Study on the Symbiotic Relationship Between Intangible Cultural Heritage and Economic Growth — Empirical Analysis Based on Data from Cities in Shandong Province

Jindou Zhang, Xiaotian Qu, Qinzhou Leng

Yantai Institute of Science and Technology, Yantai 264000, Shandong, China

Abstracts: This paper draws on biological symbiosis theory to construct a symbiosis model and measure the degree of symbiosis. Through empirical tests, two main findings are presented. First, there is a positive asymmetric symbiosis between intangible cultural heritage and economic growth in Shandong Province; second, the impact of the latter on the former is higher than that of the former on the latter. Based on these findings, a positive symmetric symbiotic relationship between the two is constructed and optimisation suggestions are made with a view to enhancing the impact of intangible cultural heritage on economic growth.

Keywords: intangible cultural heritage; economic growth; symbiotic relationship

1. Introduction

Symbiosis belongs to the biological category, which was first proposed by German biologist Anton De Bary in accordance with the idea of "co-existence" when he studied the mode of interdependence among organisms. In recent years, the idea of symbiosis has been extended to other fields, such as sociology, education, economics, management, journalism, etc. These research contents involve logistics and regional economic development, harmonious coexistence between man and nature, hostel operation and rural revitalization, and so on. At present, there are few researches on the symbiotic relationship between intangible cultural heritage and economic growth at home and abroad. Based on the mutual promotion and influence between intangible cultural heritage and economic growth, this paper uses biological symbiosis theory to build a symbiosis model between the two. By collecting data from 16 cities in Shandong Province, this paper empirically analyzes the symbiosis between intangible cultural heritage and economic growth, which has certain theoretical significance and practical value.

2. Literature Review

Intangible cultural heritage unites the thoughts, talents, spirit and emotions of our forefathers, and contains rich historical, political, artistic, educational and economic values, and is an important force in promoting social development. With the development of economy, the relationship between intangible cultural heritage and economic growth has gradually triggered the thinking of researchers. Depending on the focus of the research, it can be classified into two categories: one believes that intangible cultural heritage promotes economic development; the other believes that the economy promotes the development of intangible culture.

First, researchers who take intangible cultural heritage as their starting point and economic development as their orientation believe that intangible cultural heritage promotes economic development. Intangible cultural heritage not only has the use value and exchange value of cultural products, but also carries the economic operation of consuming folk culture[1]. The greater the historical, political and artistic value of intangible cultural heritage, the greater its economic value. The protection and inheritance of intangible cultural heritage can be utilized to promote the development of local cultural tourism and other economic industries[2]. It can be seen that the role of intangible cultural heritage in promoting the economy is not only reflected in the excavation of its own economic value, but also in the integration with other industries, becoming an important force to promote economic development.

Secondly, there are different ways of economic development and different mechanisms for the promotion of intangible cultural heritage by the economy. Under the perspective of digital economy, digital technology is used as a medium to combine non-heritage culture with people's daily education and entertainment, giving it new vitality and vigor[3]. Under the perspective of experience economy, intangible cultural heritage uses commodities as props, focuses on consumers, and

creates activities that can satisfy consumers and enhance their participation, thus enabling them to obtain emotional and psychological satisfaction[4]. Economic transformation provides a blood-forming inheritance mode for intangible cultural heritage, which is not only conducive to the development of the cultural heritage in the era and the realization of its real value, but also can form an inheritance mode with stable economic sources, which is more vigorous and has a broader prospect of sustainable development compared with other inheritance modes.

Various scholars have conducted studies from the perspective of intangible cultural heritage contributing to economic development, or from the perspective of the economy contributing to the development of intangible cultural heritage, with the intention of illustrating the relationship between intangible cultural heritage and economic growth. Intangible cultural heritage is an important force for social development, and the economy is the backbone of promoting social development, and they share the same symbiotic environment and symbiotic interface. By combing through the literature, this paper argues that intangible cultural heritage and economic growth are symbiotic relationships that are mutually reinforcing and interdependent.

