

Entrepreneurship, Government Regulation and the Performance of Ecological Civilization Construction

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ABSTRACT

Entrepreneurship is a key factor of ecological civilization construction, which is closely related to the government regulation. Based on the panel data of 30 provinces in China from 2012 to 2016, this paper empirically examines relationship between entrepreneurship and performance of ecological civilization construction, as well as the regulatory effect of institutional environment on the relationship. The result shows that the development of innovation entrepreneurship and venture entrepreneurship can significantly improve the performance of ecological civilization construction respectively, government regulation has negative impact on the relationship. Therefore, in the new stage of China's economic development, reducing government regulation is very important to promote entrepreneurship and improve the performance of ecological civilization construction.

Keywords: *innovation entrepreneurship, venture entrepreneurship, performance of ecological civilization construction, government regulation*

1. INTRODUCTION

In the past 40 years since the reform and opening-up, China's economic development has made remarkable achievements, at the same time, the contradiction between ecological environment and economic development is becoming more and more prominent, and the direct cause of ecological civilization construction is an increasingly serious environmental problem. The construction of ecological civilization firstly appeared in the report of the 17th National Congress of the Communist Party of China and the 18th National Congress of the Communist Party of China further regarded the construction of ecological civilization as an important part of the overall layout of the "five-in-one" socialist construction with Chinese characteristics. In March 2018, the construction of ecological civilization became an important part of Constitution, and in May 2018, at the National Ecological Congress Chinese President Xi Jinping pointed out that the construction of ecological civilization is a fundamental plan related to the development of the Chinese nation, and that Chinese civilization has always respected nature, loved nature and has been pregnant with a rich ecological culture for more than 500 years. The rise or fall of a civilization is closely tied to its relationship with nature. In October 2018, the report of the 19th National Congress of the Communist Party of China clearly pointed out that building an ecological civilization is vital to sustain the Chinese nation's development. We must realize that lucid waters and lush mountains are invaluable assets and act on this understanding. This fully shows that the construction of ecological civilization plays an important role in the development of China's economy and society in the new period.

Humans play the key role to protect the ecological environment. Ecological civilization requires government, enterprises and citizens work together. Enterprises is the

main body of ecological civilization construction which plays a crucial role. The external driving path of ecological civilization construction lies in the restriction of laws, regulations and other external systems. Since the reform and opening-up, China's environmental protection policies and regulations have been continuously improved. The internal driving path of ecological civilization construction is that enterprises carry out ecological civilization construction through comprehensive utilization of technological innovation, organizational innovation and process innovation, while realizing economic benefits and taking social benefits into account. In terms of the nature of property rights, state-owned large and medium-sized enterprises are the key objects of the external restriction mode. They have made great efforts to participate in the construction of ecological civilization, and have made some achievements in the construction of ecological civilization. However, private enterprises, though large in number, are small in scale and lack of corresponding innovative resources, are powerless to face the construction of ecological civilization. In order to solve the pain and difficulty of private enterprises participating in the construction of ecological civilization, the key is to give full play to entrepreneurship. Limited to the space, the entrepreneurship studied in this paper is only limited to the private entrepreneurship, but not the state-owned entrepreneurship. In 2018, at the forum of private enterprises, Chinese President Xi Jinping stressed that for a long time, the majority of private entrepreneurs organized and led millions of laborers to work hard, work hard and innovate continuously with the pioneering spirit of innovation and perseverance. China's economic development can create a miracle in China, and private enterprises have made great contributions. In the process of ecological civilization construction, the exertion of entrepreneurship has far-reaching significance.

The role of entrepreneurship is closely related to the institutional environment, such as government regulation,

market structure and so on. Among them, government regulation is considered to be the most influential institutional factor. On the one hand, government regulation is a supplementary means of market mechanism, which can effectively solve the problems of market failure and “externality”, on the other hand, strict government regulation may inhibit economic development. Zhuang Ziyin^[1] believes that excessive government regulation is the institutional obstacle to the emergence and development of entrepreneurship. By studying the influence of property rights structure on entrepreneurship, Xie Weimin^[2] found that government control is not conducive to the cultivation of private entrepreneurship. Although the reform and opening-up has created a relatively good environment for the development of entrepreneurship, the Chinese entrepreneurship has been in a long-term slump. Although China’s private enterprises have made outstanding achievements in business model innovation, there is still a certain gap in technological innovation with developed countries such as Europe and the United States. China’s entrepreneurship is still in the stage of unbalanced and inadequate development. The cultivation of entrepreneurship and its effect on the performance of ecological civilization construction are closely related to the level of government regulation.

