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A Study on the Mechanisms and Strategies of Digital Intelligence Empowerment for High-Quality Economic Development in the Revolutionary Old Area of Southern Jiangxi

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Abstract:

Currently, the wave of digital intelligence is sweeping the world, and digital intelligence technologies centered on the Internet of Things and artificial intelligence are constantly driving changes in production models. Under the convergence and superposition of the "dual carbon" goals and the new era national policies for revitalizing revolutionary old areas such as southern Jiangxi, digitalization and intelligence are becoming important means for revolutionary old areas to promote high-quality economic development. The Gannan region is rich in ecological resources and has a deep red cultural heritage. However, due to geographical limitations, its infrastructure is weak, its industrial structure is single, and its data elements are incomplete, which greatly hinders its economic development. Driving factor reorganization, industrial transformation and governance optimization through digitalization and intelligence is an important way to promote high-quality economic development in revolutionary old areas. By analyzing the theoretical mechanisms, existing practices and challenges of digitalization driving economic development in the old revolutionary base areas of southern Jiangxi, this paper puts forward specific and feasible development suggestions.

Keywords:

Digital intelligence; High-quality development; The development of old revolutionary base areas

1. Introduction and Literature Review.

General Secretary Xi Jinping has always been concerned about the development of the old revolutionary base areas. He has visited the old revolutionary base areas for investigation and research on several occasions, and personally diagnosed and prescribed the high-quality development of the old revolutionary base areas.The Fourth Plenary Session (Enlarged) of the 15th Jiangxi Provincial Committee of the Communist Party of China also made work arrangements to build "three high ground", the first of which is to build a high ground for high-quality development in revolutionary old areas. Promoting high-quality development in Ji-

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angxi's revolutionary old areas is not only a major economic task, but also a major political task, which is of landmark significance and exemplary role for the accelerated development of revolutionary old areas across the country. Due to a variety of factors such as the natural environment, location conditions and resource endowments, revolutionary old areas usually face problems such as low economic development level, weak local finance and slow growth of people's income in the process of development. Digital and intelligent technologies can help break down physical boundaries, accelerate information exchange and improve governance efficiency, and can be an effective means to solve the long-standing historical legacy problems in revolutionary old areas. To this end, this project explores the mechanism of digital and intelligent empowerment for high-quality development in revolutionary old areas, case studies of existing practices and challenges, with the aim of providing policy references for promoting digital and intelligent transformation in revolutionary old areas and promoting high-quality regional development.

Digital intelligence is a new driving force for reconstructing China's economic growth pattern, optimizing the social governance structure, and promoting high-quality development of economic and social governance forms (Zhao Tao, 2020; Qi Yudong, Xiao Xu, 2020). Existing scholars' research on the relationship between digitalization and high-quality development mainly focuses on two aspects: the role of digitalization and intelligence in high-quality development. In terms of the role of digitalization in high-quality development, Zhang Yun and Bai Peiwen (2023) proposed that the digital economy adds new impetus to economic growth by reshaping China's new advantages in international cooperation and competition. Xia Jiechang and Zhang Yajun (2024) believe that digitalization empowers the high-quality development of the service industry through five main paths: expanding the scale of the service industry, improving the efficiency of the service industry, optimizing the structure of the service industry, innovating the model of the service industry, and optimizing the development environment. From the perspective of the role of intelligence in high- quality development, Yang Xin and Wan Yushuang (2023) believe that strengthening the construction of "demand-oriented" services, enhancing the digital literacy of all parties related to health care, creating new highlands for the development of the digital economy, and promoting high- quality development in the old revolutionary base area of southern Jiangxi. Liu Jianli and Li Jiao (2024) argue that the high-quality development of intelligent manufacturing has become a key support for China's manufacturing industry to be embedded in the high end of the global value chain. In addition, a few scholars have explored the role of digital and intelligent transformation in promoting high-quality economic development, such as Liu et al. (2025), who argue that urban digital and intelligent transformation drives high-quality economic development by attracting talent aggregation and promoting industrial structure upgrading. Overall, there are not many academic achievements in the academic field based on the "digital intelligence" perspective to study how to empower high-quality economic development. Therefore, it is urgent to put forward specific and feasible development suggestions based on the requirements of high-quality economic development in the central region in the context of digital intelligence empowerment, by analyzing the theoretical mechanisms, existing practices and challenges of digital intelligence promoting economic development in the old revolutionary base area of southern Jiangxi.

