

# Research on the Internal Mechanism and Path of Digital Economy under the Background of Urban-rural Integration

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## Abstract:

From the perspectives of urban-rural relationship theory, innovation driving force theory, sustainable development theory and collaborative governance theory, this paper discusses the role and influence of digital economy in urban-rural integration and development. Firstly, the connotation and characteristics of the development of digital economy are analyzed, and the achievements of China's current urban-rural integration development are expounded. Then, analyze the internal mechanism, goal and principle of digital economy empowering urban-rural integration development; Finally, based on the development of digital economy in China, this paper puts forward specific ways for digital economy to empower urban-rural integration development, with a view to providing useful reference for promoting urban-rural integration development in China.

## Keywords:

Digital Economy, Urban and Rural Integration Development, Internal Mechanism; Digital Infrastructure, Digital Industrial Cluster

## 1. Introduction

With the rapid development of information technology, digital economy has become an important part of modern economic development. Under the background of globalization, the development of digital economy plays an important role in promoting the integration of urban and rural areas. In order to achieve the development goal of urban-rural integration, it is necessary to formulate corresponding policies and measures to accelerate its process. Empowerment of digital economy refers to the advantages of improving production efficiency, reducing costs and improving service quality through information technology, thus providing strong support for the integrated development of urban and rural areas. The integrated development of urban and rural areas means focusing on the two-way free flow of urban and rural production factors and the rational allocation of public resources, taking industry as a supplement to agriculture, taking cities as a guide to the

countryside, promoting the inclusive sharing of urban and rural basic public services, the integrated development of urban and rural infrastructure, the coordinated development of urban and rural industries, and the sustained growth of farmers' income, forming a new type of relationship between workers and peasants with mutual promotion, coordinated development and common prosperity in urban and rural areas, and accelerating the modernization of agriculture and rural areas and rural revitalization [1]. In this process, as an important driving force, digital economy can provide strong support for the development of urban-rural integration.

## **2. Digital Economy Empowers the Internal Mechanism of Urban-Rural Integration and Development**

In the current digital era, the digital economy has become an important force to promote the integration of urban and rural development. The development of digital economy has not only changed people's lifestyle and consumption habits, but also profoundly affected the connection and development relationship between urban and rural areas [2]. Digital economy is one of the key factors to promote the development of urban-rural integration, and the study of its influencing mechanism will help this paper better understand the present situation and future development trend of urban-rural integration.

### ***2.1. Digital economy promotes technological innovation***

Digital economy is one of the important trends of global economic development at present, which not only changes people's production, lifestyle and consumption habits, but also profoundly affects the urbanization process. With the development and application of information technology, digital economy has become an important force to promote the integration of urban and rural development. The focus of digital economy's empowerment of urban-rural integration development lies in technological innovation, that is, through continuous technological innovation to improve the productivity level and social welfare level in rural areas. For example, the application of internet technology can help farmers to better obtain market information, sell agricultural products and conduct financial transactions and other information services; At the same time, intelligent agricultural technology can also provide more efficient and accurate management means for agricultural production. These technological innovations can not only enhance the overall economic strength of rural areas, but also promote exchanges, cooperation and development between urban and rural areas. In addition, the digital economy also provides new opportunities and challenges for the integrated development of urban and rural areas. On the one hand, the digital economy can strengthen the connection between urban and rural areas through network platform construction and data sharing; On the other hand, the digital economy may also aggravate the widening gap between urban and rural areas. Therefore, the government needs to take a series of measures to guide the digital economy to play its role, so as to ensure better results in urban-rural integration and development.

### ***2.2. Digital economy promotes the optimization and upgrading of industrial structure***

Digital economy is an important trend of current economic development, which not only changes people's lifestyle and consumption habits, but also profoundly affects the production and operation mode of enterprises. With the continuous development

of digital technology, more and more enterprises begin to manage and operate by digital means, which provides new impetus for the economic transformation and development of the city. At the same time, the development of digital economy has also promoted the connection and interaction between urban and rural areas and accelerated the process of urban-rural integration. The core of digital economy's empowerment of urban-rural integration development lies in the optimization and upgrading of industrial structure. First of all, the digital economy empowers the integration of urban and rural development based on good infrastructure construction. Only with a complete infrastructure network and an efficient information transmission system can we support the development of digital economy. Secondly, the government needs to formulate corresponding policies and measures to encourage enterprises to actively participate in the development of the digital economy, and at the same time, it should strengthen the supervision of the digital economy to ensure its healthy and orderly development. Finally, the key to the integration of urban and rural development of digital economy lies in the improvement of talent reserve and innovation ability. Only by having a high-quality talent team and strong scientific and technological innovation strength can we promote the development of digital economy. In a word, the key to the integration of urban and rural development of digital economy is the optimization and upgrading of industrial structure, and this process requires the joint efforts of the government, enterprises and society.