There are many literatures on the construction of ecological civilization. There are many studies on the evaluation of the achievements of ecological civilization construction from the perspective of performance, but there are few studies on how the external environment of the enterprise affects the performance path of ecological civilization construction. Although Li Hongbo^[3] clarifies the importance of entrepreneurship for the construction of ecological civilization, there is no relevant empirical research. Based on the definition of entrepreneurship and the theory of economic growth, this paper combs the action path of innovation entrepreneurship and venture entrepreneurship on the performance of ecological civilization construction, and studies the influence of government regulation on the relationship between entrepreneurship and the performance of ecological civilization construction, in order to enrich the existing research results on the construction of ecological civilization. This paper provides some suggestions on how to stimulate the entrepreneurship and reduce the government’s interference in the enterprise behavior.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESIS

2.1. *Entrepreneurship and Ecological Civilization Construction*

Since the 20th century, with the continuous expansion of enterprise organization sale and the increasing role of entrepreneurs in economic development, economists began to pay attention to the study of entrepreneurs and entrepreneurship, and the connotation theory of entrepreneurship has become increasingly rich, becoming an important concept in economic theory. As for the definition of entrepreneurship, there are three mainstream school views: the neoclassical school, represented by Knight, links

enterprises with entrepreneurs, and holds that entrepreneurship is more about dealing with uncertainty and taking on risks^[4], and the German school emphasizes the innovative spirit of entrepreneurs, and believes that only when entrepreneurs innovate, can they break monopoly and tap potential profits, thus “creative destruction” is the habitual path of economic cycle, which promotes the revolutionary destruction of economic structure from the inside and promotes economic development^[5]. The Austrian school based on the market structure to study the role of entrepreneurs function, the main contribution of entrepreneurs is to find profit opportunities from the market^[6]. The inconsistent definition of entrepreneurship not only reflects the richness and diversity of the connotation of entrepreneurship, but also shows the importance of entrepreneurship in theoretical research. Based on Zeng Cheng’s^[7] view, this paper divides entrepreneurship into innovation entrepreneurship and venture entrepreneurship, and puts forward relevant research hypotheses. In the part of robustness test, we take survival entrepreneurship and opportunity entrepreneurship as the alternative variables of entrepreneurship for further empirical test.

Although there are few empirical studies on entrepreneurship and ecological civilization construction performance, the importance of entrepreneurship is the internal power to stimulate entrepreneurs to identify market opportunities, establish private enterprises and pursue innovation continuously. The research of foreign scholars shows that entrepreneurship can promote technological innovation, create new jobs, discover new markets, and is an important factor to promote economic growth^[4,5]. The research of domestic scholars also shows that entrepreneurship plays an important role in promoting China’s economic growth.

Ecological civilization is a post industrial civilization developed through human reflection and abandonment of environmental pollution and ecological destruction brought by industrial civilization^[8]. The goal of ecological civilization construction is to build China into a strong, democratic, civilized, harmonious and beautiful socialist modernization country. The performance of ecological civilization construction is the effective output to achieve this goal. Liu Surong^[9] and others believe that the construction of ecological civilization is a complex and systematic project. To evaluate the performance of ecological civilization construction, we need to objectively reflect the process and performance of ecological civilization construction from many aspects. The construction of ecological civilization is an important part of “five in one” strategic layout of socialism with Chinese characteristics. Starting from the broad connotation of “five in one”, this paper evaluates the performance of ecological civilization construction based on five aspects of economy, society, environment, culture and politics. There is a significant positive spatial correlation between the exertion of entrepreneurship and the regional good living standard. Based on the above analysis, the following assumptions are proposed:

H1a: Innovation entrepreneurship has a significant positive impact on the performance of ecological civilization construction.