3. Research design

3.1 Modelling

Drawing on biology's approach to symbiosis, this study utilizes a symbiosis model to reflect the symbiotic relationship between intangible cultural heritage and economic growth. Suppose that in the symbiotic system of intangible cultural heritage and economic growth, the main qualitative parameter of intangible cultural heritage is represented by x, and the main qualitative parameter of economic growth is represented by y. Then the degree of symbiosis of intangible cultural heritage to economic growth and the degree of symbiosis of economic growth to intangible cultural heritage are respectively:

$$\delta_{CE} = (dx / x) / (dy / y) = (dx / dy) / (y / x) \tag{1}$$

$$\delta_{EC} = (dy / y) / (dx / x) = (dy / dx) / (x / y) \tag{2}$$

δ_{CE} is the rate of change of the principal qualitative covariate x of intangible cultural heritage causing the rate of change of the principal qualitative covariate y of economic growth, reflecting the contribution of intangible cultural heritage to economic growth. is the rate of change of the principal qualitative covariate y of economic growth causing the rate of change of the principal qualitative covariate x of intangible cultural heritage, reflecting the driving force of economic growth on intangible cultural heritage. The evaluation criteria of the symbiosis degree of and depends on the quantitative relationship between them, if $\delta_{CE} = \delta_{EC} > 0$, they are in a positive symmetric symbiosis; if $\delta_{CE} \neq \delta_{EC} > 0$, they are in a positive asymmetric symbiosis; if $\delta_{CE} = \delta_{EC} < 0$, they are in a negative symmetric symbiosis.

3.2 Data

Shandong Province, an economic powerhouse and a province with large intangible cultural heritage resources, pays special attention to the development and protection of intangible cultural heritage. Based on the availability of data, this paper selects the number of intangible cultural heritage at the national, provincial and municipal levels in 16 cities in Shandong Province as the main qualitative parameter of intangible cultural heritage, and GDP as the main qualitative parameter of economic growth. Because of the significant quantitative differences between the two, different units of measurement are used, with intangible cultural heritage measured in items and GDP measured in billions of dollars. The data sources of this study are mainly obtained through public information on government websites at all levels. In order to better illustrate the problem, this paper counts the data for a total of 12 years from 2012 to 2023.

3.3 Empirical analyses

This thesis uses the statistical software spss22 to analyse the functional relationship between the main qualitative covariate y of economic growth and the main qualitative covariate x of intangible cultural heritage, and the regression results are as follows:

$$y = 664.3 + 14.67 x \tag{3}$$

$$x = 215.16 + 0.064 y \tag{4}$$

The coefficients of determination for both (3) and (4) models above are $R^2 = 0.942$,which indicates a good model fit. indicates that the linear relationship holds at 95% confidence level. Deriving (3) and (4) respectively and substituting the results into (1) and (2) gives the following results:

$$\delta_{CE} = 0,064\, y / x = 0.064\, y / (215.2 + 0.064\, y) \qquad (5)$$

$$\delta_{EC} = 14.67\, x / y = 14.67\, x / (664.3 + 14.67\, x) \qquad (6)$$

According to (5) and (6), the values of the sum of symbiosis between ICH and economic growth in Shandong Province from 2012 to 2023 can be calculated respectively, as shown in Table 1.

Table 1. Symbiosis between intangible cultural heritage and economic growth in Shandong Province, 2012-2023

Time	δ_{CE}	δ_{EC}	Symbiosis analysis
2012	0.9275	0.9820	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2013	0.9336	0.9850	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2014	0.9370	0.9885	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2015	0.9424	0.9888	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2016	0.9459	0.9894	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2017	0.9493	0.9896	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2018	0.9519	0.9902	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2019	0.9545	0.9906	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2020	0.9559	0.9910	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2021	0.9610	0.9917	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2022	0.9630	0.9922	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis
2023	0.9648	0.9926	$\delta_{CE} \neq \delta_{EC} > 0$,The two have a positive asymmetric symbiosis

As shown in Table 2, (1) There is a positive asymmetric symbiotic relationship between intangible cultural heritage and economic growth in Shandong Province; (2) $\delta_{CE} < \delta_{EC}$ suggests that the impact of economic growth on intangible cultural heritage is higher than the impact of intangible cultural heritage on economic growth; (3) The value of has been increasing year after year, which indicates that the impact of ICH on economic growth is gradually increasing.

