

Research on the Spatial Spillover Effect of Digital Village Construction to Promote Rural Consumption Upgrading

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Abstract

In recent years, facing many domestic and external risks and challenges such as international trade frictions, the new crown epidemic, and the disappearance of the demographic dividend, the economy is under downward pressure, so the government will expand domestic demand as a strategic point of the new development pattern to enhance the driving force of domestic demand on the economy. The contribution rate of China's household consumption to economic growth decreased from 58.6 in 2019 to minus 22.2 in 2020, and the decline in household consumption to the economy was obvious. Insufficient consumption of residents, especially rural residents, in 2021, the per capita consumption of rural residents in China is only 52.51 of the per capita consumption of urban residents, and promoting rural residents' consumption has become an important measure to expand domestic demand. The construction of digital villages has not only become an important path to achieve rural revitalization, but also can vigorously promote the consumption and upgrading of rural residents. In 2019, the State Council issued the Outline of Digital Village Development Strategy, and the 14th Five-Year Plan in 2021 and the No. 1 Document of the Central Committee in 2022 proposed to accelerate the construction of digital villages. Through the construction of digital villages such as rural communication infrastructure, digital agriculture, and rural digital inclusive finance, the rural consumption environment has been improved, and the consumption channels that rural residents can access have been diversified and integrated, enriching the forms of consumption. The asymmetry of information resources between rural and urban areas in the consumer market has been greatly weakened, releasing the consumption potential of rural residents. At the same time, Internet e-commerce transactions have cross-regional characteristics, and the economic benefits brought by them will inevitably bring certain spillover effects in space.

Keywords

Digital Village, Consumption Structure, Spatial Spillover Effect.

1. Literature review

Scholars have studied the different impacts of digital village construction on rural economic development from different perspectives. For example, Yi Xingjian and Zhou Li found in their research that digital finance is conducive to increasing overall household consumption, especially in rural areas, central and western regions, and low- and middle-income people[1]. Zhang Xuliang et al. pointed out that the Internet can break the constraints of geographical time and space and realize the possibility of innovation in close neighbors, and at the same time, the Internet accelerates the collection of cross-regional factors, which is conducive to the coordinated development of regions[2]. Wei Ping and Chen Xiaowen proposed that regions with high levels of digital economy development in China tend to be adjacent to regions with high levels, while regions with low development levels tend to be adjacent to regions with low levels[3]. Hao Chengyao and others believe that the digital economy has a strong network effect, which can stimulate the innovation of traditional rural industries, generate emerging business

formats, and release the rural consumer market and drive the upgrading of rural consumption structure. [4] In many literatures, the impact of digital villages on rural residents' consumption upgrading is relatively small, only Wang Yanan and other papers, and this paper only empirically tests the impact of digital village construction on China's rural consumption upgrade, [5] does not discuss its spillover effect from a spatial perspective, and the construction of digital villages and residents' consumption have significant spatial connections in reality, so the author will analyze the economic impact of rural consumption upgrading on geographical adjacent space in the context of digital villages from a spatial perspective.

2. Research on the current situation of digital village construction

2.1. Improve the efficiency of rural industries

The digital economy can improve the efficiency of decision-making. Digital technology can help agricultural operators to carry out agricultural analysis and production decision-making, promote the agricultural production mode from relying on manual experience to using digital technology to regulate production, realize human decision-making to data decision-making, change the situation that farmers pay attention to personal experience and personal feelings, and improve decision-making efficiency.[6]

2.2. Help rural e-commerce

The construction of digital villages has brought great changes to rural life. Internet + has promoted the transformation of rural production and lifestyle to modernization, and rural e-commerce has developed rapidly. Rural e-commerce can not only sell rural characteristic products through online e-commerce, but also increase the sales income of farmers. It can also absorb rural surplus labor and promote business incubation. Rural e-commerce can provide different employment opportunities in the face of rural surplus labor with different individual characteristics. For example, left-behind women can work in customer service, warehousing services and other related positions, while other personnel with certain professional skills can work in technical maintenance.[7] In terms of promoting business incubation, the service system of rural e-commerce industry has been gradually improved, government support and learning costs have been reduced, rural areas have become the incubation base for many foreign entrepreneurs, and foreign entrepreneurs have spread e-commerce entrepreneurship information through the relationship network, injecting new impetus into the development of rural social entrepreneurship.[8]