H1b: Venture entrepreneurship has a significant positive impact on the performance of ecological civilization

construction.

2.2. The Influence of Government Regulation on the Relationship between Entrepreneurship and the Performance of Ecological Civilization Construction

Government regulation has a great influence on the exertion and stimulation of entrepreneurship. Devin’s^[10] research on the British government’s intervention in entrepreneurial behavior with the help of new labor policy shows that government intervention is difficult to achieve the purpose of promoting entrepreneurship in poor areas. Chen Yi’an and Zhao Xueping^[11] use the provincial panel data of 2011-2015 to find that the impact of government regulation on innovation entrepreneurship is negative. Cheng Junjie^[12] found that there is a significant negative correlation between the proportion of government financial expenditure in GDP and entrepreneurship innovation spirit; Shao Chuanlin^[13] and other studies found that the distorted relationship between government and enterprise and the excessive market intervention mechanism and organizational mechanism of enterprises, and then affect the entrepreneurship. Zhang Feng^[14] and others believe that if government regulation interferes with the market too much, it will affect the internal innovation mechanism and organizational mechanism of enterprises, and then affect the entrepreneurship. As for the relationship between government regulation and economic development, Dreher A and gassebner^[15] show that if government regulation is too strict, it will inhibit economic development.

Entrepreneurship has an important impact on the performance of ecological civilization construction, but its role is closely related to the local government regulation. For a long time, China has implemented a government-led development model, and improper intervention of governments at all levels of the market has always existed. Local governments hold many key elements in the process of ecological civilization construction, but these key elements are hard to obtain by private enterprises. In the context of financial decentralization, local governments often support the real estate industry, construction industry

and other projects with immediate political achievements, but the support for environmental protection projects that need long-term investment and have slow results is not enough, which will inevitably lead to the failure of the construction of ecological civilization to achieve the expected results. At the same time, the intervention of local government on market behavior and the corruption of officials seriously dampen the initiative of entrepreneurs in innovation and entrepreneurship, and then have a negative impact on the performance of ecological civilization construction. Based on the above analysis, the following assumptions are proposed:

H2a: Government regulation has a negative impact on the relationship between innovation entrepreneurship and ecological civilization construction performance.

H2b: Government regulation has a negative impact on the relationship between venture entrepreneurship and ecological civilization construction performance.

3. RESEARCH DESIGN

3.1. Data Source and Description

The data of the dependent variable in this paper comes from the performance evaluation index of ecological civilization constructed by principal component analysis. The process of index generation is as follows: firstly, starting from the broad connotation of ecological civilization construction, the performance evaluation system of ecological civilization construction, including ecological economy, culture, society, environment and political civilization construction, is constructed. Secondly, based on five dimensions, 25 sub indexes are selected as initial variables, as shown in Table 1. Thirdly, the performance model of ecological civilization construction is constructed by principal component analysis, and the comprehensive scores of ecological civilization construction performance of 30 provinces in China from 2012 to 2016 are obtained. Due to the limitation of space, this paper does not list the specific construction process of the performance model of ecological civilization construction. The data of 25 sub indicators are derived from China Statistical Yearbook and EPS data platform.

Table 1 The initial index of performance evaluation of ecological civilization construction

Basic dimensions	Specific Indicators	Unit
	X1 GDP Per Capita	Yuan
Construction of Ecological Economic Civilization	X2 Energy Consumption Per Unit of GDP	Ton of standard coal/million yuan
	X3 Per Capita Disposable Income of Urban Residents	Yuan
	X4 The Value Added of the Tertiary Industry as A Proportion of GDP	
	X5 Engel Coefficient for Urban Households	%
Construction of Ecological Cultural Civilization	X6 Total Circulation of Public Libraries	10000
	X7 Comprehensive Utilization Rate of Industrial Solid Waste	%
	X8 Internet Penetration	%
Construction of Ecological Social Civilization	X9 Organization of Various Lectures	Times
	X10 Number of Internet Users	10000
	X11 Registered Unemployment Rare in Towns	%
	X12 Investment in Environmental Pollution Control as A Proportion of GDP	

