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Can Intangible Cultural Heritage Resources Stimulate Regional Entrepreneurial Activity?—Empirical Evidence from the Guangxi Zhuang Autonomous Region

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Abstract: In line with the world's goals of sustainable development, cultural resources are now being used to promote both cultural inheritance and regional economic revitalisation. This paper studies whether intangible cultural heritage (ICH) resources can promote regional entrepreneurial activity by analyzing panel data from 14 prefecture-level cities in the Guangxi Zhuang Autonomous Region, China, from 2007 to 2023. The empirical results indicate that ICH resources significantly promote entrepreneurial activity in Guangxi; specifically, both the stock of ICH projects and the stock of inheritors show significantly positive effects, and the findings remain robust after a series of tests. The results suggest that ICH can be used to carry cultural values and serve as a resource for place-based development that supports entrepreneurship through heritage commercialisation, cultural consumption and local industrial integration. This study incorporates ICH into the regional entrepreneurship analysis framework, providing new empirical evidence for the economic value of cultural heritage and its role in innovation-driven development.

Keywords: intangible cultural heritage; entrepreneurial activity; regional economy; cultural resources

1. Introduction

In the context of global sustainable development, culture is increasingly viewed as a source of identity and social cohesion, as well as a strategic resource for local resilience, inclusive growth and place-based economic rejuvenation [1,2]. In many countries, cultural heritage is no longer only preserved but also used creatively in works of art, tourism development, local brand construction and new business creation [3,4]. As a result, more scholars and policymakers around the world have begun to study whether heritage resources can promote development in ways other than culture and symbolism. China provides an especially good case study for this problem because it has a large number of diverse intangible cultural heritage (ICH) resources, strong policy support for cultural governance, and rapid development of entrepreneurial activities [5]. Recently, more and more people are pursuing independent careers and entrepreneurship [6]. Along with economic reform and opening-up, cultural heritage has gradually moved from the background to the center of public and academic attention, providing essential support for cultural confidence [7], promoting the concept of common prosperity [8], and driving local economic development [9]. Against this backdrop, an important question arises: Can the ICH resources promote entrepreneurship in addition to its well-known cultural and symbolic functions?

ICH refers to living cultural expressions, practices, skills, knowledge and other forms of transmission that are recognised and preserved in specific communities and places [10]. To make this question empirically feasible, this study takes the Guangxi Zhuang Autonomous Region in China as a case and uses official records to obtain two observable indicators of local ICH resources: representative ICH projects and representative inheritors. ICH is one of the origins of traditional Chinese culture and has a rich history, strong local identity, and lasting cultural value. Recently, at the national level, policy documents such as the 14th Five-Year Plan for Cultural Development [11] and the 14th Five-Year Plan for the Protection of Intangible Cultural Heritage [12] have emphasized the systematic protection, transmission, and productive transformation of ICH resources. Under the support of these policy initiatives, ICH has gradually entered contemporary economic life through heritage workshops, live-streaming marketing, cultural and tourism integration, traditional craft revitalization, and ethnic cultural branding [13–15]. These developments indicate that the ICH should not be regarded merely as an abstract object of preservation, but also as a living resource with the potential for application in entrepreneurial activities. With the development of the digital economy, the upgrading of cultural consumption, and the cultivation of local industries, heritage resources are gradually being integrated into new business activities as a basis for entrepreneurship.

The Guangxi Zhuang Autonomous Region is a typical case for this study. Guangxi has rich ICH resources and serves as a leading center of ethnic culture and an important window for open cooperation with ASEAN [16,17]. Local traditions, such as Zhuang singing festivals, bronze drum customs, traditional weaving, regional festivals, and folk medicine, have rich cultural connotations and also possess considerable market potential; they can be transformed into entrepreneurial opportunities in cultural tourism, craft production, ethnic branding, creative design, specialty food, and folk performance [18,19]. Guangxi is therefore rich in cultural heritage and also one of the areas with abundant cultural resources among ethnic minority areas that have not been developed economically. Recently, Guangxi has been promoting the integration of culture and tourism and the cultivation of distinct local industries [20,21]. Policy implementation in the area has also increasingly linked heritage revitalization with job creation, rural revitalization, and the incubation of local market entities [22,23]. As a result, heritage resources have gradually taken on more roles in job creation, startup support, and rural revitalization. Although these practical developments have been widely reported, there is still little systematic quantitative evidence on whether ICH resources have effectively promoted regional entrepreneurial activity.

Research in recent years has taken many forms. Many scholars have studied the factors that promote entrepreneurship, such as economic development, financial support, industrial structure, population size, education level, digital infrastructure, and the local business environment [24,25]. Other scholars have explored the protection and utilization of ICH, as well as its links with tourism development, industrial integration, and rural revitalization [26–29]. Some studies have also found that local culture, historical resources, and creative environments directly affect regional innovation and startup performance [30,31]. However, the present studies have not addressed this issue. On the one hand, most previous studies have examined cultural resources in a general way, and relatively few have focused specifically on ICH as a living, skill-based, and community-embedded form of heritage. At the same time, there are no direct empirical studies on the relationship between ICH resources and regional entrepreneurial activity, especially at the prefecture-level city and in ethnic minority areas [32,33].

Furthermore, few previous studies have combined data from both ICH projects and officially recognized inheritors in the same analytical system. However, the two indicators show different but complementary aspects of ICH resources: projects are the accumulated stocks of local cultural assets, and inheritors are the human carriers who preserve skills, ensure the inheritance of culture, and may also turn heritage into entrepreneurial opportunities [34]. If only one dimension is used, the economic function of ICH may be only partially identified. Therefore, a more comprehensive system is required to explore whether ICH resources can promote entrepreneurial activity.