4. Conclusion and Recommendation

The above study verified the mutualistic relationship between intangible cultural heritage and economic growth in Shandong Province, but there is asymmetry in the mutualistic relationship between the two. The impact of economic growth on intangible cultural heritage is higher than the impact of intangible cultural heritage on economic growth. Although the impact of intangible cultural heritage on economic growth is increasing every year, it has not yet reached a positive symmetrical symbiosis. In order to promote a positive symmetrical symbiotic relationship between the two, this paper suggests the following:

Firstly, intangible cultural heritage should pay attention to the excavation of economic value. Economic development is a basic requirement for social development, and everything in society has to consider its own economic value. The development of intangible cultural heritage should be guided by economic benefits, and economic transformation methods should be chosen according to the needs of society in order to realise its value. Intangible cultural heritage is rich in historical, political, educational, spiritual and artistic values, and the greater these values, the greater its economic value. How to transform other values of intangible cultural heritage into economic values is not only an issue of the transmission and development of intangible cultural heritage, but also an important issue of economic development. Tapping into the economic value of intangible cultural heritage can provide society with a wealth of cultural products that can satisfy the growing cultural needs of the people and also increase economic benefits. The intangible cultural heritage covers all aspects of social life and is rich in diversity. Not only can new industries be cultivated through collation and excavation, but they can also be grafted onto many industries such as cultural tourism, media, catering, gaming, sports, film and television, clothing, exhibition, design and so on, thereby creating new growth points for economic development.

Secondly, intangible cultural heritage should be adapted to the needs of the new economic development. With the arrival of new economies such as digital economy, knowledge economy, experience economy, intelligent economy, ecological economic, information economy, platform economy, etc., intangible cultural heritage has to take the initiative to embrace the production factors such as information, digital, intelligence, platform, ecology, knowledge, etc., and to adapt to the needs of the new economic development through creative transformation and innovative development. This is the key to a positive symmetrical symbiotic relationship between intangible cultural heritage and economic growth. In order to achieve the ideal state of symbiosis, the intangible cultural heritage should actively explore information technology construction, digital transformation, intelligent creation, comprehensive platform construction, ecosystem construction, and cultural creativity integration.Currently, digital information technology is profoundly affecting the shape of economic existence, and various industries are actively exploring digital transformation. The integration of intangible cultural heritage with advanced information technology is not only reflected in changes in development models, but also in systemic and ecological changes. In the information society, consumer culture, consumer content, consumer behaviour, consumer habits, etc., have changed dramatically. With the help of digital information technologies, space can be opened up for the development of intangible cultural heritage.

Thirdly, the safeguarding mechanism for intangible cultural heritage should be improved. At the same time, we should also recognise that economic value is not the only value of intangible cultural heritage. The historical, political, artistic and educational values of some intangible cultural heritage cannot be directly or indirectly transformed into economic values, and if they are placed in the market economy without any regard, the result will definitely be bad. For intangible cultural heritage with "weak economic value", economic utilitarianism will produce a stronger Matthew effect, with the strong getting stronger and the weak dying out. The safeguarding of intangible cultural heritage is a complex endeavour, with the main actors involved at the level of individuals, groups, communities, governments and the country, and therefore has to be carried out in all social, political, economic, cultural, legal and technological aspects in order to avoid the extinction of the intangible cultural heritage and its becoming a historical symbol.

Acknowledgments

References

[1] Song Xiaofei. "Towards Consumption": From Folk Culture to the Intangible CulturaHeritage of Consumption Capita[J]. Chinese Cultural Studies,2020,(02):112-120.

[2] Wang Jing. Research on the impact of intangible cultural heritage protection on regional cultural and economic development[J]. Art Education,2020,(04):33-36.

[3] Wang Rui, Qi Xiaoyue, He Jun et al. Research on the Digital Construction of Products of the Intangible CulturalHeritage in the Digital Economy[J]. Commercial Economy,2022,(15):4-7.

[4] Fang Changdang. A Research on the Digital Communication Strategy of Minority Intangible Cultural Heritage from the Perspective of Experience Economy[J]. Journal of Sichuan Institute of Nationalities,2021,30(01):25-31.

Author Bio

Jindou Zhang, male, Han ethnicity, lecturer, Yantai Institute of Science and Technology.

Xiaotian Qu, female, Han ethnicity, teaching assistant, Yantai Institute of Science and Technology.

Qinzhou Leng, male, Han ethnicity, teaching assistant, Yantai Institute of Science and Technology.