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A Preliminary Study of Digital Village Construction in Anhui Province Under the Rural Revitalization Strategy

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Abstract

The report of the 19th CPC National Congress points out that the issue of agriculture, rural areas and peasants is a fundamental issue related to the national economy and people's livelihood, and it is the basic support and the key variable for our country to build a domestic macro-cycle as the main body and a domestic and international double-cycle. The "Three Rural Issues" is a main line running through different periods of China's socialist development, and it is necessary to always take solving the "Three Rural Issues" as the center of gravity of the work of the whole party. Digital village construction is an important initiative to implement the rural revitalization strategy and build a beautiful China. With the rapid development of China's digital economy and the issuance of national digital village policy documents and the effective implementation of national digital village construction sites, the development of agricultural modernization has begun to bear fruit. The digital countryside has brought new production methods, new lifestyles and new business models for rural construction, providing constant impetus for rural revitalization. In this paper, we will analyze the mechanism analysis of digital countryside construction on rural revitalization strategy drive, and put forward suggestions around the current stage of digital countryside construction dilemma impediments to achieve the goal of comprehensive revitalization of the countryside empowered and effective.

Keywords

Rural Revitalization, Digital Economy, Rural Development, Digital Technology.

1. Introduction

Rural revitalization strategy is a key development strategy in China, and digital rural construction is an important part of the rural revitalization strategy. Digital rural construction is a product of China's urban-rural integration and modernization process, and it is also a necessary way to make rural revitalization and high-quality development. General Secretary Xi Jinping pointed out that in order to comprehensively build a modern socialist country and realize the great rejuvenation of the Chinese nation, the work of the "Three Rural Areas" is the top priority, and emphasized the need to adhere to the "three musts" and "three unswervings". It also emphasizes the need to adhere to the "three musts" and "three steadfastnesses". The report of the 19th CPC National Congress points out that the current strategy of rural revitalization should be optimized and improved in five aspects: industry, talent, culture, ecology and organization, and the modernization of China's agriculture and rural areas should be comprehensively pushed forward, so as to achieve the goals of prosperous industry, ecological livability, civilized rural customs, effective governance and affluent life. Since the 18th National Congress of the Party, policies such as the "Strategy of the Central Committee of

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the Communist Party of China and the State Council on the Implementation of Rural Revitalization", "Opinions on Comprehensively Promoting Rural Revitalization and Accelerating Modernization of Agriculture and Rural Areas" and "Rural Revitalization Strategy (2018-2022)" have been introduced, and the Central Committee's Document No. 1 of 2022 points out that it is necessary to speed up the standardization of the construction of the digital countryside and to continue to carry out the pilot of the digital countryside. This series of policies has pointed out the direction for rural digital construction and rural revitalization development.

Against the backdrop of continuous innovation in information technology, the constant emergence of new technologies, new products and new models, a new round of global technological change, the Internet of Things, big data, regional chains, artificial intelligence, digital media and the development of the fifth-generation mobile communications technology (5G), this provides unprecedented opportunities for the development of digital villages. The construction of digital countryside should further promote "Internet + agriculture" to strengthen the rural information infrastructure, and digital technology innovation as the core driving force of rural revitalization, so as to promote the digitalization of rural livelihood, rural governance, rural industry and rural ecology, and further empower rural revitalization to increase the efficiency, and help promote the rural revitalization to achieve high-quality development. Revitalization to achieve high-quality development. From the current reality, there are still some difficulties that need to be solved urgently in consolidating the results of poverty alleviation and using digital technology to promote the comprehensive revitalization of the countryside.

2. The current situation of rural digital construction in Anhui Province

2.1. Policy support

At present, most regions in Anhui Province have formulated relevant policies to support the construction of digital villages. These policies include financial support, tax incentives and technical training, thus encouraging the application and development of digital technologies in rural areas. Anhui Province has launched the Digital Agriculture Innovation Program, which aims to promote the digital transformation of agricultural production in rural areas. The program provides financial support and technical training to help farmers adopt modern information technology and digital tools, such as the Internet of Agricultural Things, artificial intelligence and big data analytics, to improve the efficiency of agricultural production and the quality of agricultural products. The government may also provide subsidies and incentives to encourage farmers to purchase digital agricultural equipment and technologies. Meanwhile, smart schools and smart healthcare are being promoted. Coordinate funding for education programs at all levels to support the construction of smart schools, encourage the use of high-quality digital resources, and promote reform and innovation in education concepts and models. Accelerating the construction of Anhui Province's universal health information platform and telemedicine service platform, promoting the pilot of assisted diagnosis and treatment systems for primary healthcare organizations, and creating provincial-level demonstration areas for primary smart healthcare and family doctor services.