	X13 Number of Years of Education Per Capita	Year
	X14 Number of Public Transport Vehicles Per 10,000 People in the City	Standard
	X15 Urban Water Penetration	%
Construction of Ecological Environmental Civilization	X16 Arable Land Per Capita	Acres
	X17 Afforestation Area Per Capita	Thousand hectares
	X18 Urban Sewage Treatment Rate	%
	X19 The Innocuous Processing Capacity of Urban Life	Tons/day
	X20 Forest Cover	%
	X21 Number of Local Laws and Regulations on Environmental Protection Promulgated in that year	Department
Construction of Ecological Political Civilization	X22 Number of Administrative Regulations issued for Environmental Protection Departments in the current Year	Department
	X23 Number of Letters Visited	Pieces
	X24 Number of Visitors	People
	X25 Three Simultaneous Data	Ten thousand yuan

The data of independent variable and adjusting variable in this paper are derived from EPS data platform, China Economic and Social Network Statistical Database, WIND database and China Statistical Yearbook. Some missing data are sorted out manually. In view of the large number of missing data in Tiber Autonomous Region, the statistics of the Tibet Autonomous Region are deleted. In the data processing, the data is reduced.

3.2. Variable Setting and Model Building

3.2.1. Dependent Variable

The performance of ecological civilization construction is a reflection of the achievements of ecological civilization work, and its score can reflect the strength of the capacity of ecological civilization construction of all provinces in China. In this paper, the comprehensive score of ecological civilization construction level (Performance) is regarded as the dependent variable.

3.2.2. Independent Variables

Based on the viewpoint of Cheng Junjie^[12], this paper divides entrepreneurship into innovation entrepreneurship and venture entrepreneurship. Among them, innovation entrepreneurship is measured by the number of patent applications filed in a region, as the number of patent applications represents the results of the scientific invention and innovation process of entrepreneurs, which can reflect the pursuit of new products of enterprises. Venture entrepreneurship is measured by the proportion of individual and private sector employees in the total number of employees in society as a whole, since entrepreneurial activities are the starting point of entrepreneurship and the first step of formal entrepreneurial activities.

3.2.3. Adjusting Variables

The adjusting variable in this paper is government regulation.

The degree of government regulation (Fegdp) is measured by the proportion of fiscal expenditure in GDP. The higher the proportion of fiscal expenditure in a region, the higher the position of the regional government in the market, the more economic intervention.

3.2.4. Control Variables

The control variables of the paper include: economic growth rate, the degree of openness and the degree of investment openness. Among them, the economic growth rate(Ggdp) is measured by the growth rate of GDP; the degree of openness(Expo) is measured by the ratio of imports and exports to GDP, and the degree of investment openness(FDI) is measured by the proportion of registered investment of foreign-funded enterprises to GDP.

3.2.5. Model Settings

Based on the above theoretical analysis, research hypothesis and variable setting, in order to test the impact of innovation entrepreneurship on the performance of ecological civilization construction and the regulatory role of government regulation on the relationship between innovation entrepreneurship and the performance of ecological civilization construction, this paper constructs the model as follows:

$$Performance_{it} = \alpha + \beta_1 Patent_{it} + \beta_2 Patent_{it} * Fegdp_{it} + \beta_3 Ggdp_{it} + \beta_4 Expo_{it} + \beta_5 Fdi_{it} + \mu_{it}$$

Among them, $i=1, \dots, 30$; $t=2012, \dots, 2016$, $Patent_{it}$ represents the innovation entrepreneurship of the i th province in the T year, $Ggdp_{it}$, $Expo_{it}$, Fdi_{it} are all control variables, representing the economic growth rate, the degree openness and the degree of investment openness of the i th province in the T year respectively. μ_{it} is a random error term.

In the empirical test of the main effect and regulatory effect of venture entrepreneurship on the performance of ecological civilization construction, the proportion of the number of employees of individual and private enterprises as a proportion of employees of the whole society is used to replace the $Patent_{it}$ in the above model.

The definition of variables in this paper is shown in Table 2.

