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Administrative Sciences

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Suggested Citation: Dai, Yue (2021) : A behavioral cultural-based development analysis of entrepreneurship in China, Administrative Sciences, ISSN 2076-3387, MDPI, Basel, Vol. 11, Iss. 3, pp. 1-16,
<https://doi.org/10.3390/admsci11030091>

This Version is available at:

<https://hdl.handle.net/10419/275209>

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Article

A Behavioral Cultural-Based Development Analysis of Entrepreneurship in China

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Abstract: This paper deals with local cultural capital as a motivator for entrepreneurial behavior in China. Following the Culture-Based Development paradigm (CBD), the current study approaches local cultural capital as an entity that can be temporarily segmented into living culture and cultural heritage and can be further differentiated type-wise into material cultural capital and immaterial cultural capital. The main hypothesis of this paper is that living culture and cultural heritage have different roles in the direction of effect on entrepreneurial behavior in China. To test this hypothesis, a quantitative research method is utilized and data is collected from *China Statistical Yearbooks*, the website of *Chinese Intangible Cultural Heritage* as well as the third and fourth *China Economic Census Yearbooks*, covering the period from 2010 to 2019 and regarding all 31 provinces of mainland China. This dataset provides indicators for both material and immaterial living culture, respectively represented by the total book circulations in public libraries and performances at art venues, while historical cultural heritage is approximated by intangible cultural heritage (such as the number of folk literature, traditional music, traditional dance and so on) and historical sites. For data analysis, an OLS regression is used to assess the roles of each kind of cultural capital on regional entrepreneurship development. Findings suggest CBD is applicable for analyzing entrepreneurship behavior and the result of the application of model shows a notable impact of culture on entrepreneurship activities in China.

Keywords: culture based development (CBD); entrepreneurship; China; cultural heritage; living culture



Citation: Dai, Yue. 2021. A Behavioral Cultural-Based Development Analysis of Entrepreneurship in China. *Administrative Sciences* 11: 91. <https://doi.org/10.3390/admsci11030091>

Received: 6 July 2021

Accepted: 13 August 2021

Published: 1 September 2021

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1. Introduction

The aim of this paper is to understand regional entrepreneurial behavior in China from a behavioral perspective by applying the Cultural-Based Development (CBD) paradigm. There are two new books which have shed additional light on the study of regional economic development with special focus on personality, culture and other institutions, namely, the work by [Obschonka et al. \(2021\)](#), *Footprints: Geography of Entrepreneurial Psychology* as well as the book by [Huggins and Thompson \(2020\)](#), *A Behavioral Theory of Economic Development: The Uneven Evolution of Cities and Regions, and I will engage with their insight from CBD perspective*. China has a vast land and rich cultures; concerning its entrepreneurship development, researchers have been active in examining entrepreneurship-related institutions, characteristics as well as entrepreneurship cultures in China. However, they usually failed to identify the role of culture in the process of entrepreneurship development. Such regional studies without an encompassing cultural paradigm would be considered impaired. CBD provides a cultural economic analysis paradigm, which is suitable for analyzing entrepreneurship behavior from a culture-based perspective and would further our understanding of the role of Chinese culture in socioeconomic development.

Following closely the CBD definition for local cultural capital, which understands the entity as segmented into four blocks: material and immaterial living culture and material and immaterial cultural heritage, the current paper examines the impact of each type of cultural capital on local entrepreneurship behavior in all 31 Chinese provinces. Data obtained from *China Statistical Yearbooks*, *Chinese Economic Census Yearbooks* and the

website of *Chinese Intangible Cultural Heritage* are utilized to quantify both entrepreneurial behavior and cultural capital. The main associations are examined and discussed. The findings outline a promising agenda for applying the CBD paradigm for understanding the intricacies of entrepreneurial behaviors in China.

The structure of this paper is as follows: Section 2 offers a brief review of studies on regional entrepreneurship and Chinese entrepreneurship development as well as empirical studies of CBD on socioeconomic development. Section 3 introduces model and estimation strategy with the results of empirical application on regional Chinese entrepreneurship. Finally, Sections 4 and 5 illustrate limitations of this paper and concludes.

2. Literature Review

2.1. Drivers of the Difference in Regional Entrepreneurship

It has been examined that regional unemployment rates and population density contribute to the growth of enterprises (Bosma and Schutjens 2010). Formal institutions such as government intervention (Bjørnskov and Foss 2007), employment protection (Bosma and Schutjens 2010), and labor market regulation (Van Stel et al. 2007) have negative impacts on entrepreneurship. However, monetary policy (Bjørnskov and Foss 2007) and fiscal, monetary and labor freedom (McMullen et al. 2008) are positively associated with entrepreneurship development. Moreover, explanations for regional disparities in entrepreneurship are beyond these “hard factors”. Entrepreneurship is about a certain kind of behavior highlighting individuals’ characters and mindsets, which makes it closely linked to the study of personal profile and culture. As Obschonka et al. (2021) indicate, the forming process of human psychology is under the influence of both biology and environment (Rutter 2006), which makes it impossible to study regional entrepreneurial activities without referring to its relevant geographical contexts.

There are two paradigms which propose, with insights from psychology, two different takes on how entrepreneurship is formed, namely, the action-oriented paradigm and the person-oriented paradigm. The former recognizes the focal role of actions in entrepreneurship as entrepreneurs would only achieve by taking actions with hierarchical regulations of behaviors (Frese 2009), while the person-oriented paradigm treats the personality of the individual as the study object and the main determinants of all psychological outcomes, including behavior, motivation, cognition, and emotions. In this perspective, entrepreneurs are “identified” with their personality. Obschonka and Stuetzer (2017) have adapted the original Five-Factor Theory (FFT) Personality System initially developed by McCrae and Costa (2008) to model entrepreneurial personality and have concluded three major components, namely, basic tendencies, characteristic adaptations, and self-concept. These three components are interconnected where that basic tendencies refer to the relatively stable personality characteristics while characteristic adaptations and self-concept represent more changeable and variable parts of personality.

