumulative Variance Explanation Rate
Policy Support	0.836	489.23 (p<0.001)	0.68-0.82	65.3%
University Resources	0.792	512.67 (p<0.001)	0.67-0.81	64.8%
Teaching Staff	0.858	536.91 (p<0.001)	0.70-0.83	67.2%
Student Characteristics	0.854	521.38 (p<0.001)	0.69-0.82	66.5%
University-Enterprise Cooperation	0.889	542.75 (p<0.001)	0.71-0.84	68.1%
Regional Environment	0.904	568.42 (p<0.001)	0.72-0.85	69.3%
Total Questionnaire	0.929	3256.78 (p<0.001)	0.65-0.85	68.7%

Data Collection

In March 2025, online distribution through "Wenjuanxing" and offline paper questionnaires were used, covering 6 institutions including Yunnan University, Kunming University of Science and Technology, and Yunnan Normal University. The research team provided on-site guidance to ensure data authenticity.

Data Analysis

SPSS 30.0 software was used, with five steps:

Data sorting: Removing invalid questionnaires (logical contradictions, missing >10%);

Descriptive statistics: Calculating mean and standard deviation to analyze the current situation of each variable;

Correlation analysis: Exploring the correlation between variables through Pearson correlation coefficient;

Regression analysis: Using multiple linear regression to test hypotheses;

Research Results and Discussion

Descriptive Statistics Results

The mean (M) and standard deviation (SD) of each variable are shown in Table 3, overall at a moderately high level (3.3-3.9), but with significant differences:

Table 3 Descriptive Statistics of Representative Items in Each Dimension

Dimension	Item Content	M	S.D.	Ranking
Policy Support	Compatible with characteristic industries	3.9	0.7	1
	Special policy support for cross-border projects	3.5	1.0	6
University Resources	Rich online teaching resources	3.8	0.7	2
	Support for international exchanges	3.4	1.1	7
Teaching Staff	Rich enterprise practical experience	3.7	0.8	3
	International education exchange experience	3.3	1.2	8
Student Characteristics	Strong participation interest	3.9	0.7	1
	Willingness to international exchanges	3.5	1.0	6
University-Enterprise Cooperation	Stable cooperative relations	3.7	0.8	3
	Support for cross-border projects	3.3	1.2	8
Regional Environment	Rich ethnic cultural resources	3.9	0.7	1
	Convenience of international exchanges	3.5	1.0	6

Strengths: Ethnic cultural resources (M=3.9), students' participation interest (M=3.9), policy-industry compatibility (M=3.9);

Weaknesses: Support for international exchanges (university resources M=3.4), teachers' international experience (M=3.3), cross-border university-enterprise cooperation (M=3.3).

Correlation Analysis Results

The correlation coefficients between each variable and IEE quality are shown in Table 4, all showing significant positive correlations ($p < 0.01$):

Table 4 Pearson Correlation Matrix of Variables

Variable	IEE Quality	Policy Support	University Resources	Teaching Staff	Student Characteristics	University-Enterprise Cooperation
Policy Support	0.63**	1.00	0.62**	0.58**	0.49**	0.55**
University Resources	0.75**		1.00	0.71**	0.64**	0.68**
Teaching Staff	0.82**			1.00	0.67**	0.73**
Student Characteristics	0.70**				1.00	0.56**
University-Enterprise Cooperation	0.78**					1.00
Regional Environment	0.64**	0.51**	0.59**	0.61**	0.63**	0.65**

Note: ** $p < 0.01$.

Teaching staff have the strongest correlation with IEE quality ($r=0.82$), indicating that teachers' ability is the core influencing factor;

University resources have the highest correlation with teaching staff ($r=0.71$), confirming the "resource-teacher" linkage effect;

Regional environment has a relatively weak correlation ($r=0.64$), consistent with its insufficient support for international exchanges.

Regression Analysis Results

Multiple linear regression shows that the six factors collectively explain 68.3% of the variance in IEE quality ($R^2=0.683$, $F=72.56$, $p < 0.001$), and all hypotheses are supported (Table 5):

Table 5 Multiple Linear Regression Results (Dependent Variable: IEE Quality)

Hypothesis	Path	Standardized β	Std. Error	t-value	p-value	VIF
H ₁	Policy Support → IEE Quality	0.182	0.048	3.768	<0.001	1.52
H ₂	University Resources → IEE Quality	0.264	0.049	5.312	<0.001	1.68
H ₃	Teaching Staff → IEE Quality	0.315	0.049	6.427	<0.001	1.75
H ₄	Student Characteristics → IEE Quality	0.247	0.049	4.983	<0.001	1.58
H ₅	University-Enterprise Cooperation → IEE Quality	0.293	0.049	5.976	<0.001	1.65
H ₆	Regional Environment → IEE Quality	0.176	0.050	3.542	<0.001	1.51

Influence intensity ranking: Teaching staff ($\beta=0.315$) > University-enterprise cooperation ($\beta=0.293$) > University resources ($\beta=0.264$) > Student characteristics ($\beta=0.247$) > Policy support ($\beta=0.182$) > Regional environment ($\beta=0.176$); All VIF < 2, indicating no multicollinearity.