Table 2 Definition of Variables

Variable type	Variable name	Variable symbol	Variable definition
Dependent Variable	Performance of Ecological Civilization Construction	Performance	The Comprehensive Score Obtained by Dimension Reduction with Principal Component Analysis
Independent Variable	Innovation Entrepreneurship	Patent	Number of Regional Patent Applications
	Venture Entrepreneurship	Employee	The Proportion of the Number Employees in Individual and Private Enterprises in the Whole Society
Adjusting Variable	Government Regulation	Fegdp	Proportion of Fiscal Expenditure in GDP
Control Variable	Economic Growth Rate	Ggdp	Growth Rate of GDP
	Degree of Openness	Expo	Proportion of Import and Export in GDP
	Investment Openness	Fdi	Proportion of Total Registered Investment of Foreign-Funded Enterprises in GDP

4. ANALYSIS OF EMPIRICAL RESULTS

4.1. Descriptive Statistical Results

The descriptive statistical results based on the panel data model of 30 provinces in China from 2012-2016 are shown in Table3.

Table 3 Descriptive Statistical Analysis of Variables

Variable	Symbol	Average Value	Standard Error	Minimum Value	Maximum Value
Performance of Ecological Civilization Construction	Performance	0	1.474	-2.089	5.173
Innovation Entrepreneurship	Patent	10.51	1.385	7.002	13.13
Venture Entrepreneurship	Employee	0.319	0.156	0.137	0.858
Government Regulation	Fegdp	0.248	0.103	0.118	0.623
Economic Growth Rate	Ggdp	8.951	2.016	3	13.60
Degree of Openness	Expo	411.8	450.4	24.45	2051
Investment Openness	Fdi	0.049	0.049	0.008	0.261

According to table3, the mean value, standard error, maximum value and minimum value of each major variable are significantly different. There is a large gap between the maximum and the minimum of the comprehensive score of the performance level of ecological civilization construction, which indicates that there are obvious differences in the performance of ecological civilization construction between different provinces in China. There is also a big gap, between the maximum value and the minimum value of the index “the number of patent applications”, which is used to measure innovation entrepreneurship. Compared with the innovation entrepreneurship, the regional difference of venture entrepreneurship is smaller. As far as government regulation is concerned, the difference between the maximum and minimum value of fiscal expenditure in the proportion of GDP is 4.28 times, which shows that the intervention degree of governments in different regions is quite different. In addition, there are significant differences in the indicators of control variables, especially in the degree of openness.

4.2. Regression Analysis of Entrepreneurship and Ecological Civilization Construction Performance

Model 1 is the regression model of innovation entrepreneurship and ecological civilization construction performance. Model 1 data shows that there is a significant positive correlation between innovation entrepreneurship and ecological civilization construction performance($\beta = 0.798, t = 16.721$), that is, innovation entrepreneurship can significantly improve the overall level of ecological civilization construction performance, which means that hypothesis H1a is established. This is consistent with relevant theories. Both neoclassical economic growth theory and endogenous growth theory consider that innovation is the source and decisive factor of economic growth^[16]. The exertion of the innovation entrepreneurship promotes the innovation activities of enterprises, and helps enterprises to participate in the process of ecological civilization construction better. Entrepreneurs have the courage to challenge, dare to be the first, and actively undertake social

responsibilities. By identifying and utilizing market opportunities, they seek for enterprise development programs that are suitable for their own development and compatible with social public goals such as energy conservation and emission reduction, pollution prevention and control, while promoting the high-quality growth of regional economy, they also take into account the protection and governance of ecological environment, so as to achieve improvement of ecological civilization construction performance rise.

Model 2 is the regression model of venture entrepreneurship and ecological civilization construction performance. Model 2 data shows that there is a significant positive correlation between venture entrepreneurship and ecological civilization construction performance ($\beta = 3.785$, $t = 4.431$), that is, venture entrepreneurship significantly promotes the overall level of ecological civilization construction performance, which means that hypothesis H1B is established. The stimulation of venture entrepreneurship effectively promotes the process of ecological civilization construction. The exertion of venture entrepreneurship is conducive to the exertion of risk-taking spirit, making the enterprise dare to go out of the “comfortable area” of operation, carrying out certain entrepreneurial activities, and making corresponding management plan for the risks in entrepreneurial activities^[17], so as to improve the overall level of ecological civilization construction performance.

