

Research on the Path of High-Quality Development of Zhanjiang Digital Economy Driven by Scientific and Technological Innovation

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Abstract: This paper aims to explore the path of technological innovation driving the high-quality development of Zhanjiang's digital economy (DE). First of all, by combing and analyzing the concepts of digital economy and scientific and technological innovation (STI), it reveals the important role of STI in the development of digital economy. Secondly, this paper points out the main problems and challenges based on the analysis of the current situation of Zhanjiang De. Then, the driving effect of technological innovation on Zhanjiang DE is deeply discussed, and the driving effect and specific impact of technological innovation on digital economy are analyzed. On this basis, the paper puts forward the path of STI to drive the high-quality development of Zhanjiang's DE, including government guidance and support policies, industry-university-research cooperation mechanism construction, talent training and innovative talent team construction, industrial ecological environment optimization and other strategies and measures. Finally, through case analysis, the successful DE development cases are summarized, and the future development trend and suggestions are prospected. This paper aims to provide theoretical and practical guidance for the high-quality development of Zhanjiang's digital economy.

1. Introduction

With the rapid development of information technology and the increasing digitalization of the global economy, the digital economy has become an important engine to promote economic growth and enhance competitiveness. As a coastal city in China's Guangdong Province, Zhanjiang not only has unique geographical advantages, but also has rich natural and human resources, which provides broad space and potential for the development of digital economy [1-2]. However, at the same time, Zhanjiang's digital economy is also facing many challenges, including insufficient STI capacity, relatively single industrial structure, and imperfect innovation environment, which restrict the high-quality development of its digital economy.

STI is regarded as the core driving force and key factor to promote the development of the digital economy. Through the continuous introduction of new technologies, new models and new business forms, STI can improve industrial efficiency, improve production methods, optimize resource

allocation, and thus achieve sustained growth and high-quality development of the digital economy. Therefore, it is of great theoretical significance and practical value to study the driving effect of STI on Zhanjiang's DE, explore the interactive relationship between STI and the development of DE, and find an effective path to promote the high-quality development of Zhanjiang's DE [3-4].

This paper aims to carry out an in-depth discussion on the theme of "The path of high-quality development of Zhanjiang DE driven by STI". First of all, from the perspective of literature review, DE, STI and the relationship between them will be systematically sorted out to provide a theoretical basis for subsequent research. Secondly, through the analysis of the current situation of Zhanjiang's DE, the current problems and challenges are accurately grasped to provide a basis for the formulation of corresponding policies and measures [5]. Then, it will focus on discussing the specific mechanism and path selection of STI for Zhanjiang's DE development, aiming to provide strong support for the high-quality development of Zhanjiang's DE. Finally, through case analysis, the successful experience and enlightenment are summarized, and suggestions and prospects are put forward for the future development of Zhanjiang's DE. Through the research of this paper, it is expected to provide theoretical guidance and practical support for the high-quality development of Zhanjiang DE, and promote Zhanjiang to a more brilliant future in the field of DE [6].

2. Analysis of Zhanjiang's DE Status

2.1 Over View of Zhanjiang's DE Development Status (listed in Figure 1)

Zhanjiang Digital Economy Development

Key Indicators:

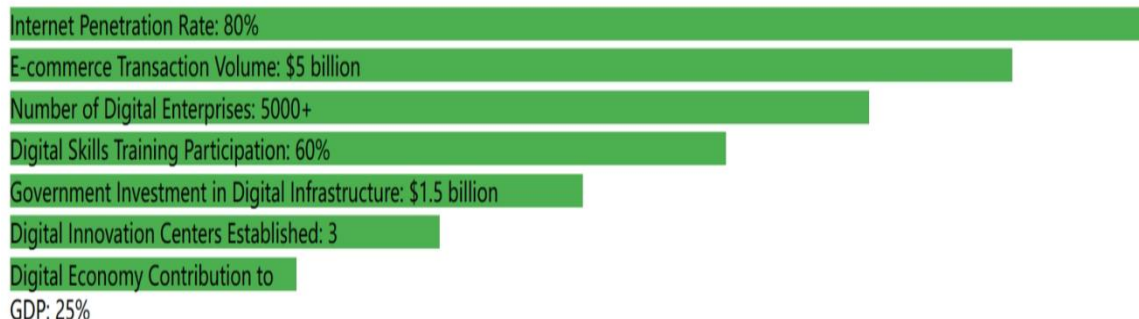


Figure 1: Zhanjiang's DE development status

2.1.1 Digital infrastructure construction

Zhanjiang has made remarkable progress in the construction of digital infrastructure. The 5G network covers the whole city, and the access capacity of optical fiber network is continuously improved. At the same time, the accelerated deployment of new infrastructure such as cloud computing and big data centers has provided strong support for the development of the DE [7-8].