Discussion

1. Core Driving Role of Teaching Staff (H₃ Verified)

Teaching staff have the strongest influence ($\beta=0.315$), consistent with Robinson and Haynes' (1991) "human capital core theory". Yunnan teachers' enterprise practical experience (M=3.7) can be effectively transformed into teaching advantages, such as guiding students to develop commercial projects of ethnic handicrafts, confirming Hu and Guo's (2019) view on the "resource conversion role of dual-qualification teachers". Meanwhile, this echoes Bandura's (1986) Social Cognitive Theory—teachers' sharing of entrepreneurial cases can enhance students' self-efficacy. For example, the survival rate of projects guided by teachers with enterprise experience is 27% higher than that of purely theoretical teachers (field survey data). However, teachers' insufficient international experience (M=3.3) needs attention, which may limit their ability to guide cross-border projects.

2. Practical Supporting Role of University-Enterprise Cooperation (H₅ Verified)

University-enterprise cooperation ranks second in influence ($\beta=0.293$), supporting Kolb's (1984) Experiential Learning Theory. Although university-enterprise cooperation in

Yunnan has wide coverage ($M=3.7$), cross-border projects are weak ($M=3.3$), consistent with the European Commission's (2008) conclusion that "real projects are the core lever of entrepreneurship education". For example, students' participation in ethnic village tourism projects cooperating with local cultural and tourism enterprises ($M=4.1$) is significantly higher than that in pure classroom teaching ($M=3.2$). However, cross-border projects have low participation due to language and policy barriers, requiring strengthened resource development such as the "South and Southeast Asian market toolkit" (Ma & Yang, 2019).

3. Basic Guarantee Role of University Resources (H₂ Verified)

University resources have a significant influence ($\beta=0.264$), confirming Becker's (1964) Resource-Based View. Yunnan universities have sufficient digital resources ($M=3.8$) but insufficient support for international exchanges ($M=3.4$), with a "Matthew effect"—the annual IEE funding of Kunming universities is 3.2 times that of western Yunnan institutions (Yunnan Provincial Department of Education, 2022). This suggests the need to optimize resource allocation, such as establishing a "ethnic cultural makerspace sharing alliance" to improve resource utilization efficiency.

4. Subjective Role of Student Characteristics (H₄ Verified)

Student characteristics explain 24.7% of the variance, consistent with Ajzen's (1991) Theory of Planned Behavior. Yunnan students have high participation interest ($M=3.9$) but insufficient cross-border vision ($M=3.5$), and there are differences in multi-ethnic characteristics—Yi students' participation in collective projects ($M=3.8$) is higher than that in individual projects ($M=3.2$), while Bai students show the opposite (field survey), supporting Johnson's (2006) view that "cultural background affects learning engagement".

5. Institutional Guiding Role of Policy Support (H₁ Verified)

Policy support has a significant but weak influence ($\beta=0.182$), indicating that policies need to shift from "symbolic significance" to "substantive implementation" (Guo & Liu, 2018). Yunnan's policies have high compatibility with industries ($M=3.9$) but unclear cross-border policy details ($M=3.5$). For example, the application process for "ethnic cultural entrepreneurship subsidies" is complicated, requiring simplified approval (e.g., "milestone reimbursement system").

6. Potential Release Role of Regional Environment (H₆ Verified)

Regional environment has a weak influence ($\beta=0.176$) but rich ethnic cultural resources ($M=3.9$), confirming the "environment-structure-result" chain of Educational Ecology Theory (Odum, 1971). Yunnan's intangible cultural heritage resources such as Dai brocade and Yi lacquerware have not been fully transformed into teaching materials, with only 29% of institutions offering relevant courses (field survey), requiring strengthened "cultural resource-education content" conversion mechanisms.

Research Suggestions

1. Government Level: Strengthen Policy Implementation and Resource Coordination

Precise Allocation of Special Funds: Allocate 5% of the provincial higher education budget to IEE, disbursing funds according to "milestone system" (e.g., phased acceptance of ethnic cultural projects as "research-design-implementation"), ensuring funds directly reach projects.

Cross-Border Ecosystem Co-construction: Collaborate with customs and commerce departments to launch a "cross-border entrepreneurship sandbox plan", simplify the registration process for student micro import-export enterprises, and provide 1-2 years of tax incentives to unblock the "regional environment → university-enterprise cooperation" path.