Model 3 analyzes the regulatory role of government regulation in the relationship between the performance of ecological civilization construction and the innovation entrepreneurship by regressing the multiplier of the two indicators of entrepreneurship, entrepreneurship and government regulation has a significant negative regulatory effect on the relationship between entrepreneurship and the performance of ecological civilization construction ($\beta = -0.265$, $t = -3.077$), which means that hypothesis H2A is tenable. The higher the degree of government regulation, the deeper the government’s involvement in the market company, the more resources the government devotes to the provision of security, law and other facilities, indirectly affecting the use of resources by entrepreneurs. Entrepreneurs cannot get enough resources to carry out innovation activities related to environmental protection, which affects the social responsibility of enterprises and the improvement of ecological civilization construction performance.

Model 4 analyzes the regulatory role of government regulation in the relationship between the construction performance of ecological civilization and entrepreneurship through regression of the intersection of entrepreneurship, entrepreneurship and government regulation as well as the construction performance of ecological civilization. The results show that government regulation plays a significant negative regulatory role in the relationship between entrepreneurship and ecological civilization construction performance ($\beta = -29.510$, $t = -11.470$), which means that hypothesis H2B is established. The higher the degree of government regulation, the more the government intervenes in the market. The ability of private entrepreneurs to obtain resources is not dependent on the market, but largely by the relationship between enterprises and the government. The government’s excessive intervention will inevitably discourage the entrepreneurial enthusiasm of entrepreneurs, and even if they have the intention, they will not be able to

carry out the construction of ecological civilization.

Table 4 Empirical Results

Independent Variable	Dependent Variable			
	Performance of Ecological Civilization Construction			
	1	2	3	4
Innovation Entrepreneurship	0.798***			
Venture Entrepreneurship	(-16.721)	3.785***	8.439***	9.761**
Government Regulation * Innovation Entrepreneurship		(-4.431)	(-6.043)	(-12.057)
Government Regulation * Venture Entrepreneurship			-0.265***	-29.510***
Economic Growth Rate	-0.145***	-0.170***	-0.139***	-0.124**
Degree of Openness	0.001***	0.002***	0.001***	0.001**
Investment Openness	-0.26	-10.858***	0.437	-4.777*
Constant	-7.365***	-0.024	-6.075***	0.087
N	150	150	150	150
Adj.R ²	0.817	0.527	0.827	0.751

4.3. Robustness Test

In order to further test the reliability of empirical conclusions, this paper tests the robustness from the following aspects. Zeng Cheng^[7] and other scholars divide entrepreneurs into survival entrepreneurship and opportunity entrepreneurship. Based on the existing research, this paper uses the proportion of individual households to account for the proportion of the whole social practitioners to measure survival entrepreneurship, uses the proportion of private enterprises to the total number of employees in society to measure opportunity entrepreneurship. This paper replaces innovation entrepreneurship and venture entrepreneurship with survival

entrepreneurship and opportunity entrepreneurship for further robustness tests^[18].

As shown in Table 5, both survival entrepreneurship and opportunity entrepreneurship have a significant positive impact on the performance of ecological civilization construction. Government regulation plays a negative role in regulating survival entrepreneurship and ecological civilization construction performance, and in regulating the relationship between opportunity entrepreneurship and ecological civilization construction performance. All the relevant assumptions are true.

Table 5 Robustness Test

Independent Variable	Dependent Variable			
	Performance of ecological civilization construction			
	1	2	3	4
Survival Entrepreneurship	15.105**		44.691**	
	(2.387)		(-8.197)	
Opportunity Entrepreneurship		17.936*		147.236**
		(1.680)		(-10.657)
Government Regulation			-127.546***	
			(-10.817)	
Government Regulation *Opportunity Entrepreneurship				-495.138***
				(-11.330)
Economic Growth Rate	-0.164***	-0.193***	-0.114**	-0.138***
	(-3.144)	(-3.875)	(-2.894)	(-3.750)
Degree of Openness	0.002**	0.002*	0.001***	0.001***
	(7.271)	(7.233)	(-5.272)	(-3.078)
the Degree of Investment Openness	-1.360	-8.578*	1.349	-6.483*
	(-0.439)	(-1.842)	(-0.581)	(-1.905)
Constant	-0.291	0.860*	-0.336	0.594
	(-0.377)	(1.693)	(-0.586)	(-1.598)
N	150.00	150.00	150	150
Adj.R ²	0.484	0.474	0.713	0.72

