Proceedings of the 2nd International Conference on Financial Technology and Business Analysis
DOI: 10.54254/2754-1169/50/20230589

The Investigation on the Effect of Digital System of Economy on the Productiveness of Green System of Economy

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Abstract: How to improve green economic efficiency while developing the digital system of economy has become a fact that needs more and more to be attention. With the level of the digital system of economy and green Economic efficiency as the explanatory variable, which plays a significant effect on the study of the impact of the digital system of economy to the efficiency of green economic. The purpose of this paper is to combine the theories of digital system of economy development and green system of economy development theory to expound the theories of digital system of economy development and green system of economy development based on some panel data in China and then explore the functional path of the digital system of economy in the green system of economy and explore the effect of the digital system of economy on the development of green system of economy. In the empirical research and analysis, the influence of digital system of economy to the efficiency of green Economic basically shows a significant promoting effect. A series of countermeasures and suggestions are proposed to promote green Economic efficiency, such as reducing the differences among different region in the level of digital system of economy, and the regional differences in green Economic efficiency, et al.

Keywords: digital system of economy, Chinese green system of economy, big data era

1. Introduction

Various regions in China have made significant progress and achievements in overall economic and social development through the reform and opening up. The service, agriculture, industry and other industries developed slowly, and the green Economic efficiency was relatively low before the rapidly development of digital system of economic [1]. With the arrival of the exist of information society, digital system development is gradually strengthening, the division of labor within enterprises is gradually clarified, management systems are gradually improving, and the development of various industries is gradually expanding, which could bring significant economic benefits [2].

With the better development of digital system of economy, it provided greatly promoted the extremely quickly development of the economy and on the basis of the arrival of the Big data era, advancing digital infrastructure and international digital cooperation. It has brought about both rapid economic growth and caused a new round of ecological crisis. This investigation was aimed to elaborate the development theory of digital system of economy and the development theory of the green system of economy, and then explore the functional path of digital system of economy in green system of economy. Exploring the effect of digital development on green economic efficiency was

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extremely vital, which will suggest a theoretical basis and reference value to the achieving a double win in ecology and economy.

2. Research on Digital System of Economy

2.1. Economic Development and Digital System of Economy

The digital system of economy is a series of socio-economic program and activities, mainly based on the Internet, with digital related knowledge and effective and animate information as the most critical production factors, and the effective use of ICT as an important driving force for improving the development efficiency of economic and optimizing the structure of the market economy. Depended on the development of digital technology and the exploring of Internet, digital system of economy has not only fully penetrated the three major industries of agriculture, industry and service, but also completely changed many traditional laws of economic growth, including the law of diminishing Marginal revenue [3]. It has become a higher-level economic form after the three major industrial economies and is likely to become the “fourth largest industry” in the future. the exploring of the digital system of economy, has always promoted high-quality economic development. There is a series of research focused on them. Early literature believes that the development of the digital system of economy is essentially an evolutionary process of optimizing resource allocation based on the advance of skills [4]. Another study explored the path of high-quality development through blockchain technology, and the results showed that the economy will naturally evolve towards the goal of high-quality development under the conditions of digital system of economy, especially driven by digital technology [5]. This report interprets high-quality development as a change in explanatory quantity and establishes a model using the digital system of economy as the explanatory variable. Regression analysis data show that the level of the digital system of economy could as an inhibitory aspect, which could influence the effect on high-quality development [6].

2.2. Green System of Economy and Economic Growth

The green system of economy is a sustainable economy that is more energy-efficient and environmentally friendly than a traditional industrial economy. The traditional industrial economy prioritizes the economy, overusing limited resources and generating a large amount of pollutants, which is not conducive to physical and mental health [7]. However, the green system of economy can balance the relationship between ecology and economy, achieving harmonious coexistence between economy and ecology. The green system of economy theory which is a combination of ecological environment and economic theory, involves many aspects, and could be divided into four major categories: “ecological economy theory”, “Sustainable Development Theory”, “circular economy theory”, and “Low-carbon economy theory”[8].

Economic growth refers to the growth of goods and labor capabilities produced by a region or country. If government consider the increase in population and changes in prices, the increase in per capita welfare level should also be included, and economic growth can be expressed by the growth rate.

Early reports used the SBM model with unexpected output as an empirical analysis starting with environmental regulation issues, and indicated that long-term keep watch on environmental regulation will directly promote the improvement of green economic efficiency, but with regional differences [9]. Other reports proposed that much more concerns should be paid to the green development of industries at the regional economic level, in order to facilitate the advancement of a green system of economy [10].