The so-called entrepreneurial personality profile could be built by studying the geographical entrepreneurship human personality, which is considered to be an important regional factor to explain the variations in regional entrepreneurship. McClelland (1961, 1965) attempted to find the connection between economic development to individual-level psychological concepts by focusing on the role of achievement motivation in the economic development (McClelland 1961) as well as in the entrepreneurship development (McClelland 1965). Additionally, researchers have been focusing on identifying aggregated entrepreneurial traits between regions. Big Five traits, including openness, conscientiousness, extroversion, agreeableness, and neuroticism are viewed as the relatively stable part of Five Factor Theory (FFT) Personality System and is applied to the analysis of the association between regional entrepreneurship and aggregated human traits profile (Rentfrow et al. 2008; Obschonka et al. 2013). Apart from focusing on identifying entrepreneurial traits, Huggins et al. (2018) argue it is the combination of community culture and personality psychology that decides the variations in human behavior, and they term it as the psychocultural character of one region. Courage is identified to be one important

psychological feature for the success rate of entrepreneurs (Ebert et al. 2019). It should be noted that the mechanism of how psychological factors would impact on the economic activities is still unclear, and it is often argued that it is the result of individuals with such personality traits interacting with local knowledge sources (Obschonka et al. 2016).

Other drivers such as the agglomeration of creative class in a locality is also claimed to contribute to regional entrepreneurship development (Florida 2006), as creativity is one major fertilizer for the growth of entrepreneurship by generating new knowledge. For the creative class, it is claimed they tend to migrate to places with a lively and diversified cultural atmosphere and the society is more open and tolerant. However, the causality between social prosperity and the concentration of the creative class is hard to examine, and empirical evidence also varies (Möller and Tubadji 2009; Falck et al. 2011).

The phenomenon of regional entrepreneurship persistence has been observed in several studies (Fritsch and Mueller 2007; Fritsch and Wyrwich 2014; Fritsch et al. 2019; Andersson and Koster 2010; Fotopoulos 2013). For these regions, it has been observed their level of entrepreneurship would remain relatively high for a long period. This phenomenon could be explained by the local stable entrepreneurial-determining factors (Fotopoulos 2013; Fritsch and Kublina 2019). Another explanation indicates in these regions that existing enterprises as well as entrepreneurial environments provide more opportunities for new enterprises, which lead to a path-dependent manner of regional enterprises (Martin and Sunley 2006). Demonstration and peer effects are viewed as the explanation in that people are more likely to engage in entrepreneurship activities when they witness successful demonstrations from peers (Sorenson and Audia 2000; Arenius and Minniti 2005; Falck et al. 2010). Moreover, for regions such as Germany, entrepreneurship would thrive again even after drastic social and economic fluctuations (Fritsch and Wyrwich 2014). This could be the potential evidence of entrepreneurship culture, as entrepreneurial culture could be maintained within a society through the mechanism of parents transferring an entrepreneurial spirit to their offspring as well as selective migration (Obschonka et al. 2018a). Fritsch et al. (2019) further indicate that collective memory might also be the explanation, which reminds later generations of the preexisting entrepreneurial activities, thus could motivate the present generation to engage in entrepreneurial activities.

Apart from entrepreneurship persistence, the preexistence of different industries and labor divisions would also induce the differences of present-day entrepreneurship. Large-scale industries (Obschonka et al. 2018b), farmers, homeworkers and science-based industries (Fritsch et al. 2019) have been proven to lead to different psychological impacts on the latter entrepreneurial development and could act as either negative or positive role models for latter generations.

During crises and economic adverse conditions, entrepreneurship is thought to be crucial in restoring economy (Haltiwanger 2021) while regional entrepreneurship disparities are furthermore highlighted. Resilience is one quality greatly valued during times like this (Kuckertz et al. 2020). The study in Afghanistan shows that even during wars, entrepreneurs who are more resilient and self-efficient would be more active and successful in surviving hardships and even show greater entrepreneurial spirit (Bullough et al. 2014). Likewise, Obschonka et al. (2015) find there is a regional entrepreneurial personality profile which serves as a prospective factor when faced with crises.

However, it is also believed that crisis could be the source of innovation (Li-Ying and Nell 2020). When it comes to the ongoing worldwide COVID-19 pandemic, Davidsson et al. (2021) point out that as the demands for certain goods and services designed for coping in this pandemic situation increase, the entrepreneurial and business opportunities have also flourished, which could bring changes and reformation of entrepreneurship structure. Haltiwanger (2021) showed that there is an increase in new businesses in the U.S., mainly in the sectors of Ten 3-digit industries, non-store retail, personal services, professional, scientific and technical services and so on, while there are also geographical disparities in the formation of new businesses. Using start-up data of new businesses in eight U.S. states, Fazio et al. (2021) observe changes in the geography of entrepreneurship with the fact that

neighborhood with higher proportions of black residents and with higher median incomes saw higher startup rates. These challenges have pushed international entrepreneurship to the frontier of confronting the impact of COVID-19 (Zahra 2021), and is believed to bring potential changes to regional entrepreneurship distribution.