To address the above gaps, this paper takes panel data of the 14 prefecture-level cities in Guangxi from 2007 to 2023 and investigates the effect of ICH resources on regional entrepreneurial activity. The two indicators for measuring ICH resources are the accumulated stock of officially recognized ICH projects and the total number of recognized inheritors. This paper aims to provide direct empirical support for addressing the main research question mentioned above: whether the ICH can serve as a vehicle for carrying cultural values and, at the same time, act as a development resource to promote entrepreneurship. This study makes the following contributions to the literature. First, it adds ICH to the analytical system of regional entrepreneurship and extends research on the economic effects of cultural resources. Second, it puts forward a more comprehensive measurement strategy that considers both project stock and inheritor stock simultaneously. Third, by focusing on Guangxi, it provides empirical evidence from a region with rich cultural resources and unique development conditions among ethnic minorities.

The rest of this paper is organised as follows. Section 2 introduces the study area, variables, models, and data sources. Section 3 shows the spatial characteristics of ICH resources and the results of empirical regression.

Section 4 discusses the findings. Section 5 presents the conclusions and policy recommendations. Section 6 is the limitations and future work.

2. Materials and Methods

2.1. Overview of the Study Area

Guangxi is in the southwest of China, and it is close to the interior and coast of the country, as well as the ASEAN region [35]. Given that it is both a border area and an ethnic minority area, Guangxi provides a good case study for exploring whether ICH resources can be turned into entrepreneurial dynamism [36,37]. The 14 prefecture-level cities in Guangxi are not uniform in terms of economic development, industrial structure, urbanisation, population concentration and cultural resources. The above cities have considerable differences and provide a good empirical foundation for identifying the regional effects of ICH resources in a panel data model.

Guangxi is also one of the most ethnically diverse provincial-level areas in China. Long-term interaction among the Zhuang, Yao, Miao, Dong and other ethnic groups has produced a rich and diverse body of ICH resources, such as traditional music, folk customs, ritual practices, craftsmanship, festivals, oral traditions and folk medicine [38]. These forms of heritage are closely linked to the local social life and ethnic identity, and also have good prospects for development in areas such as cultural tourism, traditional handicrafts, ethnic catering, creative design, festival-related businesses and folk performances [39,40]. Therefore, Guangxi is a typical case of an ethnic area with rich culture and uneven economic development, and thus a suitable subject for research on the relationship between heritage resources and entrepreneurship.

In terms of institutions, Guangxi established the identification and publication system for representative ICH projects and inheritors relatively early. Since 2007, the autonomous area has gradually built a relatively continuous and standardized recognition system to provide strong support for the construction of long-term indicators of local ICH resource stocks. By May 2025, Guangxi had approved 1115 regional representative ICH projects [38]. As shown in Figure 1, the distribution of project types is concentrated in categories with relatively strong market connections: traditional crafts are the largest proportion at 32%, followed by folk customs at 22% and traditional music at 10%. This composition suggests that the ICH resource base in Guangxi is, to a large extent, skill-based and lifestyle-related heritage, both of which are relatively compatible with product development, service provision, tourism experiences, and other forms of entrepreneurial activities.

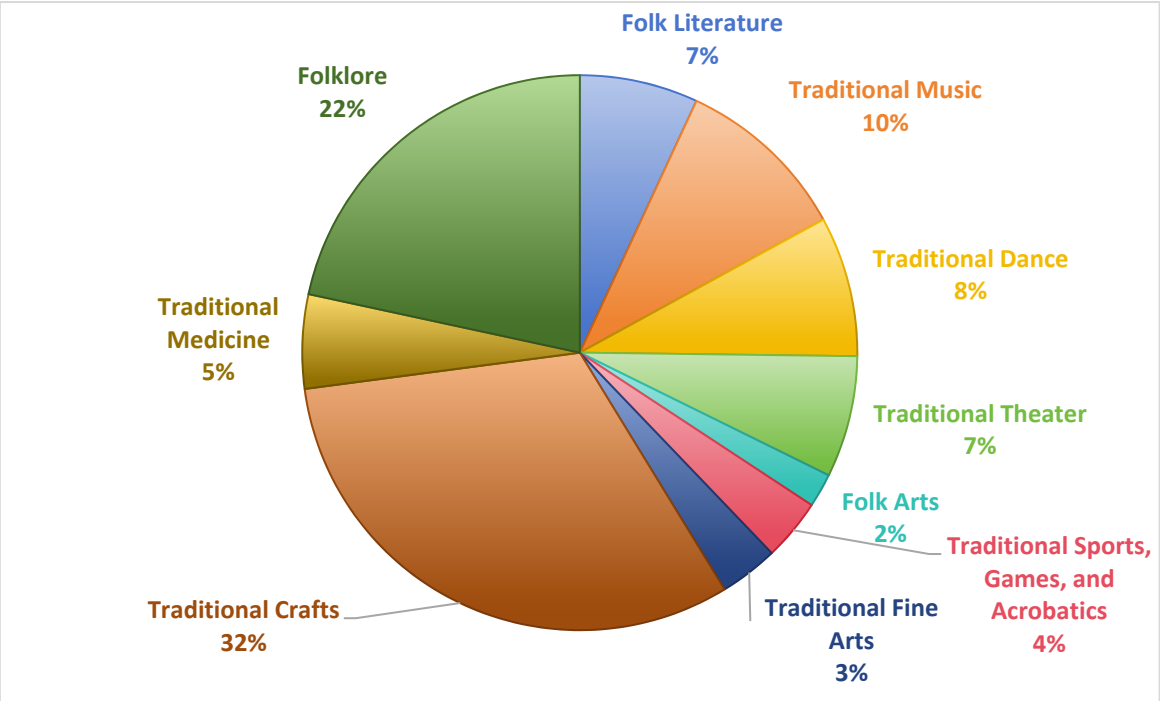

Figure 1. Types of ICH projects in Guangxi.