2.2. Digital platforms come to the fore

In 2020, seven ministries and commissions, including the Central Internet Information Office, jointly issued the Notice on Carrying Out National Digital Countryside Pilot Work, the core content of which centers on the theme of digital countryside in various provinces and cities to select pilot areas to carry out pilot work, and four counties in Anhui Province were selected as the first batch of pilot villages. After 1 year of construction, the pilot areas will be fully

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integrated with the agricultural development and information technology, grid-based management of the new form of presentation and gradually improve the level of operation. In addition, the core of digital village construction is naturally the construction of high-speed broadband network, so that rural areas can enjoy network services comparable to urban areas. Currently, many areas in Anhui Province are making efforts to provide broadband coverage so that farmers and rural residents can have access to the Internet and realize online education, e-commerce and telemedicine services. At the same time, the construction of digital villages also encourages the development of rural e-commerce to promote the sale of agricultural products and increase farmers' income. By establishing e-commerce platforms and logistics networks, agricultural products can be better connected to the market and farmers' incomes and living standards can be improved.

2.3. Rural financial services

Digital technologies can improve financial services in rural areas. For example, through technological tools such as mobile payments and Internet banking, farmers can more easily carry out financial operations such as payments, deposits and withdrawals, and loans, increasing the efficiency of financial inclusion and financial services.

2.4. Rural education and health

The construction of digital villages is also committed to improving education and medical conditions in rural areas. By providing online educational resources and telemedicine services, rural residents can enjoy better education and medical resources and bridge the education and medical gap between urban and rural areas.

2.5. Accelerated development of rural infrastructure

In the eyes of many people, the image of rural areas has always been backward, dirty and dilapidated. In order to improve the stereotypical image of rural areas left by the public, in this regard, Anhui Province is making efforts to carry out the infrastructure of rural areas related to the renovation, and in recent years has achieved a lot of good results. The first is the gradual improvement of rural road infrastructure. During the 13th Five-Year Plan period, Anhui Province has gradually carried out projects to upgrade and renovate county and township highways, and by 2021, the reform of the rural road management and maintenance system in Anhui Province will have achieved full coverage of cities and counties. Secondly, water supply and use in rural areas has been adequately ensured. Anhui Province is working hard to carry out projects to gradually improve the safety of drinking water in rural areas in various regions, and by carrying out the management of rural water systems, farmers are able to drink safe and healthy water, and at present, the development of the rural human environment in Anhui Province is obviously on the way to a better development trend. Thirdly, the coverage rate of rural network base station construction has increased. Up to now, all the administrative villages in Anhui Province have achieved 4G network coverage as well as the opening of fiber optic broadband network, and the 5G network has also achieved the basic coverage of county urban areas. The improvement of rural network coverage has naturally laid a solid network foundation for improving the application level of rural informatization and transforming the rural development mode.

3. Analysis of the mechanism of the digital economy for rural revitalization

3.1. Digital economy for rural entrepreneurship transformation and upgrading

The core of the rural revitalization strategy lies in the revitalization of industries, and it is necessary to actively develop modern agriculture and build a modern agricultural industrial

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system. In the era of digital economy, digital technologies such as big data, cloud computing, Internet of Things, artificial intelligence and other digital technologies have been widely used in the development of rural industries, which not only promotes the rapid development of rural industries, but also helps to establish a modernized industrial system with a higher level and better structure in rural areas. Relying on the diffusion effect of digital technology innovation, modern industrial elements and traditional rural industries have accelerated their integration, and rural industries have realized digital management in logistics and distribution, marketing and promotion, and production and operation, establishing a modernized production and marketing system and expanding the space for the revitalization of rural industries. In particular, the development of digital finance in rural areas has enriched the financing methods of rural industries and provided strong financial support for rural industrial revitalization.