While these findings are indeed very promising to understand the psychological aspects of regional entrepreneurship differences, the precise mechanisms that drive the local psychological milieu to develop into entrepreneurship psychology is still under-researched.

2.2. CBD as a Driver for the Development of Entrepreneurship

As noted in the previous section, while psychological types seem to predict entrepreneurial behaviors at a regional level, the precise reasons and mechanisms of their regional impact remain to be explored. Human behavior is known to be strongly dependent on the cultural context, which is a core argument in evolutionary economics often dealing with entrepreneurship and is the cornerstone concept in culture-based development as well (Tubadji 2012; Tubadji et al. 2015).

Economic activities and choices are often based on the judgment of value. However, such judgement would usually be biased within their respective cultural contexts (Tubadji 2020). Thus, it would be empirically detrimental to leave out culture from the objective analysis of all socioeconomic outcomes. The culture-based development (CBD) paradigm, developed by Tubadji (2013, 2020), recognizes that every model would be underspecified if cultural factors are omitted. CBD also advocates that the value-free analysis of economic activities can be conducted correctly only if culture is correctly integrated in the empirical models and provides a comprehensive conceptual framework to study the crucial role of culture in the economic development. According to CBD, culture is “a proto-institution which determines the formation of all other institutions in the locality and drives the likelihood of aggregate human preferences and choices in all main socioeconomic activities in the localities” (Tubadji 2013). Thus, it could be expected that culture is a strong factor in entrepreneurship development (Huggins and Thompson 2020).

According to CBD, culture can be quantitatively approximated through four different types of local cultural capitals. Considering the physical nature of cultural capital, immaterial culture and material culture could be accordingly recognized as sub-components. These two sub-components are interrelated and only their combined effects could impact on socioeconomic development (Tubadji 2013). Further, to recognize the temporal nature of cultural capital, cultural capital is then divided into cultural heritage and living culture. Cultural heritage represents the total beliefs and norms passed from earlier social stages and would still have a major influential role today. Meanwhile, living culture is the part of cultural capital which is being produced at the present stage (Tubadji 2013). Cultural heritage and living culture are connected in a path-dependent manner (Tubadji 2013). Using this delineation allows us to study the respective roles of each type of cultural capital in economic development. An important aspect of CBD is that it uses cultural capital as a notion at the regional level. CBD defines the notion of cultural capital as referring to the potential ability of culture to impact on socioeconomic development (Tubadji 2012; Tubadji 2013). It is to be noted that following the original definitions of cultural capital and its mechanisms on an individual level, CBD adapts the notion of cultural capital and explores its mechanisms adapted for use on aggregate level rather than individual level, which makes it applicable for macro- and regional-level economic analysis (see Tubadji et al. 2015).

CBD has shown that culture is indeed a strong factor in explaining socioeconomic development. According to CBD, cultural capital exerts its power on socioeconomic outcomes through two gears. The first gear refers to how culture would determine the composition, quality, quantity, and structure of local human capital, while the second gear illustrates how local human capital would utilize local productive capital to impact on local efficiency (Tubadji 2013). Empirical applications of CBD in Greece (Tubadji and Nijkamp 2016), Germany (Tubadji and Pelzel 2015; Tubadji 2012), and Europe (Tubadji 2013) have shown cul-

ture would impact on local productivity. However, CBD further differentiated the roles of living culture and cultural heritage on economic development. Historical culture was identified to create a closed cultural milieu which would curb the process of innovation and creation and eventually hinder economic development (Tubadji 2012; Tubadji and Pelzel 2015). The impact of culture has been found to extend further with a richer dataset. Culture could impact on social well-being by improving cultural vitality, preventing local crimes (Tubadji 2013) as well as the overall labor force structure, leading to the improvement of overall quality of life (Tubadji and Nijkamp 2015). Specially, the study in the USA recognized the endogeneity of cultural industry in economic development, with results showing its impact on human capital (Tubadji 2013), which could aid the regional policy design.

It has to be noted that CBD has provided an insightful view into looking at the relationship between culture and entrepreneurship in detail. According to CBD, entrepreneurship can be seen as a channel by which culture could exert its impact on socioeconomic development. Theoretically, culture is a primary influential factor of individual entrepreneurial spirit development, as well as a proto-institutional factor on macro-level entrepreneurship development. Moreover, CBD argues apart from the economic determinants in a locality, the success in regional entrepreneurship will be affected both by cultural risk and by cultural institutional risk which entrepreneurs might encounter. Cultural risk refers to the attitudes towards entrepreneurship and whether this failure would be considered as a permanent loss by the local population, while cultural institutional risk refers to whether the human resource would be utilized with efficiency. Together, cultural risk and cultural institutional risk in a locality will decide whether entrepreneurship will develop (Tubadji 2013).