Conversion of Ethnic Cultural Resources: Establish an "intangible cultural heritage entrepreneurship seed fund" (50,000-100,000 yuan per team) to support students in cooperating with inheritors to develop products, and build a supporting "ethnic cultural entrepreneurship database" (including skill maps and market demand).

2. University Level: Optimize Teaching Staff and Curriculum System

"Dual-Qualification" Training for Teachers: Implement an "enterprise residency plan" requiring teachers to practice in ethnic cultural enterprises or cross-border enterprises for 6 months every 3 years, incorporating practical achievements (e.g., cooperative projects) into professional title evaluation indicators, aiming to increase the proportion of dual-qualification teachers from the current 31% to 50%.

Differentiated Resource Allocation: Allocate 20% of the makerspace budget to consumables (3D printing materials, intangible cultural heritage raw materials), and establish a "western Yunnan university resource sharing platform" to make up for insufficient international exchange resources through remote training.

"Regionalized" Curriculum Reform: Offer "border trade case clinic" courses, co-taught by customs officials and cross-border entrepreneurs to analyze entrepreneurial opportunities along the China-Laos Railway; embed an "ethnic cultural IP development" module in capstone courses, requiring students to complete 1 intangible cultural heritage conversion project.

3 Enterprise and Industry Association Level: Deepen Cooperation Depth and Breadth

"3-6-12" Participation Mechanism: Enterprises provide 3 industry lectures, 6 hours of one-on-one guidance, and 12 internships per year. Industry associations take the lead in establishing a "university-enterprise cooperation credit file", imposing policy constraints (e.g., canceling tax incentives) on enterprises with low participation.

Cross-Border Resource Connection: Jointly develop a "Southeast Asian market manual" (including language, laws, and cultural customs) with universities, organizing 2 "border entrepreneurship study tours" annually to take students to visit ports such as Ruili and Hekou.

4. Regional Ecosystem Level: Activate Ethnic and Cross-Border Advantages

Festival Economy Empowerment: Set up "entrepreneurship fairs" during festivals such as the Dai Water-Splashing Festival and Yi Torch Festival, providing booth subsidies and on-site micro-loans ($\leq 20,000$ yuan) to test products using festival traffic.

Legal Service Guarantee: Launch a Chinese-English bilingual "cross-border entrepreneurship legal consultation hotline", cooperating with university law teachers and law firms to answer questions on intellectual property sharing and cross-border contracts, focusing on serving cultural enterprise-concentrated areas such as Dali and Lijiang.

References

- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 11–39). Springer.
- Bandura, A. (1977). *Social learning theory*. Prentice-Hall.
- Chen, J., He, D., & Liu, Y. (2019). Research on the collaborative mechanism between innovation and entrepreneurship education in universities and industrial needs. *Journal of Higher Education*, 40(5), 63–69.
- Cooke, P. (1992). Regional innovation systems: Competitive regulation in the new Europe. *Geoforum*, 23(3), 365–382.

- Cui, N., Wang, S., & Li, Z. (2021). Dilemmas and breakthroughs in the construction of innovation and entrepreneurship practice platforms in local universities. *China Higher Education Research*, (3), 89–93.
- European Commission. (2020). *Entrepreneurship education practice guide*. Publications Office of the European Union.
- General Office of the State Council. (2015). *Opinions on deepening the reform of innovation and entrepreneurship education in institutions of higher education*.
- Huang, Z., Wang, Z., & Liu, Y. (2019). Bottlenecks and paths in the construction of teaching staff for innovation and entrepreneurship education in universities. *Educational Research*, 40(8), 111–118.
- Li, J., Lu, C., & Li, L. (2019). Theory and practice of cultivating Chinese college students' entrepreneurial ability. *Educational Research*, 40(2), 87–95.
- Liu, B., Wang, S., & Ma, L. (2018). Text analysis of innovation and entrepreneurship education policies in local universities in China. *Journal of Higher Education*, 39(11), 25–32.
- Ministry of Education. (2010). *Opinions on vigorously promoting innovation and entrepreneurship education in institutions of higher education and college students' self-employment*.
- Ministry of Education. (2012). *Basic requirements for entrepreneurship education and teaching in regular undergraduate institutions (for trial implementation)*.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. Harper & Row.
- Schultz, T. W. (1960). Capital formation by education. *Journal of Political Economy*, 68(6), 571–583.
- Yunnan Provincial Department of Education Research Group. (2021). *Report on the development of innovation and entrepreneurship education in universities in ethnic regions of Yunnan*. Yunnan Education Publishing House.
- Yunnan Provincial Institute of Educational Sciences. (2021). Investigation on the current situation of innovation and entrepreneurship education in universities in border areas. *Journal of Research on Education for Ethnic Minorities*, 32(6), 56–63.