3.2. Digital economy for rural talent building

With the in-depth development of the digital economy in rural areas, digital products and services have been integrated into the learning and life of farmers, and through the Internet digital platform, the constraints of time and space have been broken through, providing farmers with convenient online learning channels and a platform for skills enhancement, and the digital literacy and cultural literacy of farmers have been upgraded, with the number of new professional farmers increasing constantly, thus laying a solid foundation of talents for rural revitalization.

3.3. Digital economy for rural culture

With the development of the digital economy, the Internet has been rapidly popularized in rural areas, and with the communication power of digital network platforms, rural traditional culture has been rapidly disseminated, which is conducive to the inheritance and protection of excellent traditional culture in the countryside. At the same time, the rich network cultural resources also meet the spiritual needs of farmers. The majority of farmers can obtain more high-quality learning resources through online learning channels, learn knowledge and skills through online platforms, and also obtain richer entertainment resources through various self-media and live broadcasting platforms, which has stimulated the cultural vitality of the countryside, and vigorously promoted the cultural revitalization of the countryside.

4. Problems in building a rural digital economy in Anhui Province

4.1. Weak rural digital infrastructure

Mature infrastructure development is the basis for the development of the digital economy. The economic model of digitization and informatization has strict requirements for the efficiency and quality of information processing. Complex landscapes and uneven population distribution add to the difficulties of building rural infrastructure. In addition to insufficient coverage of core facilities such as 5G and new base stations, there is no comprehensive configuration of digital economy platforms and modern payment and settlement systems, which leads to impeded information dissemination and inefficient communication, and has become a pain point and difficulty for the in-depth promotion of the digital economy in rural areas.

In addition, existing electronic payment systems are not yet robust, and financial payment processing in rural areas is relatively simple, dominated by cash transactions and bank transfer services. Mobile payments, especially those based on biometrics, are seldom used, and the tools for payment and settlement are still not diversified enough. Self-service devices such as online banking, mobile banking, and mobile POS are not widely used in rural areas, even though they are widely available in urban areas. The financial payment and settlement environment in rural areas has yet to be optimized and upgraded. Due to the large scale of capital invested in

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infrastructure, there is a lack of systematic planning and arrangements to ensure the effective use and distribution of invested capital.

4.2. Rural residents' awareness of the digital economy needs to be enhanced

Although the popularity of the Internet in rural areas is increasing, most villagers are not aware of the power that the Internet can provide for rural revitalization, and they do not really understand the changes that digitalization can bring to the countryside. Nowadays, using the Internet to study and work has become the norm for urban residents, but for most rural residents, their main activities on the Internet are limited to watching short videos and movies, which makes their digital awareness lag behind that of urban residents to a certain extent. The digital economy will inevitably cause far-reaching changes in rural areas, but many rural grassroots workers and rural residents still adhere to the traditional view that digitalization is too risky, and lack an in-depth understanding of the relevant policies and doubts about the digital economy, which undoubtedly impedes the development of the digital economy in rural areas.

4.3. Lack of rural digital economy talent

In the digital economy, scientific and technological elements have a central position, and the deep integration of "Internet Plus" with rural agriculture has raised the standard of participants, requiring a large number of talents with a composite understanding of both agriculture and the digital economy. But due to some specific factors, the talent support for digital rural construction is weak. First, the lack of local professionals. Most of the people left behind are old people, children and low-educated people, their digital level is low, coupled with digitalization, information technology, the Internet, intelligent and other new technologies for farmers is just contact with new things, has not really integrated into all aspects of the villagers' life, so it is more difficult to produce understanding of digitalization, skilled use of digital products, digital production professionals. Secondly, there is a shortage of foreign professionals. Digital economy is a new economic form, this aspect of the professional talent is in short supply. Many rural areas are lagging behind in economic development, which makes the construction of public facilities such as education, health, culture and so on insufficient, all of which leads to the attraction of these places to digital economy professionals weakened. In addition, there is a lack of professionals in rural areas who can promote and guide the use of digital services and improve the digital skills of the population, especially those who have mastered the dual skills of agricultural science and technology and information technology, which are even more rare.