2.3. Entrepreneurship in China

The ownership transformation of Chinese domestic enterprises has greatly contributed to the economic success in China and proven that private-sector enterprises are more productive and competitive than state-owned enterprises, underlying the economic advantages of private entrepreneurship (Zhang et al. 2003; Zheng et al. 1998). According to the 2018/2019 Global Entrepreneurship Monitor China Report (The Entrepreneurship Research Center on G20 Economies 2019), concerning the entrepreneurship environment, China is ranked in fifth place among all G20 countries. Especially, culture and social norms is ranked at the third place, while physical infrastructure, services, and internal market dynamics are also reported to be strongly supporting entrepreneurship development in China. This result shows that China now has a favorable entrepreneurial environment in general. However, in China, the gap of private entrepreneurship between regions is still pronounced. Certain regions and provinces have more advantages for private enterprises to grow, while others relatively lag behind (Pan and Yang 2018). During the earlier stages of transformation, rural areas and eastern provinces were more active in developing agriculture-based individual businesses. However, with a coherent law-based transition strategy put in place, it became clear that coastal provinces in the east are more endowed with developing private entrepreneurship with the evidence showing that coastal provinces see the largest number of private enterprises and the highest share of employment in private enterprises, followed by central provinces then western provinces (Gregory et al. 2000). The disparities could also be observed in that some provinces have more efficient innovation-related enterprises than others (Du et al. 2019; Zhang et al. 2003). Explanations might reside in different level of the regional deregulation, intervention of local government (Zhou 2011), such as tax incentives (Liu et al. 2018) as well as financial supports and venture capital availability (Pan and Yang 2018). However, Yang and Xu (2006) claim that the economical level of provinces, urbanization rate, marketization, wage level, as well as unemployment rate hold no account for the disparity.

Concerning “soft factors” in entrepreneurship development, Kirby and Fan (1995) compared traditional Chinese values to general entrepreneurial attributes and found that traditional Chinese value system lacks creativity, innovation, and flexibility, but indeed

shares certain entrepreneurial values consisting of being positive toward changes and initiative and profit-orientated. Similarly, Wang (2012) suggested that Chinese culture is not fully supportive for nurturing entrepreneurship but does have several aspects which are in favor of the growth of entrepreneurship. For cross-country research, ethnic diversity (Howell 2018) and religion (Liu et al. 2019) are identified to be notable reasons for the disparities in entrepreneurship in China. Specially, *GuanXi* is a crucial part of Chinese business culture. It refers to a kind of interpersonal relationship with emphasis on continued exchange of favors (Luo 2000). As a Chinese indigenous construct (Chen and Chen 2004), *GuanXi* plays a rather unique and notable role in entrepreneurship as on the one hand it facilitates the development of Chinese enterprises (Anderson and Lee 2008), while on the other hand it could also have adverse effects, as it leads to a situation where business decisions are made based on the individual preferences (Li and Matlay 2006).

To conclude, cultural factors are found to be very important in Chinese entrepreneurship development. Yet, the detailed cultural mechanisms behind these impacts are still unclear. This motivates the need to adopt the filigree CBD definition for culture in order to advance the understandings of the reasons behind entrepreneurial behaviors in China.

3. Application of the CBD Model on Chinese Entrepreneurship

3.1. Model and Estimation Strategy

In order to examine the impact of both cultural heritage and living culture on the entrepreneurship development, using both standard economic data and cultural data obtained from *China Statistical Yearbooks* and the website of *Chinese Intangible Cultural Heritage*, the following CBD model is examined with OLS regression (1):

$$PEnt = \beta_0 + \beta_1HC + \beta_2K + \beta_3L + \beta_4IH_CC + \beta_5MH_CC + \beta_6IL_CC + \beta_7ML_CC + \sum_i \beta_i CONT + e \quad (1)$$

PEnt	the number of private enterprises
HC	human capital
K	physical capital
L	labor
IH_CC	immaterial historical cultural capital
MH_CC	material historical cultural capital
IL_CC	immaterial living cultural capital
ML_CC	material living cultural capital
CONT	control variables for controlling urban level and geographic factors

This model is motivated by CBD (Tubadji 2012, 2013) in the sense that it uses the CBD notion of cultural capital in its four dimensions as factors to explain an economic outcome of interest. It, however, is innovatively adapted for the case of entrepreneurship study, and thus allows us to examine the main hypothesis in this paper, which can be stated as:

Hypothesis 1 (H1). *Regional culture would have a significant impact on the regional entrepreneurship development.*

Five specifications were tested accordingly, starting from the basic model where cultural variables are initially excluded, which explores the relationship between economic factors and entrepreneurial behavior in Chinese provinces. Next, each cultural capital proxy of interest was individually added in, which allows for the comparisons of their respective impacts on entrepreneurial behavior. Ultimately, with both the living culture and cultural heritage proxies together, a clear picture of their strength could be obtained, as CBD suggests. Finally, relevant regional control variables were included to account for heterogeneity in the model.

3.2. Data and Definition of Variables

The panel dataset in this paper covers the period from the year 2010 to the year 2019 and consists of all 31 provinces in mainland China. The standard economic indicators as

well as indicators for living culture are obtained from *China Statistical Yearbooks*. Provincial-level immaterial cultural heritages and cultural sites are drawn from the website of Chinese Intangible Cultural Heritage. The economic indicators of 2013 and 2018 are obtained from the third and fourth *China Economic Census Yearbook* respectively, as nation-wide economic censuses were conducted during these two years and relevant data were no longer published in regular yearbooks. The number of provincial-level private enterprises is used to indicate local entrepreneurship. In this paper, private enterprise refers to for-profit economic organizations that are invested by or controlled by a natural person and is based on hired labor. In China, these organizations include the private proprietorship, private partnership, private limited liability company and sole proprietorship registered in accordance with the Company Law, Partnership Law, Interim Regulations on Private Enterprises and Sole Proprietorship Law enterprises. Intangible cultural heritage includes ten categories, namely, folk literature, traditional music, traditional dance, traditional opera/theater/drama, narrative/storytelling traditions, traditional sports/recreational activities/acrobatics, traditional arts, traditional handicraft skills, traditional medicine, and folk customs. The list of intangible cultural heritage is published by the Chinese Ministry of Culture while the list of historical cultural sites is published by the State Administration of Cultural Heritage and includes all historical sites which are deemed to be of significant historical, artistic, or scientific value. These sites consist of ancient temples and cemeteries, imperial palaces, historical towns and cities, traditional rural dwellings, and so on.