Since 2008, the local cultural authorities have also designated seven batches of regional-level representative ICH inheritors. By May 2025, the total number of recognized inheritors had reached 936 [38]. As shown in Figure 2, the number of recognized inheritors has been increasing steadily over time, indicating that the human foundation

for the preservation, inheritance and development of intangible cultural heritage has been gradually strengthened. As the inheritors of traditional knowledge and skills, they have accumulated a large amount of experience in turning heritage resources into entrepreneurial activities, particularly in areas such as craft production, cultural training, heritage performance and related service activities [41].

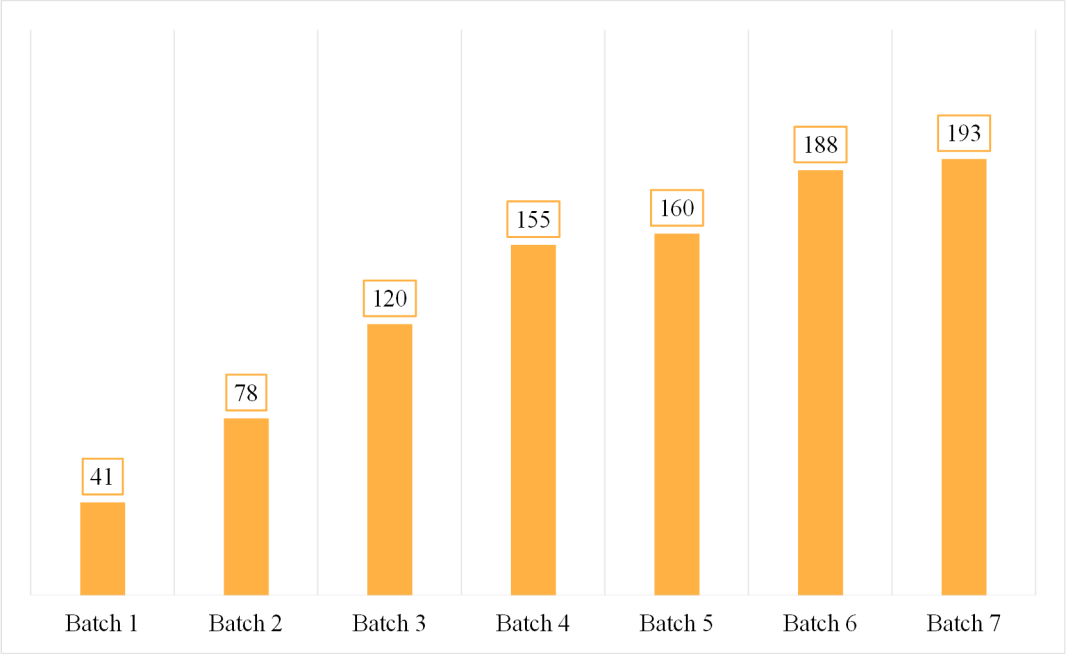

Figure 2. ICH inheritors of each batch in Guangxi.

The evidence from Figures 1 and 2 indicates that Guangxi possesses both a relatively rich stock of heritage items and an expanding pool of recognized inheritors. This dual foundation is especially relevant to the present study because it can measure ICH resources in two complementary ways—project stock and inheritor stock—and thus provide an all-around foundation for exploring whether ICH resources can promote regional entrepreneurial activity.

2.2. Variable Selection and Description

2.2.1. Dependent Variable

Entrepreneurial activity (*EA*) is represented by the logarithm of the number of newly registered enterprises per million permanent residents in this study. New enterprise registrations are the direct results of market entry by startups and can therefore be regarded as an indicator of the level of regional entrepreneurship. Measuring this variable on a per capita basis helps reduce the bias arising from differences in city size and improves comparability across regions [42].

2.2.2. Independent Variables

The two independent variables in this study are the stock of ICH projects and the stock of ICH inheritors, referred to as *ICH_Project* and *ICH_Inheritor*, respectively.

The first batch of Guangxi's representative ICH projects was approved in 2007. Therefore, the *ICH_Project* variable is constructed from 2007 onward based on the official lists of representative ICH projects. This variable shows the extent to which a place has accumulated intangible cultural heritage over time. Compared with the number of newly added projects each year, the cumulative stock is better suited to capture the long-term accumulation of local cultural resources and is more consistent with the fundamental features of ICH resources, such as continuity, path dependence and local embeddedness [43].

The first batch of representative ICH inheritors in Guangxi was officially recognized in 2008. Thus, no representative ICH inheritors had been officially recognized at the Guangxi autonomous-region level by the end of 2007, and *ICH_Inheritor* is coded as 0 for 2007. Starting from 2008, *ICH_Inheritor* is measured as the cumulative number of officially recognized Guangxi-level representative ICH inheritors by the end of each year, based on the official recognition records. This indicator captures the accumulation of living carriers of ICH

knowledge, skills, and practices and reflects the human-resource dimension of regional ICH resources. It can also promote the transformation of ICH resources to industrial enterprises and other types of business [44].

2.2.3. Control Variables

To reduce the problem of omitted variable bias, based on the existing research in regional entrepreneurship and urban economic development, some control variables are chosen for this study.

Economic level (*Eco*) is the logarithm of per capita GDP. Generally speaking, regions with higher economic development possess stronger market demand and better infrastructure and a relatively mature business environment, thus being more favourable for starting a business [45].

Urbanisation rate (*Urban*) is the ratio of urban population in the permanent resident population. Generally speaking, higher levels of urbanisation are associated with population concentration, the movement of factors and the expansion of the service industry; thus, these factors provide a larger consumer base and a more supportive institutional system for entrepreneurship [46,47].

Internet penetration rate (*Inter*) is measured as the ratio of internet users to the permanent resident population. It shows how widely available the local digital infrastructure is. Constructing a powerful digital infrastructure helps reduce information-seeking and transaction costs, lower the barrier to entry, and offer more reliable sources of market information and funding for entrepreneurs [48].

Education level (*Edu*) refers to the proportion of students enrolled in regular higher education institutions among the permanent population; it is an index of regional higher education resources and the potential supply of human resources. In general, a higher level of education has a larger capacity for learning, more skills, and thus more innovative and entrepreneurial qualities [49].