4.4. Lack of legal safeguards related to rural digital governance

Currently, new technologies such as the Internet of Things, artificial intelligence and big data have been widely adopted and applied in various social fields, but the corresponding legal framework is still in the process of being established. In fact, even some existing legal provisions still have obvious shortcomings in terms of information protection, division of property rights and management responsibilities. In some areas, local protectionism and judicial injustice have resulted in some cases involving the construction of digital villages not being handled fairly, further weakening the effectiveness of legal protection. Some farmers and grassroots cadres lack legal awareness and do not know much about the laws and regulations on digital village construction, resulting in some violations not being corrected in time. The shortcomings of digital law-making, enforcement, adjudication and compliance have, to some extent, limited the process of digital village construction throughout the province.

4.5. Bottlenecks encountered in rural digital industrial transformation

The reform of agricultural digitization is at the heart of the development of digital industries and the digitization of industrialization, as well as a major factor in the creation of digital

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villages. However, the value of agricultural digitization and its share of the digital economy have been at the tail end of the three major industries, with significant differences in the scale of digitization from the secondary and tertiary sectors. The digital transformation of agriculture needs to address systemic issues at all stages, including supply, production of agricultural products and marketing. Insufficient investment in the digitization of agriculture, insufficient support for key sectors, and inefficient innovation in the context of capitalism are all the more pronounced because of the high growth of investment in the industry with relatively low returns, the scarcity of human resources in agriculture, and the fixed notion in mainstream thinking of "low profitability in agriculture". Overall, insufficient supply of technology, poor use of data and inefficient policies are the main problems encountered in the supply of digital components in the digitalization of agriculture.

Advances in digitization have made vernacular e-commerce an emerging investment venue for all parties, especially society, government, and business. However, the distribution of agricultural products in China is still mainly centered on the two important modes of bulk trading markets and retailers of agricultural products. In these two modes, there are conditions such as too narrow business scope, backward information transmission, and narrow circulation coverage, which have brought certain impacts on the operation of agricultural products and farmers' income. In addition to the traditional mode, rural e-commerce, as a new industry that activates the endogenous power of rural development, has gradually fallen into the transition bottleneck after the early barbaric growth. Rural e-commerce is facing problems such as product homogenization competition, imperfect traceability system and low value-added products in terms of sales content; in terms of sales channels, it is plagued by multiple problems such as high logistics costs, difficult product transportation and low platform operation level. The shortage of high-end talents, lack of liquidity and lagging e-commerce services make rural e-commerce risky for both supply and demand.

5. Optimizing pathways

5.1. Accelerating rural digital infrastructure

The main body of the rural industry is agriculture, and the digital economy promotes the development of the rural industry, first of all, to promote agricultural production and operation, and to improve the economic efficiency of agriculture. Due to the intervention of the digital economy, the traditional agriculture has undergone a "transformation". The digital economy "empowers" agriculture before, during and after production, boosting the development of "agriculture + 冶" and continuously improving the quality and efficiency of agricultural production. However, compared with urban areas, there are still large shortcomings in the construction of digital infrastructure in rural areas, rural Internet penetration is not 60%, the investment is insufficient, and the 4G and 5G networks have not yet realized the full coverage of rural areas, which has led to the slow pace of digital transformation and upgrading in rural areas. Therefore, it is necessary to strengthen the construction of rural digital infrastructure, especially for remote rural areas, increase financial support, carry out scientific regional layout, avoid duplication of construction, and improve network carrying capacity and depth of coverage. Efforts should be made to reduce network costs in rural areas and to promote comprehensive coverage of rural networks.

5.2. The digital economy optimizes the supply of agricultural factors of production

With the rapid development of big data and information technology, information on agricultural production factors, such as land, water, climate and labour, is constantly being collected and integrated and information sharing is being realized, which has become an

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important basis for evaluating the conditions of agricultural production and selecting sites for new agricultural production. At present, China has set up a number of databases on natural elements such as land use, water resource distribution, soil type, topography and geomorphology, such as the Soil Science Database and the Water Resources Management Network, and has set up specialized departments to manage them. The construction of big data in agriculture and rural areas has been actively promoted, and a market information platform for key agricultural products has been built to carry out data sharing related to agriculture and the construction of big data centers for the whole industrial chain of single varieties, and to provide social information services such as labor situation, production and sales situation, and market prices for the new agricultural management bodies and small farmers. The digitization of agricultural production factors will significantly improve agricultural production conditions.