2.1.2 Industrial digital transformation

Zhanjiang has actively promoted industrial digital transformation and accelerated the upgrading and transformation of traditional industries. Through the introduction and cultivation of DE enterprises, the deep integration of new-generation information technology with manufacturing, agriculture and service industries has been promoted, and a number of competitive digital industrial clusters have been formed.

2.1.3 Digital technology innovation

Zhanjiang pays attention to digital technology innovation, encourages enterprises to increase investment in research and development, and promotes the research and application of cutting-edge technologies such as artificial intelligence, Internet of Things, and blockchain. Through cooperation with universities and research institutions, we will accelerate the transformation of scientific and technological achievements and enhance the competitiveness of core industries of the DE [9-10].

2.1.4 DE personnel training

Zhanjiang attaches great importance to the training of DE talents, and encourages higher education institutions and vocational training institutions to set up DE-related majors and courses to train high-end talents in big data, cloud computing, artificial intelligence and other fields. At the same time, Zhanjiang strengthens the training of digital skills for enterprise employees, and enhances the understanding and application ability of DE in the whole society.

2.1.5 DE development environment

The Zhanjiang municipal government has introduced a series of policies and measures to optimize the environment for the development of the DE. Zhanjiang has attracted more social capital to invest in the ecological environment by streamlining administration and delegating power, optimizing services and lowering market access barriers. At the same time, we will increase financial support for the DE and set up special funds to support key enterprises and projects.

2.1.6 DE cooperation and exchange

Zhanjiang actively participates in DE cooperation and exchanges, and strengthens cooperation with domestic and foreign cities. By holding DE forums, exhibitions and other activities, we will introduce advanced ideas and resources to promote mutual benefit and win-win results. At the same time, enterprises are encouraged to expand the international market and enhance the international influence of Zhanjiang's DE.

2.1.7 Development of digital financial inclusion

Zhanjiang has achieved remarkable results in the development of digital inclusive finance. By developing new financial service models such as mobile payment and online banking, we will lower the threshold of financial services and expand the coverage of financial services, so that more people can enjoy the convenience brought by digital finance. At the same time, the regulation of digital finance will be strengthened to ensure financial security and stability.

2.2 Analysis of main problems and challenges

Although Zhanjiang's DE has made some achievements, it still faces some problems and challenges. First of all, Zhanjiang's STI ability is relatively weak, and high-end technical talents are scarce, which restricts the sustainable development of DE and the improvement of innovation ability. Secondly, the industrial structure of Zhanjiang's DE is relatively unitary, mainly concentrated in e-commerce, intelligent manufacturing and other fields, lacking the support of diversified development. The most important thing is that Zhanjiang's innovation environment is relatively weak, and the lack of perfect STI policies and support measures leads to low innovation enthusiasm of enterprises and insufficient effective allocation of innovation resources [11-12]. The status of technological innovation in Zhanjiang is shown in Figure 2. In order to solve these

problems and challenges, Zhanjiang needs to further strengthen the cultivation of STI capabilities, optimize the industrial structure of the DE, improve the innovation environment, and enhance the innovation vitality and competitiveness of enterprises, so as to promote the high-quality development of Zhanjiang's DE.