5. RESEARCH CONCLUSION AND FUTURE RESEARCH DIRECTION

5.1. Research Conclusion and Enlightenment

The improvement of the performance of ecological civilization construction cannot be separated from the exertion and promotion of entrepreneurship. The role of entrepreneurship on the performance of ecological civilization construction needs a healthy system environment as the guarantee. This paper uses the panel data of 30 provinces in China from 2012 to 2016 for empirical analysis, and obtains the following research conclusions:

(1) Entrepreneurship will significantly improve the performance of ecological civilization construction. Both the innovation entrepreneurship and venture entrepreneurship are significantly positive related to the performance of ecological civilization construction. Private enterprise is an important support for regional economic development, an important source of local fiscal revenue and an important channel to absorb social employment. In the new era of socialism with Chinese characteristics, private entrepreneurs are not only investors, but also capital owners, R&D leaders, technology translators, wealth creators and duty bearers. The core of private entrepreneurship is creation and innovation. Innovation is the most important function of entrepreneurs. Through innovation, new energy use method are found and production efficiency is improved; through research and development, new products and design, the performance of ecological civilization construction is ultimately improved.

In the process of ecological civilization construction, we should carry forward the entrepreneurship, and a healthy environment is the basic guarantee. Therefore, we should vigorously promote the improvement of property right protection system and bankruptcy protection system. The cornerstone of the socialist market economy lies in the property right system. To protect the property right is the inevitable requirement of adhering to the socialist basic economic system. A perfect property right protection system is conducive to entrepreneurs' better engagement in the construction of the socialist ecological civilization with Chinese characteristics, and to improve the performance of the construction of ecological civilization in all provinces of China. The bankruptcy protection system provides an important protection for enterprises to withdraw from the market orderly, which helps to reduce the degree of damage to entrepreneurs due to business failure. But at present, the bankruptcy law of our country is not perfect enough. Entrepreneurs have to go through complicated processes and spend a long time when they apply for bankruptcy, so that when they are faced with bankruptcy difficulties, they prefer to run rather than apply for bankruptcy production. Protection is not conducive to the promotion of entrepreneurship. Therefore, improving the bankruptcy protection system and the bankruptcy application procedure will help entrepreneurs fulfill their social responsibilities and improve the performance of ecological civilization construction.

(2) Government regulation has negative impact on the relationship between entrepreneurship and the performance of ecological civilization construction. The higher the government's intervention in the market, the more

unfavorable the allocation of resources to the innovation activities related to environmental protection and the improvement of the performance of ecological civilization construction. Similarly, the impact of government regulation on the relationship between entrepreneurship and ecological civilization construction performance is also significantly negative. This shows that the visible hand of the government has not played the expected positive role in the process of stimulating entrepreneurship and ecological civilization construction.

In the process of building ecological civilization and promoting the high-quality development of China's economy, we must deal with the relationship between the government and the market. The 19th National Congress of the Communist Party of China emphasized that the market should play a decisive role in the allocation of resources and the government should play a better role. This major judgment is not only conducive to further establishing a correct concept of the relationship between the government and the market in the whole Party and the whole society, but also conducive to transforming the functions of the government, managing corruption and stimulating entrepreneurship. In the period of economic transformation, only entrepreneurs with entrepreneurship can survive in the face of difficulties. It is the users and the market that ultimately affect the survival and development of enterprises, not the help of the government. Therefore, in the process of ecological civilization construction we should reduce the government's intervention behavior, give play to the decisive role of the market in resource allocation, find the best combination of market function and government behavior, better stimulate the entrepreneurship, and better carry out ecological civilization construction.