Population density (*Pop*), measured as the logarithm of urban population density, is also added to control for the extent of demographic agglomeration.

Foreign direct investment (*Fdi*) is expressed as the ratio of actual foreign direct investment to GDP and serves to reflect the extent of regional openness to the outside world. The actual foreign direct investment denominated in US dollars is converted into RMB using the average annual exchange rate [50].

The specific measurements of the main variables and the descriptive statistics are presented in Table 1.

Table 1. Measurement and descriptive statistics of the main variables.

Variable	Measurement (Unit)	Obs	Mean	Std. Dev.	Min	Max
EA	The logarithm of the number of newly registered enterprises per million permanent residents	238	8.9246	0.5562	7.5229	11.1378
ICH_Project	ln (the stock of ICH projects)	238	3.1045	1.1186	0.0000	5.2149
ICH_Inheritor	ln (the stock of ICH inheritors + 1)	238	2.7944	1.2887	0.0000	5.0938
Eco	ln (per capita GDP)	238	10.2911	0.5665	8.9919	11.4858
Urban	The ratio of urban population in the permanent resident population (%)	238	46.2104	10.2898	26.5991	71.3672
Inter	The ratio of internet users to the permanent resident population (%)	238	22.7509	19.1481	1.6205	90.4613
Edu	The proportion of students enrolled in regular higher education institutions among the permanent population (%)	238	1.5264	1.7331	0.0000	10.3749
Pop	The logarithm of urban population density	238	7.4962	0.6646	5.8636	8.4966
Fdi	The ratio of actual foreign direct investment to GDP (%)	238	0.8590	1.0280	0.0000	4.8988

2.3. Model Specification

To investigate the impact of intangible cultural heritage (ICH) resources on regional entrepreneurial activity (*EA*), this study constructs the following fixed-effects model for estimation:

$$EA_{it} = \alpha + \beta_1 ICH\_Project_{it} + \gamma_1 Eco_{it} + \gamma_2 Urban_{it} + \gamma_3 Inter_{it} + \gamma_4 Edu_{it} + \gamma_5 Pop_{it} + \gamma_6 Fdi_{it} + \varepsilon_{it} \quad (1)$$

$$EA_{it} = \alpha + \beta_2 ICH\_Inheritor_{it} + \gamma_1 Eco_{it} + \gamma_2 Urban_{it} + \gamma_3 Inter_{it} + \gamma_4 Edu_{it} + \gamma_5 Pop_{it} + \gamma_6 Fdi_{it} + \varepsilon_{it} \quad (2)$$

A fixed-effects specification is adopted to control for unobservable regional characteristics that may affect *EA* and be correlated with ICH resources. In the above equations, i and t denote city and year, respectively. EA_{it} represents the entrepreneurial activity of city i in year t. $ICH\_Project_{it}$ and $ICH\_Inheritor_{it}$ are the core

independent variables, capturing the effects of ICH projects and ICH inheritors, respectively, while Eco_{it}, $Urban_{it}$, $Inter_{it}$, Edu_{it}, Pop_{it} and Fdi_{it} are control variables included to account for regional socioeconomic characteristics that may also influence entrepreneurship. α is the constant term, β_1 and β_2 are the coefficients of the core independent variables, $\gamma_1 - \gamma_6$ are the coefficients of the control variables, and ε_{it} is the random error term.

Equation (1) is used to estimate the effect of *ICH_Project* on *EA*, while Equation (2) is used to estimate the effect of *ICH_Inheritor* on *EA*. Specifically, β_1 reflects the marginal effect of *ICH_Project* on *EA*, and β_2 reflects the marginal effect of *ICH_Inheritor* on *EA*, conditional on other factors remaining unchanged.

2.4. Data Sources

The research subjects of this study are the 14 cities in Guangxi, with a sample period from 2007 to 2023. This timeframe is selected for two main reasons. On the one hand, a relatively continuous and standardized publication system for the lists of provincial-level representative ICH projects and inheritors in Guangxi was established, and thus a consistent city-level panel dataset of ICH resources can be constructed. At the same time, many positive changes have also occurred in China during this period, such as continuous improvements in the entrepreneurial environment, rapid development of digital technology, and deeper integration of culture and tourism. The above conditions are suitable for conducting research on the relationship between ICH resources and entrepreneurial activity.

The original data on newly registered enterprises are obtained from CnOpenData's China Industrial and Commercial Enterprise Registration Information Database [51]. The original stock data on ICH projects and ICH inheritors are obtained from the Guangxi Intangible Cultural Heritage Protection Network [52,53]. The original data for the control variables are obtained from the Guangxi Statistical Data Publication Database [54].

3. Analysis Results

3.1. Spatial Characteristics of ICH Resources

Before examining the econometric results, this section first presents the spatial characteristics of ICH resources in Guangxi to provide the descriptive background.

As shown in Figure 3, the ICH resources in Guangxi are not evenly distributed spatially. Figure 3a presents the spatial distribution of the raw stock of ICH projects in 2023 (ranging from 20 to 184), while Figure 3b shows the raw stock of ICH inheritors in 2023 (ranging from 13 to 162). These raw values are then transformed using the natural logarithm (as defined in Table 1) for the subsequent regression analysis. The distribution areas of the stock of ICH projects are concentrated in areas with strong foundations for all-around development, such as Nanning, Guilin and Liuzhou. These areas generally have stronger economic support, well-developed cultural communication platforms and active tourism markets, and are thus more suitable for implementing, protecting and transmitting ICH projects. Remote areas with a weaker economic foundation have fewer ICH projects and thus have a reduced capacity for exploring and protecting cultural resources institutionally.