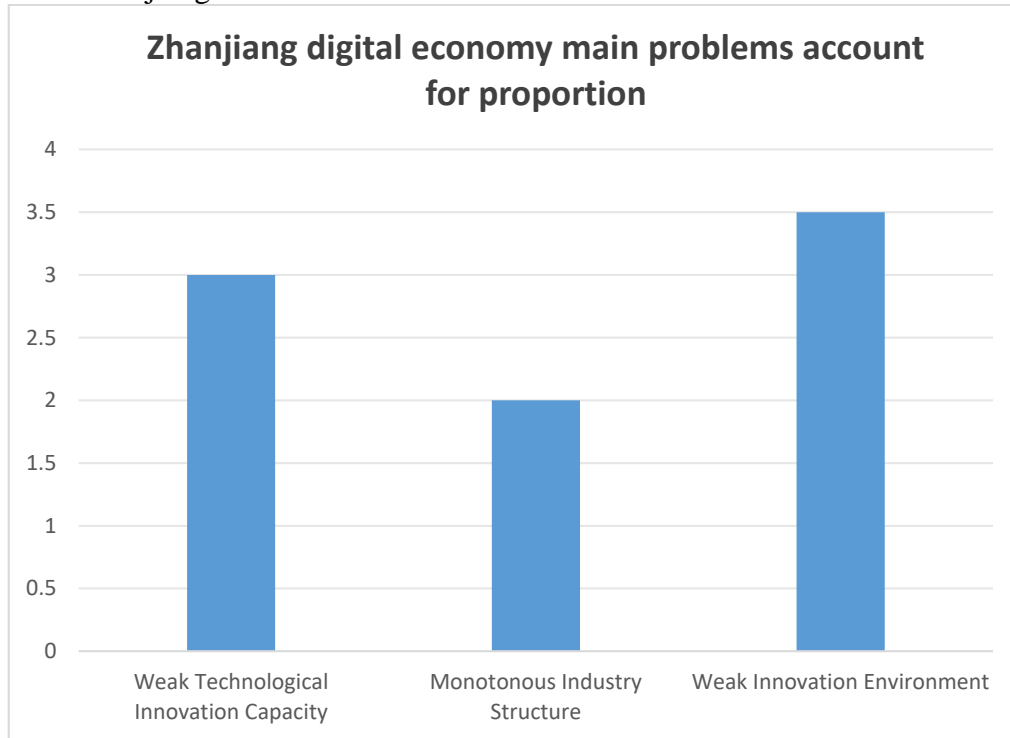


Figure 2: Zhanjiang digital economy main problems account for proportion

3. The Driving Role of STI on Zhanjiang's DE

3.1 Analysis of the Driving Effect of Technological Innovation on the DE

As an important driving force for the development of DE, technological innovation can be reflected in many aspects. First of all, technological innovation can improve industrial efficiency and promote industrial upgrading and optimization of the DE in various fields by improving production processes, improving production efficiency and reducing costs. Secondly, the application of new technologies can create new products and services, expand the market space of the DE, meet the increasingly diversified needs of consumers, and promote the healthy development of the market. Third, technological innovation has driven the development of the industrial chain of the DE, created a large number of job opportunities, improved people's employment level, and also promoted social stability and economic growth. Finally, technological innovation in different fields can be integrated with each other to form a new industrial chain and business model, promote the integration of the DE with traditional industries and service industries, and promote the development of the entire economic system in a healthier and smarter direction [13].

3.2 Specific Impact of STI on Zhanjiang's DE Development

In Zhanjiang, STI has a specific impact on the development of the DE in various aspects, as shown in Figure 3. First of all, STI has accelerated the transformation process of Zhanjiang's traditional industries to digital and intelligent, promoted the upgrading and transformation of

traditional industries such as manufacturing and agriculture, and enhanced the competitiveness and development level of the industry. Secondly, STI has nurtured a number of emerging industries, such as artificial intelligence, big data, cloud computing, etc., which has become a new growth point and new driving force of Zhanjiang's DE, injecting new vitality into the high-quality development of Zhanjiang's economy. Third, STI has improved the technical level and innovation ability of Zhanjiang enterprises, enhanced the market competitiveness of enterprises, and enabled them to better adapt to market changes and challenges in the era of DE [13]. Finally, STI has provided Zhanjiang residents with more convenient and efficient life services, such as smart city construction, digital medical and health care, etc., which has improved the quality of life and happiness of residents [14]. To sum up, STI has played a vital role in promoting the development of Zhanjiang's DE, and provided solid support for the sustainable, healthy and high-quality development of Zhanjiang's economy.