The main explanatory variables of interests are the four types of cultural capitals, which are denoted as IH_CC (standing for intangible cultural heritage), MH_CC (standing for material cultural heritage), IL_CC (standing for intangible living cultural capital) and ML_CC (standing for material living cultural capital). As CBD indicates, the historic parts of cultural capital are largely exogenous to current economic development, while living culture might be endogenous. Thus, the indicators used in this paper should be chosen with caution. The number of intangible cultural heritages is used to measure IH_CC, while the number of historical cultural sites is used to approximate MH_CC as intangible cultural heritages and historical sites were both produced more than 50 years prior to the current-stage economic development and should not suffer endogeneity problems in this paper. For the measurement of living culture, the number of performances at art venues is used to approximate IL_CC and the total circulations of books in public libraries measures ML_CC. Book circulations should be considered to be independent of local economic status as book loaning is mostly free in Chinese public libraries. In most cases, the indicator of performances at art venues could not be considered an entirely exogenous economic factor. However, in China, the amount of money individuals spend on art performances is relatively low compared with the income level within each province as it is a policy goal of China to bring art to people by keeping the costs on art performances affordable. Thus, this indicator could be considered to suffer from no endogeneity problem in the context of China.

The dependent variable in this paper is PEnt, which is measured by the number of regional enterprises. HC is measured by the percentage of citizens who have attained education with degrees from a university, college, or specialized higher education school. L is measured by the percentage of urban employees. Controlling variables include UL, which is the percentage of urban citizens in the total population. Dummy variables are included to control the geographic variances of Chinese provinces. It is to be noted that geographical segmentation is not strictly based on the spatial features of each province. According to the National Bureau of Statistics of China, it is divided according to the economic development of each province, as provinces in the same group would be expected to encounter the same economic issues resulting from their geographical features. This paper is a cross-country study, which could be considered to exclude the possible institutional differences generated under different culture backgrounds, thus avoiding what CBD calls cultural relativity across space, expressed as Platonic cultural bias in empirical terms (see [Tubadji 2012, 2020](#)).

3.3. Descriptive Evidence

Table 1 presents the correlations of all independent variables and the number of private enterprises. All cultural variables hold positive and comparably strong correlations with PEnt. Among them all, the strongest correlations could be seen between the ML_CC and PEnt, with a notable correlation as high as 0.8., which is even stronger than the correlations of standard economic variables. Moreover, the correlation between PEnt and IH_CC as well as IL_CC also reach 0.522 and 0.517, respectively. This result suggests a positive and crucial role of cultural capital in the regional private entrepreneurship development, especially regarding living culture. For standard economic factors, K is the one showing the most prominent contribution to entrepreneurship development. While based solely on the correlation results, HC and L hold relatively weaker relationships. It is to be noted that the correlations between historical cultural variables and HC are both negative, while for living cultural variables, the correlation results are both shown to be positive. This same pattern could be observed from the correlation results of UL. Judging from the correlation results only, we could expect their different roles for the entrepreneurship development, as expected by CBD.

Scatter plots are provided in Figures 1–4 to show the relationships between each cultural variable and regional entrepreneurship with their corresponding regression lines. The correlation of ML_CC and PEnt shows a strong and positive relationship. For IL_CC, a large number of observations mainly cluster to the lower-left side of the scatter plot, but still shows a generally positive relationship, while the relationship of IH_CC is comparably clear with an upward trend between the two variables. Concerning the correlation between MH_CC and entrepreneurship, for provinces with 300 cultural sites or under, the correlation is clearer, showing an upward trend along with the increasing of cultural sites, while the two provinces with the largest amounts of cultural sites actually witness a relatively weak relationship between material cultural sites and entrepreneurship.

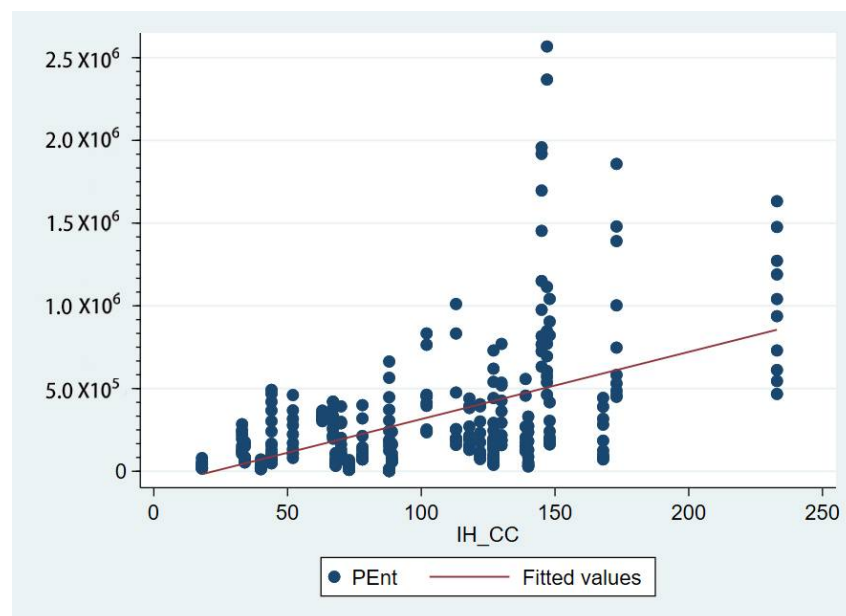


Figure 1. Relationship between intangible cultural heritages and entrepreneurship. Source: *China Statistical Yearbooks, China Economic Census Yearbook* and the website of Chinese Intangible Cultural Heritage.