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2. The theoretical mechanism of Digital and intelligent empowerment for High- Quality Economic Development in the revolutionary old areas of southern Jiangxi.

Based on theories such as New Structural Economics, institutional economics, and development economics, analyze the mechanism by which digital intelligence empowers high- quality economic development in the old revolutionary base area of southern Jiangxi.

2.1.Factor allocation: Digital technology reconfigures the combination of production factors.

Digital and intelligent technologies can break the boundaries of information transmission between production factors such as land and labor. Data, as a new type of production factor, by collecting data in real time and analyzing the collected data in combination with artificial intelligence technology, can significantly enhance the ability to precisely monitor and dynamically allocate various production factors in the production process, reduce unnecessary factor input in the production process, and improve factor allocation efficiency. From the perspective of institutional economics, digitalization, by reducing information asymmetry, optimizes the institutional environment for factor usage and enhances the institutional efficiency of resource allocation.

2.2.Industrial restructuring: Promoting the upgrading of traditional industries and the integration of new business forms.

Digital and intelligent technologies, by integrating the Internet of Things, intelligent systems, etc. into traditional production processes, drive the transformation of production methods towards intelligence and automation, enhance the synergy of all links in the industrial chain, and thereby increase total factor productivity. From the perspective of new structural economics,Digitalization helps regions leverage their resource endowment advantages and develop industrial forms that are in line with their comparative advantages. For instance, relying on new forms of business such as e-commerce and live streaming, the Gannan region can activate the potential of red culture and ecological resources, promote the growth of emerging industries such as characteristic tourism and digital cultural and creative industries, and achieve a diversified and high-level industrial structure.

2.3.Efficiency improvement: Reducing transaction costs and stimulating platform effects.

Digitalization and intelligence, through high-speed information networks and intelligent analytical means, significantly reduce the cost and difficulty for enterprises to obtain market information, improve the timeliness and accuracy of decision-making, and thereby enhance enterprises' ability to respond to market changes. From the perspective of development economics, this helps to stimulate economies of scale and scope and drive the transformation of regional economies towards intensification. At the same time, based on intelligent analysis of consumer behavior and demand characteristics, enterprises can achieve precise matching of supply and demand, optimize inventory and production plans, reduce resource waste, and improve the overall

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quality of economic operation.

3.Practical Exploration of Digital and Intelligent Transformation in the Old Revolutionary Base Areas of Southern Jiangxi.

3.1.The digital transformation of agriculture has achieved remarkable results.

The Gannan region is relying on 5G+ Gannan Navel Orange Big Data platform to promote digital transformation of agriculture. The platform combines 5G, Internet of Things, big data, AI, cloud computing and blockchain technologies to precisely monitor the entire production process of navel oranges. Through 5G technology, growers can monitor various environmental indicators in their orchards in real time, issue early warnings and make adjustments for conditions that do not meet the requirements, and increase the yield and quality of navel oranges. At the same time, the platform connects market supply and demand information to help farmers accurately grasp market dynamics, expand sales channels, and significantly improve industrial efficiency.

3.2.Industrial manufacturing is moving towards intelligent upgrading.

ZhichangNankang's furniture industry has digitized the entire process from design, production to sales by integrating technologies such as 5G, big data and blockchain. Through the "one network, five centers" production model, it further promotes the transformation of Nankang furniture from traditional manufacturing to intelligent manufacturing, enhancing the core competitiveness of the industry and the influence of regional brands.

3.3. Red culture and tourism achieve innovative integration.

The Gannan region, with its rich red culture, has made full use of its advantages to recreate revolutionary historical scenes through technologies such as virtual reality and augmented reality and create immersive red tourism experience projects, allowing tourists to have a more intuitive understanding of revolutionary history. By building a big data platform for red culture and tourism, information on red scenic spots, cultural resources and tourism services in various places is integrated to provide personalized travel route recommendations, online reservations and other services for tourists. At the same time, use digital communication means such as short videos and live streaming to expand the influence of red culture and tourism, attract more tourists, and promote the coordinated development of red culture inheritance and tourism economy.

3.4.Digital governance and public services continue to be optimized.

Take Pingxiang Gaotan Village as an example. During the process of rural construction, by building a digital village platform, villagers have been able to quickly access the service guide, understand the village situation and appearance, and improve the convenience of residents' lives. In terms of agriculture, Gaotan Village has integrated a smart agriculture system to monitor the agricultural production process and increase the yield and quality of crops. In addition, the platform has integrated resources such as rural e-commerce, distance education, and telemedicine to broaden villagers' income channels and improve educational and medical con-

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ditions. To enhance villagers' sense of happiness and security in life.