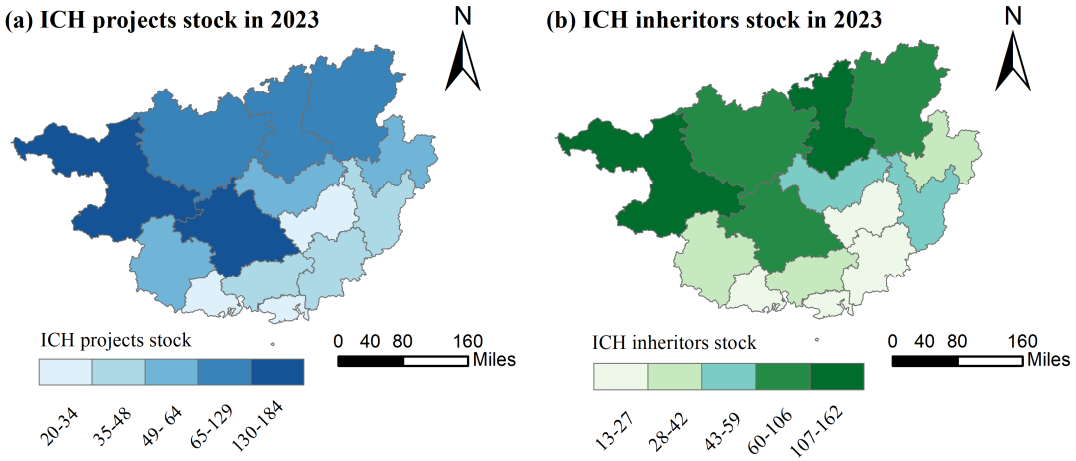

Figure 3. Spatial distribution of (**a**) ICH projects stock and (**b**) ICH inheritors stock in cities of Guangxi in 2023. (Data source: Guangxi Intangible Cultural Heritage Protection Network, original stock data of manual statistics by the authors. Projection: WGS 1984. The color gradients represent the stock of ICH projects (ranging from 20 to 184) in panel (**a**) and the stock of ICH inheritors (ranging from 13 to 162) in panel (**b**), respectively. The maps are based on Chinese standard maps, with the review No. GS (2024) 0650. The base maps have not been modified.).

The distribution of ICH inheritor stocks is generally in line with that of project stocks, but there are some local variations. The distribution of ICH inheritors, who are responsible for carrying on the living heritage of ICH, is affected by factors such as the cultural resources of a region, the level of education at home, the industrial environment, and migration patterns. Areas with a high density of ICH inheritors (high-value areas) generally have good talent aggregation capabilities and strong foundations for the cultural industry, thus supporting a synergistic development model of "project-inheritor-industry". On the other hand, areas with a low concentration (low-value areas) are likely to face a shortage of inheritors due to reasons such as population outflow, disruption of traditional skill transmission, or insufficient market transformation capacity.

3.2. Regression Analysis

Following the descriptive analysis in Section 3.1, this section further examines the relationship between ICH resources and entrepreneurial activity through regression models. By controlling for other relevant factors, this part identifies whether ICH projects and ICH inheritors have significant effects on entrepreneurial activity.

3.2.1. Impact of ICH Project on EA

Table 2 shows the regression results of the effect of *ICH_Project* on *EA*. To confirm the stability of the estimation results, a series of control variables will be added incrementally in this study for comparison. The regression results are generally stable in all models.

The regression coefficients of the entire group of columns for the main explanatory variable *ICH_Project* are all positive and statistically significant. Therefore, the stock of ICH projects can help stimulate EA. Column (1) only includes the stock of ICH projects, and its regression coefficient is 0.4745; at the 1% significance level, it shows that ICH project resources positively and significantly affect entrepreneurial activity. With the addition of control variables one by one, the estimated coefficient for *ICH_Project* decreases slightly but remains in the range of 0.1011–0.1459 and is still statistically significant.

The coefficient of *ICH_Project* in the baseline regression in Column (7) is 0.1144, and it is significant at the 1% level. Considering the logarithmic form setting, a 1% increase in the stock of ICH projects is associated with an average increase of 0.1144% in entrepreneurial activity. Thus, the ICH project resources are not only indicators of regional cultural wealth but also offer relatively stable support for the development of entrepreneurs via channels such as increased cultural consumption, characteristic industry incubation, and local brand construction.

Table 2. Regression results of the impact of ICH Project on EA.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	EA	***EA***	***EA***	***EA***	***EA***	***EA***	***EA***
ICH_Project	0.4745 ***	0.1459 ***	0.1149 ***	0.1011 **	0.1104 ***	0.1099 ***	0.1144 ***
	(0.0215)	(0.0439)	(0.0420)	(0.0421)	(0.0422)	(0.0420)	(0.0408)
Eco		0.6947 ***	0.3682 ***	0.3533 ***	0.3380 ***	0.3428 ***	0.2387 **
		(0.0839)	(0.1009)	(0.1003)	(0.1001)	(0.0998)	(0.1006)
Urban			0.0309 ***	0.0274 ***	0.0310 ***	0.0317 ***	0.0311 ***
			(0.0059)	(0.0061)	(0.0063)	(0.0063)	(0.0061)
Inter				0.0029 **	0.0031 **	0.0033 **	0.0037 ***
				(0.0013)	(0.0013)	(0.0013)	(0.0013)
Edu					−0.0430 *	−0.0401 *	−0.0432 *
					(0.0234)	(0.0234)	(0.0227)
Pop						−0.1035	−0.0622
						(0.0646)	(0.0636)
Fdi							−0.0859 ***
							(0.0225)
Constant	7.4514 ***	1.3220 *	3.3509 ***	3.6437 ***	3.6685 ***	4.3528 ***	5.1974 ***
	(0.0693)	(0.7427)	(0.8020)	(0.8069)	(0.8027)	(0.9069)	(0.9072)
Obs	238	238	238	238	238	238	238
R-squared	0.6857	0.7599	0.7864	0.7908	0.7940	0.7963	0.8092

Note: Cluster robust standard errors at the city level are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

All the columns have a positive coefficient for *Eco*. In the baseline model shown in Column (7), the coefficient is 0.2387 and is significant at the 5% level; thus, areas with better economic foundations are positively correlated with the level of entrepreneurship. This is in line with the expectation that, due to higher levels of economic development, market demand will be stronger; good infrastructure will be available; and a favourable business environment will support more entrepreneurial activity [55].