Table 1. Correlations between main variables.

	PEnt	K	L	HC	IH_CC	MH_CC	IL_CC	ML_CC	Urban Level	Middle	West	Northeast
PEnt	1											
K	0.758 ***	1										
L	0.299 ***	−0.00839	1									
HC	0.198 ***	−0.0627	0.871 ***	1								
IH_CC	0.522 ***	0.524 ***	0.0713	−0.103	1							
MH_CC	0.269 ***	0.472 ***	−0.106	−0.162 **	0.662 ***	1						
IL_CC	0.517 ***	0.415 ***	0.266 ***	0.194 ***	0.351 ***	0.301 ***	1					
ML_CC	0.871 ***	0.648 ***	0.293 ***	0.125 *	0.533 ***	0.241 ***	0.446 ***	1				
Urban Level	0.392 ***	0.145 *	0.799 ***	0.807 ***	−0.0602	−0.148 **	0.267 ***	0.389 ***	1			
middle	−0.200 ***	0.019	−0.342 ***	−0.254 ***	−0.026	0.284 ***	−0.166 **	−0.217 ***	−0.292 ***	1		
west	−0.271 ***	−0.235 ***	−0.306 ***	−0.259 ***	−0.0414	−0.203 ***	−0.205 ***	−0.267 ***	−0.484 ***	−0.0775	1	
northeast	−0.134 *	−0.107	−0.0504	0.0374	−0.341 ***	−0.177 **	−0.107	−0.0949	0.0945	−0.260 ***	−0.209 ***	1

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Source: China Statistical Yearbooks, China Economic Census Yearbook and the website of Chinese Intangible Cultural Heritage.

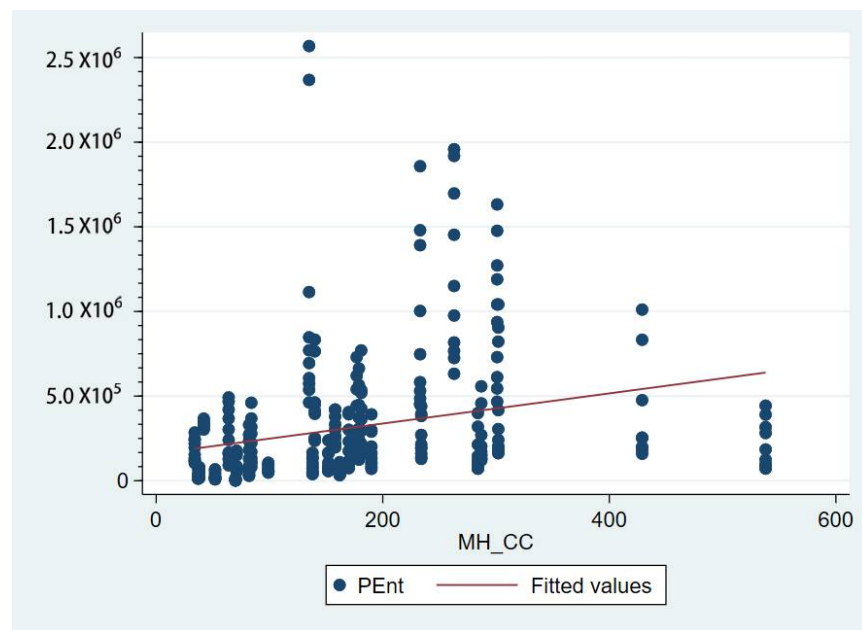


Figure 2. Relationship between cultural sites and entrepreneurship. Source: *China Statistical Yearbooks*, *China Economic Census Yearbook* and the website of Chinese Intangible Cultural Heritage.

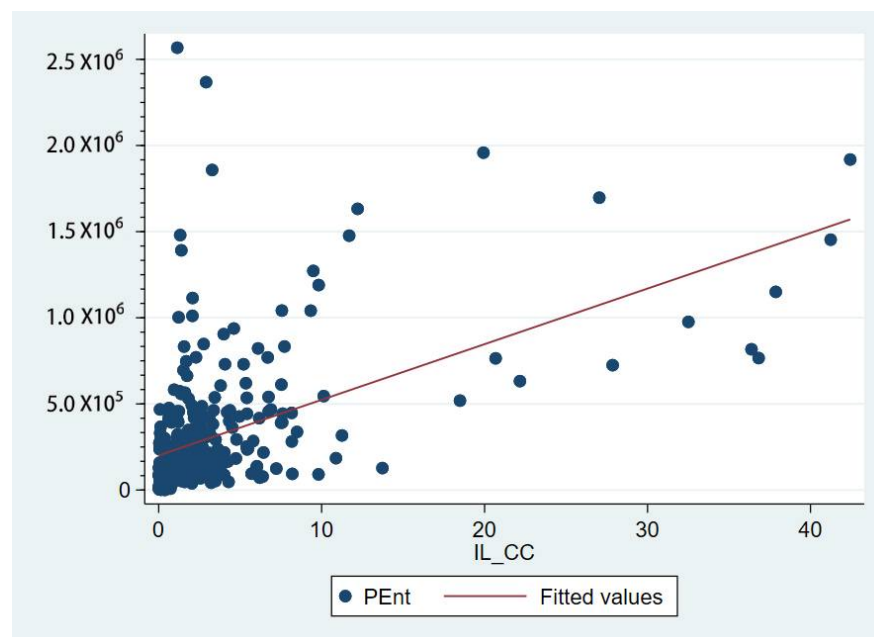


Figure 3. Relationship between performances in art venues and entrepreneurship. Source: *China Statistical Yearbooks*, *China Economic Census Yearbook* and the website of Chinese Intangible Cultural Heritage.