### ***2.3. Digital economy promotes the income growth of urban and rural residents***

Digital economy is an important trend of global economic development, which plays an important role in promoting the integration of urban and rural development. By analyzing the relevant data and research results of digital economy, we can find that digital economy has a significant impact on the income growth of urban and rural residents. First of all, the development of digital economy provides more employment opportunities and development space for urban residents. With the continuous progress and development of digital technology, more and more enterprises begin to adopt digital production methods, which brings more employment opportunities to urban residents. At the same time, the digital economy has also promoted the technical level of urban residents and improved their competitiveness and market value. Secondly, the digital economy has also created new economic growth points for rural residents. Digital agriculture, digital medical care and other fields have become one of the emerging industries of digital economy, which can not only improve farmers' economic benefits, but also improve the infrastructure and social environment in rural areas. Finally, the digital economy can also help urban and rural residents achieve better resource sharing and complementarity. For example, digital education can learn and communicate online through the internet, so that urban residents can enjoy high-quality educational resources, while digital medical care can make rural areas get more convenient health services. In a word, the rapid development of digital economy has injected some strength and motivation into the urban-rural integration development in China.

### ***2.4. Digital economy promotes the improvement of ecological environment***

Digital economy is an important trend of global economic development, which not only changes people's lifestyle and consumption habits, but also profoundly affects the connection between cities and rural areas [3]. With the continuous development and popularization of digital technology, digital economy has become one of the

important driving forces to promote the integration and development of urban and rural areas [4]. Therefore, how to enhance the contribution of digital economy to the development of urban-rural integration has become a hot issue in current research. It is an important aspect for digital economy to improve the ecological environment of urban-rural integration development, which is mainly reflected in the following aspects: First, digital economy can provide better living conditions and development opportunities for urban and rural residents; Secondly, digital economy can promote the sustainable development of urban and rural environment by improving the efficiency of resource utilization; Finally, the digital economy can also achieve the development goal of urban-rural integration by optimizing urban-rural infrastructure construction.

### **3. Digital Economy Enables the Integration of Urban and Rural Development**

In the current digital era, the digital economy has become an important force to promote economic growth. The development of digital economy can not only improve production efficiency and reduce costs, but also promote social progress and social development. Through the development of digital economy to promote the integration of urban and rural development, this paper has achieved some results and emerged some typical cases.

#### ***3.1. The main effects of digital economy on the integration of urban and rural development***

Driven by the digital economy, the integration of urban and rural areas has achieved remarkable results. First of all, digital technology has brought new opportunities and challenges to the economic development in rural areas. Through the application of information technology such as Internet and mobile Internet, rural areas can obtain various resources and services more conveniently, such as education and training, medical and health care, financial management and so on. At the same time, digitalization also provides strong support for industrial upgrading in rural areas. For example, the development of e-commerce platform provides convenient channels for agricultural products sales; Smart agriculture can improve agricultural production efficiency through big data analysis. Secondly, the digital economy has also promoted the quality of life of urban residents. With the popularity of mobile devices such as smart phones and tablets, people can enjoy more cultural and entertainment products and social interaction opportunities at home. In addition, the digital economy can also help urban residents solve some life problems, such as online shopping and take-away distribution. In short, the digital economy has played a positive role in the integration of urban and rural development.

#### ***3.2. A typical case of digital economy empowering urban-rural integration and development***

Driven by the digital economy, urban-rural integration has become a hot topic. In this context, many cities and rural areas are actively exploring how to use the digital economy to achieve urban-rural integration. First of all, this paper chooses Nanjing, Jiangsu Province as the research object of this paper. As a modern city, Nanjing has made some achievements in the development of digital economy. Through the investigation and analysis of the status quo of digital economy in Nanjing, we can find that the Nanjing municipal government has been vigorously promoting the

development of digital economy and has taken a series of measures to promote the development of urban-rural integration. For example, the Nanjing municipal government has introduced a series of preferential policies to encourage enterprises to invest and develop digital economy industries; At the same time, it also strengthened the support for the introduction and training of digital technology talents. These measures not only help to enhance the economic strength of Nanjing, but also help to promote the integration of urban and rural development. Secondly, this paper also chooses Hangzhou, Zhejiang Province as another research object. Hangzhou is a typical developed city and an important base for the development of electronic information industry in China. In recent years, the Hangzhou municipal government has also been increasing investment in the digital economy, and has issued a series of support policies. For example, the “internet plus” plan launched by the Hangzhou Municipal Government aims to accelerate the process of digital transformation and improve the level of informatization; In addition, the Hangzhou municipal government is still vigorously promoting the construction of smart cities, building intelligent transportation systems, and so on. All these measures show that the Hangzhou municipal government attaches great importance to the integration of urban and rural development with digital economy.