The coefficients of *Urban* are all positive and significant at the 1% level, indicating that urbanization has a significant positive effect on entrepreneurship. This indicates that agglomeration effects from urbanization -such as population concentration, expanded market demand, improved infrastructure and knowledge spillovers - outweigh potential competition effects. Therefore, at the prefecture level in Guangxi, urbanization effectively provides a larger consumer group and a more favorable institutional environment for entrepreneurial activities.

The coefficient of *Inter* is positive and statistically significant. As shown in the baseline model in Column (7), the coefficient is 0.0037 and is significant at the 1% level; therefore, more developed areas of the Internet are associated with a higher level of regional entrepreneurship. It can be seen that digital infrastructure and new-era service support have helped to promote the development of the entrepreneurship enterprise, reduced information acquisition costs and market-entry hurdles [56].

The coefficient of *Edu* is negative in all columns and significant at the 10% level, indicating that the educational level in this study has a weak negative impact on *EA*. This might be due to the time lag in converting educational resources into long-term human capital [57]. Additionally, in the short term, regions with a higher proportion of higher education students may experience brain drain or resource extrusion effects, thereby temporarily hindering local entrepreneurial activities.

The coefficient of *Pop* is not statistically significant, so we cannot conclude that the effect of population concentration on entrepreneurs is stable. The coefficient of *Fdi* in the baseline model (Column 7) is −0.0859 and is significant at the 1% level, indicating a robust negative effect. Therefore, it can be seen that the entry of foreign capital will increase market competition and resource demands; thus, local small and medium-sized enterprises are likely to be crowded out [58].

3.2.2. Impact of ICH Inheritor on EA

Table 3 shows the regression results of *ICH_Inheritor* on *EA*, and it also uses a step-by-step inclusion method for control variables in the estimation and takes Column (7) as the baseline model.

Based on the regression results, the coefficients of *ICH_Inheritor* are all positive and consistently pass the significance test; thus, it can be concluded that a larger stock of ICH inheritors is positively associated with an increase in regional entrepreneurial activity. As shown in the baseline model in Column (7), the regression coefficient for *ICH_Inheritor* is 0.1132 and is statistically significant at the 1% level; therefore, more abundant resources of intangible cultural heritage inheritors are associated with higher levels of regional entrepreneurial activity after controlling for other variables. Therefore, inheritors can act as carriers for the living inheritance of intangible cultural heritage, and also provide support for local entrepreneurship through skill sharing, cultural innovation and industrial upgrading [59].

The regression results of the control variables in Column (7) of Table 3 are largely consistent with those in Table 2. Both the *Eco* and *Inter* exhibit significant positive impacts, indicating that the economic foundation and digital conditions remain important factors driving the enhancement of entrepreneurial activity. *Urban* also shows a consistently significant positive effect across specifications. In contrast, *Edu* exhibits a significant negative impact, while *Pop* shows a negative but not consistently significant effect. Notably, *Fdi* exhibits a significant negative impact at the 1% level in the baseline model.

Table 3. Regression results of the impact of ICH Inheritor on EA.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	EA	***EA***	***EA***	***EA***	***EA***	***EA***	***EA***
ICH_Inheritor	0.3723 ***	0.1274 ***	0.0982 ***	0.0979 ***	0.1069 ***	0.1105 ***	0.1132 ***
	(0.0166)	(0.0334)	(0.0322)	(0.0318)	(0.0319)	(0.0318)	(0.0308)
Eco		0.6662 ***	0.3620 ***	0.3215 ***	0.3031 ***	0.3013 ***	0.1987 **
		(0.0816)	(0.0980)	(0.0981)	(0.0979)	(0.0973)	(0.0980)
Urban			0.0299 ***	0.0256 ***	0.0293 ***	0.0300 ***	0.0294 ***
			(0.0059)	(0.0061)	(0.0063)	(0.0063)	(0.0061)
Inter				0.0033 **	0.0036 ***	0.0039 ***	0.0043 ***
				(0.0013)	(0.0013)	(0.0013)	(0.0013)
Edu					−0.0466 **	−0.0437 *	−0.0468 **
					(0.0232)	(0.0232)	(0.0225)
Pop						−0.1185 *	−0.0776
						(0.0640)	(0.0629)
Fdi							−0.0860 ***
							(0.0222)
Constant	7.8842 ***	1.7127 **	3.5409 ***	4.0843 ***	4.1422 ***	4.9943 ***	5.8336 ***
	(0.0499)	(0.7577)	(0.8044)	(0.8225)	(0.8174)	(0.9341)	(0.9311)
Obs	238	238	238	238	238	238	238
R-squared	0.6925	0.7635	0.7881	0.7942	0.7979	0.8010	0.8139

Note: Cluster robust standard errors at the city level are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

3.3. Robustness Test

Following the baseline regression analysis in Section 3.2, this section further tests whether the estimated effects remain stable under alternative specifications and sample treatments. By doing so, this part provides additional evidence for the reliability of the benchmark results.

To further verify the reliability of the baseline regression results, this paper conducts robustness tests from two aspects: replacing the dependent variable and applying sample winsorization. The results are presented in Table 4. Specifically, while the baseline dependent variable is the logarithm of the number of newly registered enterprises per million permanent residents, Columns (1) and (2) replace it with the logarithm of the total number of newly registered enterprises to test the sensitivity of the results to the variable specification. Columns (3) and (4) re-estimate the regression after winsorizing the main variables at the 1% level.