Under the underground of the concept of a green system of economy, researchers examined various regions of Russia and conducted a spatial comparative analysis. The results proved that there is a high

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extend and scale of heterogeneity in the social and environmental characteristics of each regional area [11]. Other professors believe that green finance has an extremely major impact on the economic and ecological development [12].

Early reports calculated green total factor productivity using the production frontier function, and discovered that digital technology has a effective function on the promoting of the productivity of urban green total factor through empirical analysis [13].

Literature has analyzed the association between the digital system of economy and the green system of economy from the perspective of green stimulus policies adopted by various countries during the epidemic period. The results showed that if China's stimulus policies could achieve synergistic effects from the digital system of economy to the green system of economy, they would maximize the economic recovery [14]. Reports conducted an empirical study on the impact of digital system of economy development on sulfur dioxide emissions through the system GMM model by adding the square term of the digital system of economy level [15]. The results showed that the early digital system of economy level significantly promoted SO2 emissions. Kim used the Vector autoregression to investigate the association between the growth of economic and the emissions of carbon, and results in the studies indicated that the growth of the economic would bring about an increase in CO2 [16].

3. Countermeasures

In the view of the early literatures and research on the economy development, this paper has proceeded the research on the impression of the digital system of economy to the green Economic efficiency. According to the research outcome of this paper, the following countermeasures and suggestions are proposed to promote green Economic efficiency:

(1) Reduce the differences from the scale of the digital system of economy among diverse region

From the calculation results of the digital system of economy level in early studies, it could be found that the huge regional differences in the development of the digital system of economy were existed. The eastern region, compared with others, has the highest scale of the development of digital system of economy, followed by the central region, and the lowest level was presented in the western region, presenting a "V" shaped characteristic. It should be ensured that, on the premise of efficient development of the digital system of economy, the digital system of economy development is accelerated in the central regions and the western place, especially in the western regions.

(2) Reduce regional differences in the development of the efficiency among green Economic

From the results of early literatures focus on the development of the efficiency in green Economic, it could be found that regional differences in green Economic efficiency are obvious. The green Economic efficiency in the East is the highest, followed by the Middle. On the premise of ensuring the efficient development of green system of economy in the East, we should speed up the development of green system of economy in the Middle and West, especially in the West, to reduce the distinction in the efficiency of the green system of economic among different region.

(3) Toughening up the digital system of economy and empowering the strength of the green system of economy

On the basis of the empirical results of the differential GMM model linear regression in early reports, it could be found that the linear impact of the level of digital system of economy on the efficiency of the green system of economic is significantly positive. We should strive to maintain and strengthen the digital system of economy to enable a green system of economy, so as to carry out a double win situation for ecology and economy.

(4) Control the growth rate of the development of the whole economy

The rate of growth among economic growth should be controlled, so the digital system of economy and the efficiency of green economic could be better promoted and rapidly increase.

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(5) Optimize the scale of allocation from the central and local financial, meanwhile control the size of cities.

Consummating the proportion of financial distribution in central and local regions, and strengthen ecological protection and environmental governance, so as to improve green Economic efficiency. Control the size of the city, reduce the artificial pressure caused by the ecological environment, in order to better polish up the green Economic efficiency.

(6) Increase the extend of openness and advance the opening-up policy to the outside world

We should increase the degree of opening to the outside, advance the opening-up policy and introduce advanced technology to ameliorate the productiveness of green system of economic.

4. Conclusion

The purpose of this paper aimed to combine the theories of digital system of economy development and green system of economy development theory to expound the theories of digital system of economy development and green system of economy development based on some panel data in China and then explore the functional path of the digital system of economy in the green system of economy and explore the effect of the digital system of economy on the development of green system of economy. It is particularly important to explore the impact of digital development on the efficiency of green economic, which will provide a theoretical basis and reference value for achieving a double win in ecology and economy. The impact and influence of the digital system of economy on the efficiency of green Economic basically shows a significant promotion effect. This study aims to conduct empirical research at a later stage and further explore the mechanism of action. On the basis of existing literatures, this study has carried out research on the impact and effect of the digital system of economy on the efficiency of green Economic. On the basis of the research data of this paper, the following countermeasures and suggestions are proposed to promote green Economic efficiency: (1) Reduce the discrepancy and the differences from the standard and the level of the digital system of economy among diverse region (2) Reduce area differentiation in the development of the efficiency among green system of economic (3) Toughening up the digital system of economy and empowering the strength of the green system of economy (4) Control the growth rate of the development of economic (5) Optimize the proportion of allocation from the central and local financial, meanwhile control the size of cities (6) Increase the extend of openness and advance the opening-up policy to the outside world

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