#### **4. Goals and Principles of Digital Economy Enabling Urban-Rural Integration and Development**

##### ***4.1. Digital economy empowers the goal of urban-rural integration and development***

The development goals of digital economy to empower urban-rural integration mainly include the following aspects: First, promote exchanges and interactions between urban and rural residents and improve the quality of life of urban and rural residents; The second is to optimize the allocation of resources and improve the competitiveness and development level of the city; Third, promote the process of rural modernization and improve the living conditions and social status of farmers; The fourth is to strengthen the construction of government governance capacity and enhance the quality and efficiency of public services. These goals are the necessary premise and foundation for the digital economy to empower urban and rural integration and development.

##### ***4.2. The principle of digital economy empowering urban-rural integration and development***

In the process of digital economy empowering urban-rural integration, some basic principles need to be followed. First of all, the government should play a leading role and formulate corresponding policies and regulations to regulate the development of digital economy. Secondly, we should pay attention to innovation and technological progress, and constantly improve the level and quality of the digital economy in order to better serve the development of urban-rural integration. In addition, it is necessary to strengthen support for the digital industry, encourage enterprises to actively participate in the digital economy, and provide more opportunities and development space for urban-rural integration. Finally, we should attach importance to personnel training and social security, train more talents with digital skills, and establish a sound social security system to provide better living security for the people. These principles are the basis for the digital economy to empower urban-rural integration and

development, and also the key to realize urban-rural integration and development. Only by strictly observing these principles can we push forward the development process of digital economy empowering urban and rural integration.

## **5. Digital Economy Enables the Path Choice of Urban-Rural Integration and Development**

In order to achieve the above goals, this paper needs to formulate corresponding policies and measures. Specifically, we can start from the following aspects.

### ***5.1. Increase investment in digital technology research and development, and accelerate the construction of digital infrastructure***

In the era of digital economy, the development of digital technology has become an important driving force to promote the integration of urban and rural development. Therefore, strengthening R&D and investment in digital technology is one of the keys to achieve urban-rural integration. The government should increase investment in digital technology research, establish a perfect technological innovation system, encourage enterprises to carry out digital transformation and upgrading, and improve the application level of digital technology. At the same time, accelerating the construction of digital infrastructure is also an important link that cannot be ignored [5]. The government should actively promote the construction of 5G networks and the application and promotion of the Internet of Things, so as to provide a solid infrastructure guarantee for the development of the digital economy. In addition, it is necessary to pay attention to the support measures in personnel training and social governance to ensure that the digital economy can really play its role and achieve practical results. In addition to increasing investment in digital technology research and development, it is also crucial to speed up the construction of digital infrastructure. At present, the digital infrastructure construction in China has made some progress, but there are still some problems to be solved. For example, the problems of slow Internet speed and unstable signal in some areas are still outstanding. These problems not only affect the economic development of China, but also affect people's quality of life. Therefore, the government should take a series of effective measures to solve these problems, such as optimizing the layout of communication networks, improving broadband coverage and strengthening network security protection. Through continuous efforts, the digital economy will become a powerful engine to promote the integration and development of urban and rural areas.

### ***5.2. Improve the digital economy development system and cultivate digital industrial clusters***

In the era of digital economy, digitalization has become a bridge between cities and rural areas. Therefore, how to promote the popularization and development of digital economy is of great significance to the integration of urban and rural development. In order to achieve this goal, we need to start from the following aspects: First, we should establish a complete digital economy development system. This includes formulating relevant policies and regulations, strengthening the research and application of digital technology, and improving the level of digital infrastructure construction. Secondly, we should pay attention to cultivating digital industrial clusters. Through the support and guidance of the government, more enterprises can be attracted to enter the digital field, thus promoting the development of the digital economy. In addition, innovation and entrepreneurship can be encouraged to provide

a good environment for the development of digital industry [6]. Finally, it is necessary to strengthen digital education and training and cultivate more talents with digital skills. Only in this way can we better promote the process of urban-rural integration and development. In short, the digital economy is one of the key factors in the current urban-rural integration and development. By improving the development system of digital economy and cultivating digital industrial clusters, the level of urban-rural integration and development can be effectively improved. At the same time, we also need to pay attention to the protection of personal privacy and social equity to ensure that the development of digital economy can really benefit the people [7].