4. The Real Predicament of Digital and Intelligent Empowerment for High- Quality Economic Development in the Old Revolutionary Base Area of Southern Jiangxi.

4.1.Weak digital infrastructure.

The terrain in southern Jiangxi is mainly mountainous and hilly, and the complex terrain makes it difficult and costly to build digital infrastructure. There are problems such as incomplete network coverage and slow network speed in some remote areas, which cannot meet the high network quality requirements for digital transformation, and there is a large gap in digital infrastructure construction between urban and rural areas. The weakness of digital infrastructure has greatly restricted the application and promotion of digital technologies in various fields, affecting high- quality economic development.

4.2.Insufficient impetus for the digital transformation of industries.

At present, some enterprises in southern Jiangxi have limited understanding of digital and intelligent transformation and lack systematic guidance on transformation strategies. Constrained by financial pressure, many enterprises are struggling to afford the investment required for equipment renewal and technological transformation, and are generally facing the predicament of "not knowing how to transform, not daring to transform, not wanting to transform". In addition, digital applications have insufficient penetration and limited coverage in key areas such as agriculture and traditional manufacturing, and the transformation process in various industries is uneven, which restricts the overall transformation effect in the region.

4.3.The data element market is not sound.

The data element market in southern Jiangxi is still in its early stages of development. The core industries of the digital economy are relatively small in scale, and the information industry is at the medium and low end. There is a lack of corresponding technological innovation capabilities in the fields of digitalization and intelligence, and there is still a considerable gap with developed regions in terms of the environment for scientific and technological innovation and entrepreneurship, which greatly restricts the rational operation and development of data and cannot effectively promote high-quality economic development.

4.4. Shortage of digital talents.

Constrained by regional development levels and public service capabilities, the Gannan region lacks competitiveness in attracting high-end digital talents and faces the pressure of local talent outflow. The low match between talent supply and the demand for industrial digital transformation, especially the severe shortage of compound talents with both digital technology and industry knowledge, has become an important bottleneck in promoting digital transformation and upgrading.

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5.Countermeasures and Suggestions for Empowering High-Quality Economic Development in the Old Revolutionary Base Area of Southern Jiangxi with Digital Intelligence.

5.1.Strengthen the construction of digital infrastructure.

We will increase investment in digital infrastructure in southern Jiangxi, coordinate the network layout in urban and rural areas, and focus on remote villages. We will accelerate the construction of 5G networks and fiber-optic broadband to make the network coverage in these areas more comprehensive and faster. At the same time, we will promote the implementation of new infrastructure such as data centers and cloud computing platforms to provide solid computing power support for the digital transformation of local industries. And promote the integration of digital infrastructure with traditional infrastructure such as transportation and energy to create an efficient and coordinated infrastructure system. Through policy guidance, attract more social capital to participate and form a diversified investment model to make up for the shortcomings of digital infrastructure as soon as possible.

5.2. Improve the data element market.

It is necessary to establish platforms for the development and sharing of data resources, break down data barriers between different industries, and enhance information exchange among enterprises. Promote the circulation of data elements by establishing rules and standards for data transactions. At the same time, the protection of data should be strengthened, and a sound data security management system should be established to ensure the security of data at the stages of collection, storage, use and trading, and increase the value of data elements.

5.3.Promote the digital transformation of industries.

Strengthen guidance and support for the digital transformation of enterprises, formulate complete digital transformation strategies, provide professional technical guidance and training services for enterprises, and help enterprises solve the problem of "not knowing how to transform". At the same time, financial support should be provided to enterprises that meet the transformation requirements, subsidies should be given for each link in the enterprise transformation process to reduce the cost of enterprise digital and intelligent transformation and alleviate the concerns of enterprises that "dare not transform". Encourage leading enterprises to take the lead, promote transformation experience, expand the coverage of transformation, and promote balanced development among industries.

5.4. Optimize talent and financial support.

We should implement talent introduction programs and provide subsidies for high-tech talents in terms of housing, medical care, education, etc., to enhance the attractiveness of talents. And work with local colleges and universities to set up relevant majors that meet the needs of digital and intelligent transformation and cultivate skilled talents. It is necessary to improve the financial support system and encourage banks and other financial institutions to provide enterprises with financial products related to digital and intelligent transfor-

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mation and provide financial support for enterprises' digital and intelligent transformation.

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