2.3. Improve the comprehensive quality of grassroots managers

Digital villages also bring spiritual wealth to rural residents, the popularity of mobile devices and networks allows farmers to learn about current affairs and news through various channels, and grassroots party members and cadres can learn new national policies and calls in a timely manner and improve the quality of party members. The construction of digital villages has lifted the overall spiritual outlook of rural residents. However, with the development of digital villages, the lack of rural digital governance capabilities has been exposed. Influenced by traditional administrative thinking, managers of grassroots governance lack the awareness of big data governance.[9] This has led to the fact that although big data systems have been built in various places, the utilization rate is generally low, and grassroots managers simply understand digital village governance as collecting data and doing things online, and do not see the impact of real digital technology on the transformation of rural governance models.

2.4. Digital financial inclusion injects impetus into regional development

In remote areas, areas with relatively backward economic development and areas with less population density, the cost of traditional financial services is higher and the benefits are low,

so the development of traditional inclusive finance in these areas is relatively backward, and it is difficult for people to enjoy the convenience of inclusive financial services, and the resulting phenomenon of financial exclusion occurs. Digital HP Finance uses advanced information technology to simplify the original information flow, and the information circulation of the financial market is easy to understand, so that people can enjoy high-quality financial services simply and quickly. Especially for remote areas, people generally have a low level of education, and it is difficult to handle inclusive financial services in traditional ways. At the same time, the development of digital financial inclusion has also spawned new fund savings platforms. Compared with previous financial institutions such as microfinance and banks, these platforms have lowered the threshold for inclusive financial services, enabling poor groups to make small asset investments.

2.5. Current problems

The construction of digital villages depends on the strong support of infrastructure. For example, rural information network infrastructure and rural cold chain logistics and other distribution facilities. According to the 50th Statistical Report on the Development of China's Internet Network, in terms of information infrastructure construction, as of June 2022, China's gigabit optical network has the ability to cover more than 400 million households, and a total of 1.854 million 5G base stations have been built and opened, realizing "5G in counties and 5G in villages and villages". However, the construction of rural logistics system and agricultural mechanization level to support the digital transformation of rural industries is still relatively lagging behind, which is not conducive to the digital development of rural e-commerce and rural industries. In addition, the construction of digital villages requires a large number of compound talents who understand both agricultural production and management and digital technology knowledge and its application, and at present, China's rural digital construction is still in its infancy, so digital talents are difficult to meet the demand for a while. Moreover, due to the "siphon effect" in developed areas, there is a brain drain from more underdeveloped areas and rural areas.

3. Literature References Study the current situation of rural residents' consumption structure

Referring to the practices of Cheng Mingwang and Zhang Jiaping[10], this paper decomposes rural consumption into subsistence consumption (including food, clothing and housing expenditure), enjoyable rural consumption (including leisure, entertainment, tourism and cultural consumption expenditure), and developmental rural consumption (including education, transportation, communication and health care expenditure), and uses these three forms of rural per capita consumption to measure rural consumption upgrading. According to the data survey, it is found that the promotion effect of digital village construction on developmental rural consumption is the strongest, followed by enjoyable rural consumption, and finally survival-oriented rural consumption. In addition, it can be seen that China's farmers have gradually developed enjoyable consumption demand based on leisure and entertainment, and there is a lot of room for development of the impact of digital village construction on enjoyable rural consumption.