### ***5.3. Establish and improve the digital economy supervision mechanism to ensure the safe and stable operation of the digital economy***

In the rapid development of digital economy, how to establish and improve an effective digital economy supervision mechanism has become an important issue in front of this paper. With the development and popularization of Internet technology, the digital economy has penetrated into all aspects of people's lives, including financial services, medical care, education and training. In this case, this paper needs to establish a perfect supervision system to ensure the security and stability of the digital economy. First of all, the government should strengthen the legislative work in the field of digital economy. Formulating relevant laws and regulations is an indispensable basis to ensure the development of digital economy. Secondly, the government should also strengthen the supervision of the digital economy industry [8]. Through the establishment of specialized agencies or departments for supervision and management, the interests of consumers and social public interests can be better protected. In addition, the government can also take some measures to improve the public's knowledge and awareness of the digital economy. This will help reduce the risks of the digital economy and promote its healthy and orderly development. Finally, the government also needs to actively promote the research and development of digital economy, and provide better policy support and resource environment for the digital economy. Only in this way can we achieve the benign development of digital economy and the goal of urban-rural integration.

### ***5.4. Effective use of big data analysis means to provide decision support for urban-rural integration and development***

With the advent of the digital age, data has become an important resource for enterprises and governments. In the process of urbanization, the application of big data technology has become more and more extensive. Through the collection, collation and analysis of a large number of data, we can deeply understand the development of the city from multiple dimensions and formulate a more scientific and reasonable development strategy for it. Therefore, how to effectively use big data analysis means to provide decision support for urban-rural integration development has become one of the urgent problems to be solved. First of all, it is necessary to establish a perfect data acquisition system. Only a systematic data acquisition mechanism can ensure the quality and reliability of data. Secondly, effective data processing and cleaning are needed [9]. Because of the diverse data sources and uneven quality, it is necessary to screen and integrate them in order to better use them for subsequent analysis and application. Finally, appropriate algorithms and models are needed for data mining and analysis. Commonly used methods include cluster analysis, association rule discovery, anomaly detection and so on. These methods can

help this paper to understand the current situation of urban development more comprehensively, thus providing strong support for the integrated development of urban and rural areas. In short, the effective use of big data analysis means is the key to the integration of urban and rural development.

## **6. Digital Economy to Enable the Integration of Urban and Rural Development Safeguard Measures**

In the process of digital economy empowering urban-rural integration development, a series of safeguard measures need to be taken to ensure its smooth progress. First of all, the government should strengthen the support and guidance for the development of digital economy and formulate corresponding policies and regulations to promote the development of digital economy. Secondly, it is necessary to increase investment in rural areas, improve the living standards and social status of local residents, and thus enhance their willingness and ability to participate. In addition, it is necessary to establish and improve the information infrastructure system, including network construction and data security protection. Finally, enterprises should be encouraged to actively explore the road of digital transformation and promote the development of digital economy. Specifically, the government can introduce some preferential policies to attract investment and development of enterprises. For example, enterprises can be encouraged to carry out digital business through tax reduction or financial support. At the same time, we can also publicize the advantages and application scenarios of the digital economy by holding various activities and exhibitions, and increase the public's knowledge and understanding of the digital economy. In a word, it is a complex project that digital economy empowers urban-rural integration and development, which requires the joint efforts of all parties to achieve success.

## **7. Conclusions**

In this study, this paper discusses the empowerment of digital economy and its role in the integration of urban and rural development. By analyzing data and case studies, this paper holds that digital economy is one of the important forces to promote the integration and development of urban and rural areas. At the same time, this paper also finds that there are some problems and challenges in the development of digital economy, such as the existence of digital divide and digital security, which need to be solved. Therefore, in the future research, we should strengthen the policy support and technological innovation of digital economy development in order to accelerate the process of urban-rural integration development. This paper needs to further explore how to use digital economy to promote the development of urban-rural integration. First of all, the government should strengthen the research and application of digital economy and formulate corresponding policies and regulations to support its healthy and orderly development. Secondly, enterprises should also actively participate in the digital economy, give play to their own advantages and maximize their own value. In addition, we need to pay attention to personnel training and social security to ensure that the digital economy can truly serve the development of urban-rural integration. In short, the future development of urban-rural integration cannot be separated from the support and promotion of the digital economy.

## Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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