The coefficients of both *ICH_Project* and *ICH_Inheritor* are still significantly positive. After replacing the dependent variable, the coefficient of *ICH_Project* in Column (1) is 0.1046 and significant at the 1% level; the coefficient of *ICH_Inheritor* in Column (2) is 0.0951 and also significant at the 1% level. Therefore, the promoting effect of intangible cultural heritage resources on the development of entrepreneurship is still relatively strong and stable.

After applying winsorization at the 1% level, the core conclusions remain unchanged. The regression coefficient of *ICH_Project* in Column (3) is 0.1141 and is significant at the 1% level; the regression coefficient of *ICH_Inheritor* in Column (4) is 0.1126, also significant at the 1% level. This suggests that, after eliminating potential estimation bias caused by extreme values, both the resources of intangible cultural heritage projects and inheritors can still significantly promote the enhancement of regional entrepreneurial activity. In addition, the signs and significance of the control variables in Table 4 are basically consistent with the benchmark regression results in Tables 2 and 3. Specifically, *Eco*, *Urban* and *Inter* still exhibit significant positive effects, while *Fdi* maintains a significant negative effect. *Edu* and *Pop* are still negative. The overall stability of all variables further confirms the reliability of our model setting.

Table 4. Results of robustness test.

Variable	(1)	(2)	(3)	(4)
	EA	***EA***	***EA***	***EA***
ICH Project	0.1046 **		0.1141 ***	
	(0.0414)		(0.0349)	
ICH Inheritor		0.0951 ***		0.1126 ***
		(0.0315)		(0.0263)
Eco	0.2032 **	0.1818 *	0.2407 ***	0.2037 **
	(0.1022)	(0.1002)	(0.0866)	(0.0837)
Urban	0.0339 ***	0.0326 ***	0.0315 ***	0.0297 ***
	(0.0062)	(0.0062)	(0.0053)	(0.0053)
Inter	0.0045 ***	0.0050 ***	0.0036 ***	0.0042 ***
	(0.0013)	(0.0013)	(0.0011)	(0.0011)
Edu	−0.0340	−0.0364	−0.0403 *	−0.0460 **
	(0.0231)	(0.0230)	(0.0214)	(0.0212)
Pop	−0.0080	−0.0211	−0.0561	−0.0717
	(0.0646)	(0.0643)	(0.0550)	(0.0541)
Fdi	−0.0922 ***	−0.0921 ***	−0.0648 ***	−0.0650 ***
	(0.0228)	(0.0227)	(0.0195)	(0.0192)
Constant	6.1450 ***	6.5757 ***	5.0889 ***	5.7020 ***
	(0.9213)	(0.9516)	(0.7821)	(0.7968)
Obs	238	238	238	238
R-squared	0.8163	0.8185	0.8473	0.8523

Note: Cluster robust standard errors at the city level are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4. Discussion

The empirical results of this study provide several important insights into the relationship between intangible cultural heritage (ICH) resources and regional entrepreneurial activity. The results show that both ICH project stock and ICH inheritor stock significantly enhance entrepreneurial activity in Guangxi, and this relationship is still strong after alternative measurements and sample winsorization. Based on the above results, cultural resources are not merely symbolic assets, but can also act as productive regional factors that shape economic behavior and local development trajectories.

According to the benchmark regression results, *ICH_Project* is positively correlated with entrepreneurial activity at the 1% significance level. Therefore, areas with a larger number of well-known ICH projects are likely to have more entrepreneurial activity. One possible reason is that the ICH project has increased the attention and appeal of local cultural identity, thus creating a good environment for tourism-related enterprises, cultural and creative industries, heritage product development, and other forms of small-scale entrepreneurship [60]. In this way, the ICH project can also serve as an economic driver to create market opportunities and diversify the channels for local entrepreneurship [61]. Preserving and promoting ICH projects can also strengthen the regional brand, help reduce information asymmetry, and improve market recognition for locally rooted entrepreneurial products and services [62].

Second, the results show that *ICH_Inheritor* is positively correlated with entrepreneurial activity. Inheritor stock refers to the human agency aspect of cultural inheritance and indicates whether skilled cultural bearers are available in a particular area. Therefore, the function of ICH inheritors is not limited to the inheritance of culture and tradition; they can also be important carriers of knowledge and skills, as well as local entrepreneurs. As custodians of traditional skills and culture, inheritors can help transform cultural inheritance into entrepreneurial opportunities through apprenticeship systems, product innovation and local embedding [63]. In Areas with a high concentration of ICH inheritors, the accumulation of tacit knowledge and cultural skills can provide strong support for craft-based entrepreneurship and cultural industrialisation [64].

Third, the robustness tests also confirm the stability of the above results. After replacing the dependent variable with the logarithm of newly registered enterprises, as well as after winsorizing the core variables at the 1% level, both *ICH_Project* and *ICH_Inheritor* continue to show positive and significant coefficients. Therefore, it can be concluded that the estimated effect is not due to specific model parameters or outliers, but rather a relatively stable relationship between ICH resources and entrepreneurial activity. Robustness should be ensured in the empirical study to prevent the results from being due to errors. Therefore, the consistency of the results in this paper strengthens the reliability of the main conclusion that ICH resources can promote entrepreneurship in a meaningful and sustainable way [65].

Control variables are also basically consistent with the theoretical expectations in the baseline and robustness tests.In all models, *Eco* is positively and significantly correlated with *EA*. Thus, economic development provides a solid material foundation for entrepreneurship. This is in line with the view that higher-income areas generally have better infrastructure, stronger consumption power and more abundant market demand; thus, they are more conducive to business development [66]. *Urban* has always been positive and statistically significant, indicating that population concentration, expanded market demand and improved infrastructure in urban areas have effectively promoted entrepreneurial activities.The coefficient of Inter is always positive, indicating that a high proportion of Internet users in the population is conducive to the development of entrepreneurship, which may be achieved by reducing transaction costs, improving factor liquidity and improving market access [67]. On the contrary, *Edu* shows a significant negative effect, which may be related to the time lag of the transformation of educational resources into human capital or brain drain. *Pop* shows a negative but not consistently significant effect. In addition, *Fdi* also has a significant negative impact, possibly due to the crowding out of local smes [68] by intensified market competition. In short, cultural resources do not drive entrepreneurship by themselves alone, but are influenced by regional economic, digital, structural and other conditions.