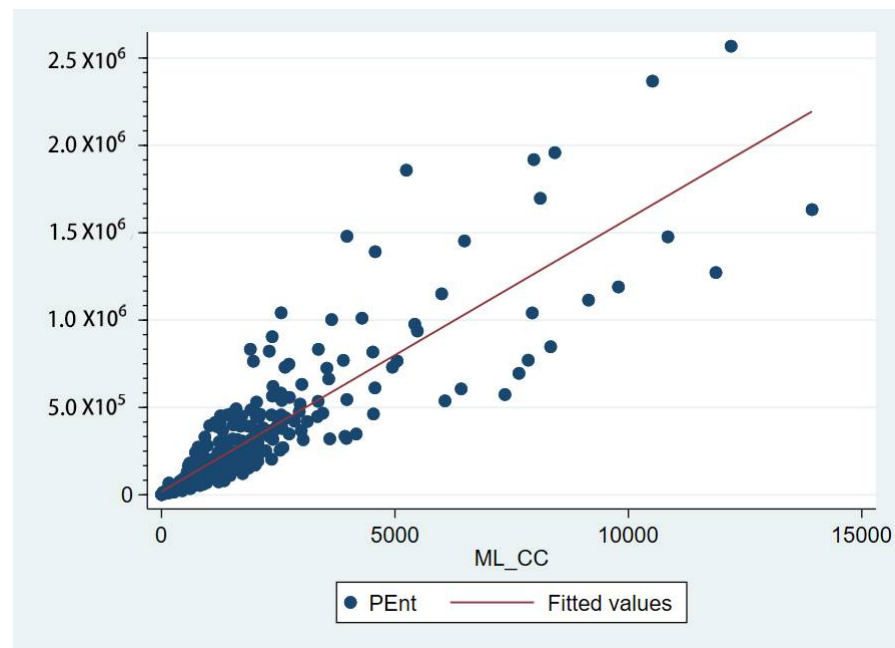


Figure 4. Relationship between circulation of books and entrepreneurship. Source: *China Statistical Yearbooks, China Economic Census Yearbook* and the website of Chinese Intangible Cultural Heritage.

3.4. Results

Table 2 shows the result of the model with five specifications. The first specification shows the impact of standard economic determinants on entrepreneurship development. The result of this specification shows that 67% of the overall growth of private enterprises is driven by K and L. The second specification examines how much of the growth could be explained by historical cultural capital, while the third one examines the impacts of both historical and living cultural capital on regional entrepreneurship. The total explanatory power of the third specification rises to 85.4%, showing that cultural capital is indeed a very important factor for entrepreneurship development. It should be noted that in specification 3, after living culture capital variables are introduced, L is no longer a significant factor, while HC shows a significant and positive influence over entrepreneurship. This indicates when the influence of living cultural is taken into consideration, HC is actually a very important factor in the local entrepreneurship development. However, the significance of labor dropped, which suggests L is not actually a driving force of local entrepreneurship. Moreover, after introducing the living cultural variables, the coefficient of MH_CC reduced by half, suggesting the existence of living culture mitigates the negative impact from MH_CC. Regarding IH_CC, the result from specification 5 indicates there is actually no impact from IH_CC on regional entrepreneurship development. Instead, the explanation lies in their respective region-fixed effect, which is controlled by three geographic control variables, namely, west, middle, and northeast. However, the estimators of geographic variables are significantly negative, suggesting the growth of enterprises in the western, middle, and north-eastern parts of China is hindered by their locations. Among them all, the northeast is where geographical features would make them least advantageous in entrepreneurship development, which is consistent with what we know about north-eastern part of China, as social and crime issues are thought to impair their economy. On the contrary, similar to other coastal regions in the world, the eastern part of China is mainly located by the sea, which is a strong geographic advantage for economic and entrepreneurship developments. The geographical features of Chinese provincial entrepreneurship are illustrated in Figure 5a,b.

Table 2. Effects of cultural capital on entrepreneurship.

Variables	1	2	3	4	5
K	24.152 *** −1.726	23.132 *** −2.041	11.717 *** −1.694	11.916 *** −1.711	11.870 *** −1.695
L	2.506×10^{10} *** -5.44×10^9	1.550×10^{10} *** -5.16×10^9	-3.66×10^9 -3.28×10^9	-2.53×10^9 -3.64×10^9	-4.57×10^9 -4.00×10^9
HC	−477,030.07 −405,921.93	178,819.75 −409,157.66	962,665.209 *** −289,868.65	1,099,878.268 *** −295,936.99	1,240,621.867 *** −326,731.12
IH_CC		2168.017 *** −359.75	657.436 ** −265.368	550.766 * −317.967	384.99 −325.179
MH_CC		−739.720 *** −180.895	−337.122 *** −108.328	−335.585 *** −111.665	−306.805 *** −114.299
IL_CC			5973.026 ** −2699.13	5963.003 ** −2680.08	5462.350 ** −2727.07
MH_CC			101.325 *** −16.019	104.103 *** −17.212	104.543 *** −17.347
Urban_Level				−150,462.40 −133,353.28	−213,544.46 −144,277.43
middle					−34,801.625 * −19,626.78
west					−35,066.239 * −20,978.24
northeast					−69,486.392 *** −23,215.32
Constant	−332,850.437 *** −37,646.91	−364,230.703 *** −33,568.81	−165,435.329 *** −24,754.96	−110,251.054 ** −53,987.71	−22,794.36 −64,982.26
Observations	310	310	309	309	309
R-squared	0.67	0.709	0.854	0.855	0.857

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Source: China Statistical Yearbooks, China Economic Census Yearbook and the website of Chinese Intangible Cultural Heritage.