5.3. Digital economy" horizontal metallurgy to promote the integration of agriculture with tourism, culture, education, recreation, environmental protection and other industries

With digital technology as a means, the trend of contemporary industrial development is that industrial boundaries are becoming increasingly blurred and cross-border integration is becoming the norm. Driven by the digital economy, there is an increasing integration between agriculture and tourism, culture, education, recreation, environmental protection and other industries in the rural industry. In terms of rural tourism, in recent years, rural intelligent tourism services such as tourism product network display and booking platform, scenic spot VR display system, voice guide system, intelligent interactive system have been continuously strengthened, and the digital service capacity of various tourist attractions, tourism parks, characteristic villages, farmhouses, and boutique lodgings has been gradually improved, and the use of network live broadcasting and short videos to promote characteristic tourism projects, and the construction of a tourism characteristic town, tourism agriculture demonstration parks, etc. The construction of small towns with tourism characteristics and demonstration gardens of tourist agriculture. Another example, in the field of rural environmental protection, according to the local soil, crops and market demand, build fertilizer distribution system, realize "precise fertilization, reduce the use of chemical fertilizers, protect the quality of arable land; through the integration of fertilizers, medicines, machines, and big data, realize the organic matter safety, high efficiency, standardization of the return to the field, and accelerate the transformation and utilization of kitchen wastes, manure, and straws; through the use of cloud computing, Internet of Things, artificial intelligence, 3S and other information technology means, the use of cloud computing, artificial intelligence, 3S and other information technology means, and the use of digital service capabilities have been gradually improved, Through the use of cloud computing, Internet of Things, artificial intelligence, 3S and other information technology means, monitoring of land, water, etc., to strengthen the protection of resources and conservation of utilization, and promote the development of green agriculture.

5.4. Actively fostering new forms of rural digital economy

Digital economy" vertical metallurgical extension of the agricultural industry chain, that is, digital technology and modern industrial operations into the agricultural industry chain, the whole value chain. Agricultural industry chain takes agricultural products as its core elements and components, and is an organic whole with close connection and coupling of agricultural production, processing, storage and transportation, sales and services.

E-commerce has a broad space for development in rural areas, which can broaden the market space and sales channels for agricultural products and become an effective carrier for the development of rural digital economy. The development of the digital economy has brought new development opportunities to rural areas, and we should actively cultivate new forms of

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rural digital economy. E-commerce in rural areas has a broad space for development, can broaden the market space and sales channels of agricultural products, and become an effective carrier for the development of rural digital economy. It is necessary to vigorously promote the development of the rural e-commerce industry, establish a digital industrial chain for the synergistic development of production, supply and marketing, transform the traditional logistics facilities, establish digital intelligent logistics, establish a perfect storage network in the radiation place, and realize the fine management of product transportation. Through the development of the rural e-commerce industry, rural e-commerce has become an important driving force for rural revitalization. Cultivating new forms of rural digital economy also includes vigorously developing rural digital financial services, strengthening the information-based management of rural factor resources, and so on. By fostering new forms of rural digital economy, a broader space will be expanded for rural revitalization.

5.5. Cultivating a rural digital workforce

Talent is a key factor in the realization of rural revitalization, from the cultivation, attraction and use of talent and other multi-dimensional actively explore the construction of digital and scientific and technological talent to feed the long-term mechanism of rural areas, to vigorously cultivate a high level of rural digital talent team, through the use of network platforms on the rich resources for training, and combined with the implementation of offline field training, and constantly improve the information literacy of farmers, to cultivate their digital awareness, and encourage them to actively participate in the digital economy to build new rural areas to meet the development of the new professional farmers. Take the initiative to participate in the digital economy to build a new countryside for the new professional farmers to meet the development of the digital economy. At the same time to enhance the digital level of local farmers, we should also do a good job in the introduction and training of rural digital talent, actively attract digital talents to return to the countryside, encourage more college graduates to work in rural areas, to provide them with a broad space and platform for development, and continue to carry out activities of digital talents to the countryside, popularize the relevant knowledge of digital agriculture and rural areas for the construction of the digital countryside to provide support for the talents.

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