Most previous studies have listed the traditional reasons for entrepreneurship, such as human capital, financial conditions, urbanization, infrastructure and government policies [69,70]. On the other hand, this study shows that cultural heritage resources can be added to the analytical system of entrepreneurship research as an independent and effective reason. It has been added to our knowledge that entrepreneurship is not only the result of economic necessity or market competition but is also deeply rooted in society and culture [71]. Therefore, the results show that cultural endowments can create a place-based competitive advantage and promote the development of the region in many ways [72].

5. Conclusions and Policy Recommendations

5.1. Conclusions

This study uses panel data of 14 prefecture-level cities in Guangxi from 2007 to 2023 to investigate the relationship between ICH resources and regional entrepreneurial activity. Distinguish between ICH project stock and ICH inheritor stock to conduct an all-encompassing analysis of how different dimensions of ICH resources affect entrepreneurship in this study. The empirical results show that ICH projects and ICH inheritors have a positive impact on entrepreneurial activity. In addition, the results show that economic development and internet penetration are positively associated with entrepreneurial activity, suggesting that the entrepreneurial value of ICH

is more likely to be realized in regions with stronger market foundations and better digital and physical connectivity. This study enriches the literature on regional entrepreneurship by incorporating ICH resources into the analysis framework and offers empirical evidence from an ethnic minority area where culture and economy are closely linked.

5.2. Policy Recommendations

Based on the above empirical results, some policy recommendations can be proposed to better utilise ICH resources for regional entrepreneurial development.

First, the local government should strengthen the system-building of ICH protection and entrepreneurship promotion. Instead of setting separate goals for heritage protection and economic development, the government can build a joint mechanism to link ICH conservation with business incubation and cultural product development. Governments can select ICH projects with commercial prospects for support under pilot programs, market connections and industrial planning. Thus, the heritage resources can be used to develop a business and retain their cultural connotations.

Second, policy support should focus on the cultivation and empowerment of ICH inheritors. Given that inheritor stock positively affects entrepreneurial activity, the government can offer more targeted support to representative inheritors and their students. Specific measures may include training in product design, digital marketing, e-commerce operation, financial management and intellectual property protection. Inheritors can also be encouraged to open workshops, studios, cooperatives or small enterprises and use their traditional skills in a business. Special startup subsidies and incubation support will be provided for younger inheritors to reduce the entry barrier and enhance the long-term development of heritage-based entrepreneurship.

Third, the local government can promote the construction of ICH-based industrial chains and cultural consumption scenarios. Based on the above empirical results, ICH resources are more likely to promote entrepreneurship when they are combined with a market-oriented and consumption-driven system. Therefore, the government can promote the combination of ICH with tourism, rural revitalization, creative design, festival economy and local specialty industries. ICH-themed neighborhoods, heritage experience centers, cultural markets and craft workshops can be built to create visible consumption spaces and promote downstream entrepreneurial activities. Such measures will increase the economic benefits of ICH and create jobs and income for people in the local community.

Fourth, it is necessary to strengthen the construction of digital infrastructure and support the digitalisation of ICH entrepreneurship. Given that the internet penetration is positively associated with entrepreneurial activity, digitalization should become an important policy direction. Local governments can help ICH entrepreneurs use e-commerce platforms, livestreaming, short-video promotion, and digital heritage storytelling to expand market reach beyond the local area. Training should be provided to help artisans and small entrepreneurs master basic digital tools in rural and less developed areas. At the same time, the government can build an online platform to connect ICH projects, inheritors, consumers, and investors, improve information flow and reduce market friction.

Fifth, according to the actual circumstances in different areas, design differentiated policies. The cities in Guangxi have different economic foundations, cultural concentrations and levels of digitalisation; thus, a single policy will not suit all areas. More developed cities can focus on advancing the industrialisation and brand building of ICH, and market integration; less developed areas should prioritise heritage protection, skills training and basic entrepreneurial support. In addition, the government can promote cooperation among regions to spread the successful model of ICH-based entrepreneurship in other cities. It will help construct an all-weather, high-quality development pattern for the region.

6. Limitations and Future Research Directions

This study has the following deficiencies to be noted. First, the sample is limited to 14 prefecture-level cities in Guangxi, and thus the results may not be generalisable to other provinces or ethnic minority areas. Second, the ICH resources are only measured by the number of officially recognised projects and inheritors; thus, important attributes of heritage endowment, such as resource quality, market appeal and commercial prospects, are not fully reflected. Third, only the direct effect of ICH resources on entrepreneurial activity has been studied in this paper, and underlying mechanisms such as tourism integration, cultural consumption, digital diffusion and policy support have not been investigated. Future research can address the above deficiencies by expanding the sample to a larger area or country, using more precise indicators for ICH resources, and applying mediation, spatial or quasi-experimental methods to determine the reasons for the change more accurately. Micro-level data at the county,

enterprise and individual levels can also be employed to study how ICH resources affect entrepreneurial decisions and outcomes under different institutional and market conditions.

Author Contributions

M.Z.: writing—original draft preparation; X.Z.: data curation, visualisation, writing—review & editing; C.F.L. and N.L.: writing—review & editing; Y.L.: conceptualization, methodology, software, validation, formal analysis and resources, supervision, project administration and funding acquisition. All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement

The data used in this study are obtained from accessible databases and websites, and detailed sources are described in the manuscript. Further information or data related to this study may be obtained from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflict of interest.

Use of AI and AI-Assisted Technologies

During the preparation of this paper, the authors used Gemini 3 pro to assist with translation and language polishing. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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