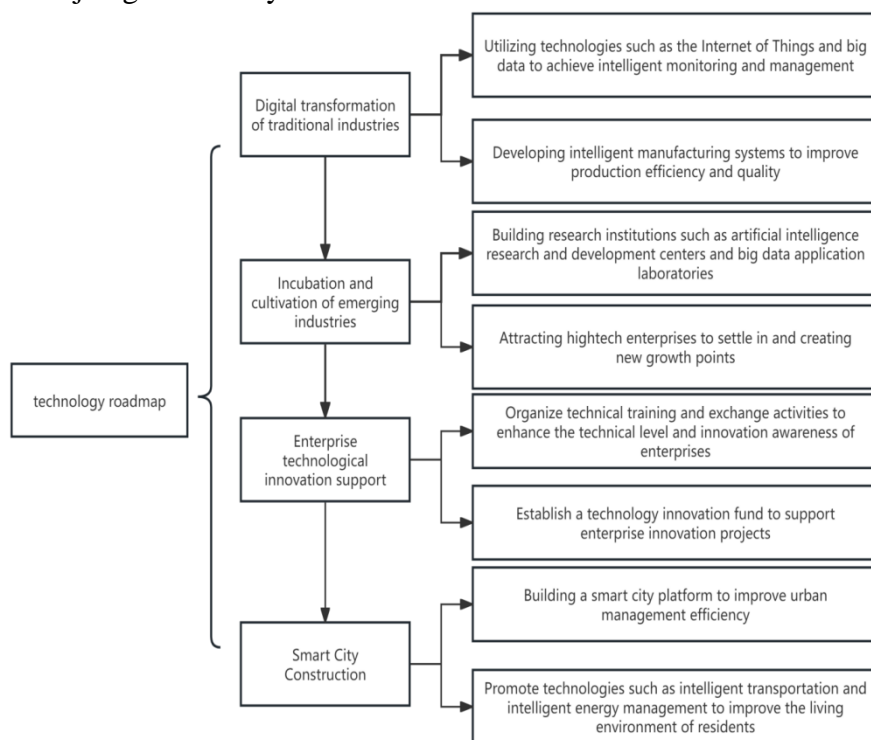


Figure 3: The impact of STI on the development of the DE

4. STI to Drive the High-Quality Development of Zhanjiang's DE

4.1 Government Guidance and Support Policies

Government guidance and support policies in STI are crucial. First, the government should increase investment in scientific and technological research and development, increase financial support for scientific research projects, and encourage enterprises to increase R&D investment. Second, the government can establish a special fund for STI to support innovative enterprises and research institutions to carry out STI activities [13]. At the same time, the government can also formulate preferential tax policies and intellectual property protection measures to encourage enterprises to increase innovation efforts and protect innovation achievements. In addition, the government should also promote the coordination of industrial policies and science and technology policies to form policy synergy and promote the high-quality development of the DE.

4.2 Building Mechanisms for Industry-University-Research Cooperation

Industry-university-research cooperation is an important way to promote STI [15]. The government can establish and improve the cooperation mechanism between enterprises, universities and research institutes, and strengthen cooperation and exchanges among enterprises, universities and research institutes. Enterprises are encouraged to carry out joint research and development projects with universities and research institutes to share scientific research resources and results. At the same time, the government can also establish a platform for industry-university-research cooperation, provide policy support and financial support, and promote the depth and breadth of industry-university-research cooperation.

4.3 Personnel Training and Innovative Personnel Team Construction

Talent is the core element of STI. The government should increase investment in personnel training, establish a sound personnel training system, and train a group of high-level scientific research and innovation talents. Colleges and universities are encouraged to strengthen cooperation with enterprises, set up professional courses that meet market demand, and cultivate talents with innovative consciousness and practical ability. At the same time, the government can also establish a scientific and technological talent introduction and incentive mechanism to attract outstanding talents at home and abroad to Zhanjiang to engage in STI.

4.4 Optimizing the Industrial Ecological Environment

Optimizing the industrial ecological environment is an important guarantee for promoting the high-quality development of the DE. The government can strengthen the formulation and adjustment of industrial policies, encourage enterprises to increase investment in technological transformation and innovation, and improve industrial competitiveness and innovation capacity. At the same time, the government should also optimize the business environment, simplify administrative approval procedures, and reduce the cost and risk of enterprise innovation. In addition, the government can also strengthen supervision and norms in the field of DE, crack down on unfair competition, and maintain market order and a fair competitive environment.