4. Theoretical research on the spillover effect of consumption upgrading driven by digital village construction in terms of space

4.1. Theoretical analysis of spatial spillover effects

According to the first law of geography, the closer the geographical distance, the greater the likelihood of spillover effects between regions. Therefore, it is easier to form an economic

development circle with Jinmu interaction in areas that want to enter geographically, such as the Yangtze River Economic Belt, the Beijing-Tianjin-Hebei region, and the Guangdong-Hong Kong-Macao Greater Bay Area. Spatial spillover effect refers to the spatial effect of production activities and economic activities that cross various barriers and produce effects other than the intended purpose, forming a universal spatial role in economic activities. According to Richardson H W[11], spatial spillover effects are divided into positive spillover effects (trickle-down effects) and negative spillover effects (reflux effects). The "trickle-down effect" refers to the fact that in the process of economic development, the rich first benefit the rich, expand the job market through investment and consumption, increase the demand for raw materials, and then indirectly enhance the economic level of the poor group as a supplier, and achieve a certain degree of poverty alleviation. At the same time, the rich provide more tax revenue for the government, and taxes provide a certain guarantee for the poor class and indirectly alleviate poverty. The "return effect" refers to the negative effect caused by the cumulative effect of economic factors such as population migration, resource flow, and trade between regions, which hinders the economic development of surrounding areas.

4.2. Research on the spatial spillover effect of digital village construction on rural development.

In the context of digital villages, rural residents' consumption concepts, consumption habits and consumption behaviors will be reshaped. Digital payment has become the new normal of payment for some rural residents, digital inclusive finance has brought rural residents a moderate view of advanced consumption, and some middle-aged people, digital loans or borrowing to build houses have become a new choice. This concept is the trust of rural residents in the steady improvement of expected consumption, which is conducive to promoting the development of the rural consumer market. Spatial spillover refers to the spatial impact of a change in one variable of a single spatial unit, which is used to measure the impact of changes in the local area on other regions. Since the digital economy is based on information technology such as Internet big data, it has the characteristics of interconnection and information sharing, and can break through the geographical distance limitation in space, so the development level of digital economy in a certain region will also have a spatial spillover effect on the related region. China's rural consumer market is huge, and its upgrading and transformation will inevitably have an impact on regional economic development. According to the research, the following conclusions can be drawn: (1) The development of the digital economy is conducive to the realization of industrial agglomeration and industrial integration, and promotes the double increase of farmers' income and consumption, and industrial agglomeration will form professional industrial parks for large-scale production. The spillover effect of industrial agglomeration will accelerate rural technological innovation and product innovation, reduce farmers' learning costs, thereby reducing the production costs of agricultural products, increasing the diversity of agricultural products, and laying an economic foundation for the double increase of farmers' income and consumption[12]. (2) The role of digital level in promoting the change of rural residents' consumption structure is only significant in the eastern region, and has little impact on the change of rural residents' consumption structure in the central and western regions. The reason is that due to the higher quality of life of residents in the eastern region, it belongs to the area with a small gap between urban and rural development nationwide, which is directly reflected in the level of digital development and has a greater impact on the change of rural residents' consumption structure. There are large differences between urban and rural areas in the central and western regions, and the level of digitalization in rural areas is lower than that in cities, resulting in low convenience for rural residents' consumption and the number of goods they can choose from, and weak consumption vitality.[13]

5. Give advice on relevant policy formulation.

Socialism with Chinese characteristics has entered a new era, and the main contradiction in our society has been transformed into a contradiction between the people's growing need for a better life and unbalanced and inadequate development. China's economic development as a whole shows that the southeast coastal areas are developed and the inland areas are backward; Urban economic development is prosperous, while rural population loss is serious and the economy is backward. It is necessary to strengthen rural infrastructure, accelerate digital technology research and development and innovation, strengthen digital talent training and training, optimize the environment for the development of digital rural economy, and other measures to strongly promote the digital transformation of rural industrialization and fully release the enabling effect of digital economy on rural industry revitalization. In addition, provincial governments should strengthen inter-regional cooperation, make rational use of the spatial spillover effect of digital means on poverty alleviation, and promote further poverty alleviation in provinces. Regional governments should break with the original "fundamentalist" governing philosophy, strengthen regional cooperation and ties, further reduce or even eliminate economic and financial barriers between regions, increase the sharing of technology, and information, and work together to reduce poverty.

Acknowledgements

This work is supported by Anhui University of Finance and Economics Undergraduate Scientific Research Innovation Fund Project in 2022, Project number: XSKY22165.

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