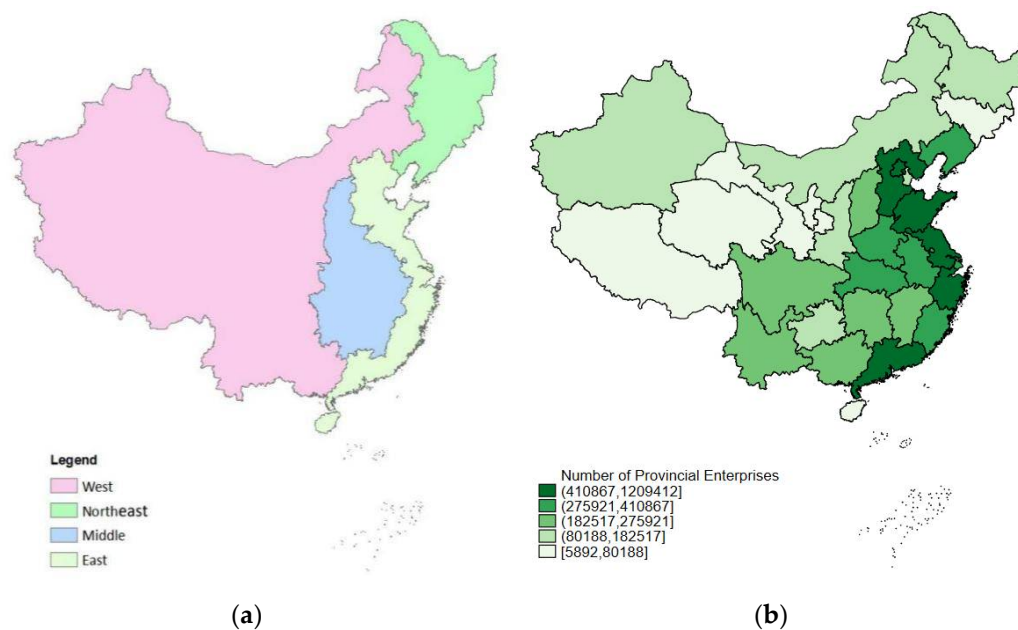


Figure 5. (a) Geographical divisions of China's mainland economic zones (excluding Hong Kong, Macao, and Taiwan provinces); (b) Number of enterprises in each province (excluding Hong Kong, Macao, and Taiwan provinces). Note: In (b), the numbers of provincial enterprises are calculated as the average numbers of enterprises in each province from period 2010 to 2019. Source: National Bureau of Statistics, *China Statistical Yearbooks*, and *China Economic Census Yearbooks*.

That regional entrepreneurship could be driven by living cultural capital, while the historical cultural capital actually hinders the local development of entrepreneurship. This is consistent with CBD expectations, as historical cultural capital may create a closed local cultural milieu which would be detrimental for economic growth. Moreover, this model also captures the effect of the mechanism of cultural capital impacting on the formation of HC. When taking living culture into consideration, results show HC is a strong factor in explaining the growth of entrepreneurship, as it might act as the source of innovation and creativity. However, more studies are to be carried out in order to examine this mechanism in China.

Overall, these results confirm that culture is indeed a factor greatly impacting on the entrepreneurial behaviors on regional level, which supports the theoretical expectations of CBD. Moreover, at the provincial level of China, as it has also been explored by CBD, depending on the type of cultural capital, the directions of cultural impact vary across space.

4. Limitations

This paper is a preliminary operationalization of CBD analysis on Chinese entrepreneurship study. Following the CBD approach, cultural capitals are divided into four groups according to their nature, which gives us the advantage of identifying their respective roles in entrepreneurship development. However, this paper is limited in addressing the problem of endogeneity of living culture. As China has recognized the vital role of culture and is currently investing in living culture building and material living, cultural capital could be, on the one hand, highly dependent on economic conditions, while, on the other hand, it could come from immaterial living culture. Future research should aim to address this issue with properly chosen instrumental variables.

Furthermore, this paper fails to identify the profound impact of culture on the choice concerning enterprise types, as culture is involved in the formation of all economic decisions. Studies addressing this issue could benefit us in the understanding of the relationship of Chinese culture and its economic and business structure. Moreover, in this paper, entrepreneurship activity is solely limited to the formation of new businesses, while entrepreneurship and entrepreneurial spirits are connected to a broad range of activities, all of which highlight the individual attitudes and mindsets of being active, creative and risk-willing. In this regard, we could anticipate that culture also plays a vital role in various entrepreneurship-like economic decisions and activities, and further research should address issues in this aspect accordingly.

5. Conclusions

From the results of this paper, CBD appears to be empirically applicable in capturing the impact of culture on entrepreneurial development in China from a local psychological milieu perspective. Culture is clearly a crucial factor to drive Chinese entrepreneurship activities, resulting in large regional differences. However, living culture and cultural heritage perform different roles in that living culture acts as a booster for entrepreneurship development, while cultural heritage impedes entrepreneurship development. This result is consistent with CBD expectations, which suggest that the closeness of historical cultural milieu would suppress economic vitality.

Concerning the above two aspects, as an early research on the role of culture in Chinese regional entrepreneurship behavior, this paper highlights the applicability of CBD on Chinese entrepreneurship development analysis and further underlines its potential in various aspects of regional economic behavior studies.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The author declares no conflict of interest.

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