4.5 Other Relevant Strategies and Measures

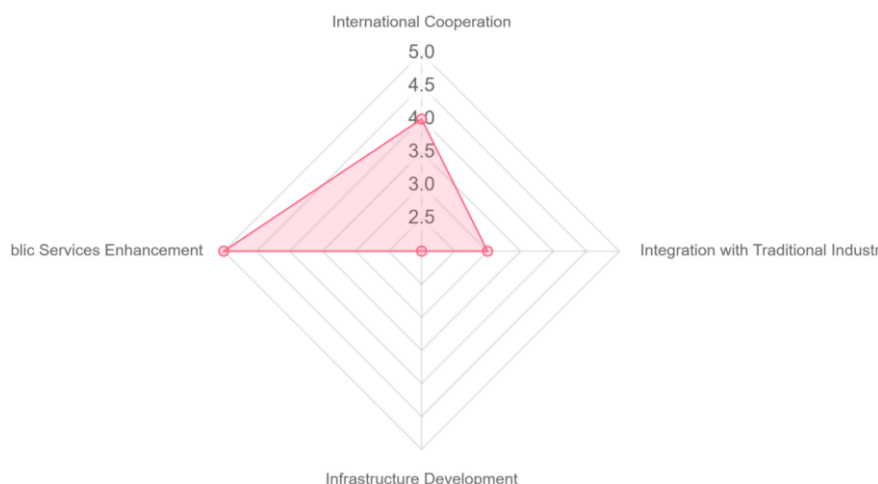


Figure 4: The specific application of technological innovation in the DE

In addition to the above points, the government can also adopt a series of other relevant strategies and measures to promote technological innovation and the development of the DE. Figure 4 is the specific application of technological innovation in the DE. The government will strengthen international cooperation and exchanges and absorb advanced foreign technology and experience. The government promotes the deep integration of DE with traditional industries, financial industry and cultural industry. The government will expand the space for DE development, strengthen the construction of public services and infrastructure, and enhance the basic supporting capacity for rural development.

5. Conclusion and Prospect

5.1 Summary

This paper has carried out an in-depth study on the theme that technological innovation drives the high-quality development of Zhanjiang's DE. Through the analysis of the current situation of Zhanjiang DE, the promoting effect of STI on DE, and the specific impact of STI on the development of Zhanjiang DE, the importance and necessity of STI on the development of Zhanjiang DE are concluded. On this basis, a series of paths to promote the high-quality development of Zhanjiang's DE are proposed, including government guidance and support policies, industry-university-research cooperation mechanism construction, talent training and innovative talent team construction, industrial ecological environment optimization and other relevant strategies and measures.

5.2 Outlook and Suggestions on the Future Development Trend

Looking into the future, Zhanjiang's DE will usher in broader development space and deeper development challenges. First of all, we can see that STI will continue to be the main driving force for the development of the DE, and Zhanjiang will further strengthen the cultivation of STI capabilities to promote the high-quality development of the DE. Secondly, Zhanjiang's DE will show a trend of diversified development, not only e-commerce, intelligent manufacturing and other fields will be developed, but also more emerging industries will emerge, such as artificial intelligence, Internet of things, blockchain, etc., to inject new vitality into the transformation and upgrading of Zhanjiang's economy. At the same time, Zhanjiang's DE will also strengthen the integration and development of traditional industries and service industries, achieve the deep integration of DE and real economy, and promote Zhanjiang's economy to achieve leapfrog development.

In view of the future development trend, we propose the following: First, strengthen government guidance and support, formulate more precise and targeted policies and measures, further improve the development environment, and stimulate market vitality and innovation potential; Second, strengthen cooperation between enterprises, universities and research institutes, promote the transformation and industrial application of scientific and technological achievements, and achieve a virtuous cycle of STI and economic development; Third, strengthen talent training and introduction, build a high-level innovative talent team, and provide talent guarantee for the sustainable development of Zhanjiang's DE; Fourth, strengthen the optimization of the ecological environment of the DE industry, and enhance the overall competitiveness and core competitiveness of Zhanjiang's DE. To sum up, with the continuous advancement of STI and the implementation of policies and measures, it is believed that Zhanjiang's DE will usher in a brighter future and contribute new impetus and vitality to the high-quality development of Zhanjiang's economy.

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