5.2. Research Limitations and Future Research Directions

The research limitations and future research directions of this paper mainly include the following aspects:

(1) In the construction of the performance evaluation system of ecological civilization construction, principal component analysis is used to evaluate the achievements of ecological civilization construction in 30 provinces of China from five dimensions of economy, culture, society, environment and politics. This evaluation method only considers the results of ecological civilization construction at a certain time node, but it does not reflect the process of ecological civilization construction, and it also lacks the performance difference analysis before and after the construction of ecological civilization in the same province, which has certain limitations. In the future research process, the construction of performance evaluation system of ecological civilization construction should reflect the process of ecological civilization construction while considering the comprehensiveness.

(2) In measuring entrepreneurship, entrepreneurship is divided into innovation entrepreneurship and venture entrepreneurship. In the robustness test, entrepreneurship is replaced with survival entrepreneurship and venture entrepreneurship is replaced with opportunity entrepreneurship. Although the empirical results are consistent, the mechanism of different entrepreneurship on

the performance of ecological civilization construction is different and different. There is also a certain correlation between different entrepreneurship. In the follow-up study, the connotation of entrepreneurship should be further clarified based on the perspective of ecological civilization construction. The evaluation indicators of entrepreneurship should reflect the soft power of entrepreneurs, such as honesty, dedication, responsibility and so on.

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REFERENCES

- [1] Zhuang Ziyin, Entrepreneurship, sustained technological innovation and the micro mechanism of long-term economic growth [J], *World Economy*, 2005(12): 32-43
- [2] Xie Weimin. Research on the nature of property rights and innovation entrepreneurship -- Empirical evidence from Chinese listed companies [J]. *Management modernization*, 2013 (01): 101-104
- [3] Li Hongbo. The construction of ecological civilization is inseparable from entrepreneurship [N]. *China Economic Times*, (2)
- [4] Knight F H. Risk, uncertainty and profit: Courier Corporation [Z]. 2012.
- [5] Schumpeter J A. Theory of economic development [M]. Routledge, 2017.
- [6] Kirzner I M. Competition and entrepreneurship [M]. University of Chicago press, 2015.
- [7] Zeng Cheng, Li Yuanxu. On the transformation of economic growth mode driven by entrepreneurship: An Empirical Study Based on Provincial Panel Data [J]. *Shanghai Economic Research*. 2017 (10): 81-94
- [8] Acs Z, Armington C. Employment growth and entrepreneurial activity in Cities [J]. *Regional Studies*. 2004, 38(8): 911-927.
- [9] Liu surong, Li Jipeng. Research on the performance evaluation of urban ecological civilization construction under the background of big data -- Taking 17 cities in Shandong Province as an example [J]. *Journal of Shandong University of Science and Technology*, 2018,20 (01): 69-77 + 92
- [10] Devins D. Enterprise in deprived areas: what role for start-ups? [J]. *International Journal of Entrepreneurship and Small Business*. 2009, 8(4): 486-498.
- [11] Chen Yi'an, Zhao Xueping. Institutional environment and entrepreneurship: mechanism, Effect and policy research [J]. *Scientific Research Management*. 2019, 40 (05): 90-100
- [12] Cheng Junjie. Institutional change, entrepreneurship and development of private economy [J]. *Economic Management*. 2016, 38 (08): 39-54
- [13] Shao Chuanlin. Institutional environment, property nature and innovation entrepreneurship -- Empirical evidence from Chinese industrial enterprises [J]. *Securities Market Guide*, 2015 (03): 20-25 + 38

- [14] Zhang Feng, Huang Jiuli, Wang Rui. Government regulation, informal sector and enterprise innovation: Empirical Evidence from manufacturing industry [J]. *Management World*. 2016 (02): 95-111
- [15] Dreher A, Gassebner M. Greasing the wheels? The impact of regulations and corruption on firm entry [J]. *Public Choice*. 2013, 155(3-4): 413-432.
- [16] Acs Z J, Carlsson B, Thurik A R. *Small business in the modern economy* [M]. Blackwell, 1996.
- [17] Wong P K, Ho Y P, Autio E. Entrepreneurship, innovation and economic growth: Evidence from GEM data[J]. *Small business economics*. 2005, 24(3): 335-350.
- [18] Georgellis Y, Wall H J. What makes a region entrepreneurial? Evidence from Britain [J]. *The Annals of Regional Science*. 2000, 34(3): 385-403.