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Research on the normalized assistance mechanism for rural low-income population under the digital economy ——Taking the rural areas of Guangxi as an example

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Abstract: The digital economy emerged as the times require in the new round of information technology revolution. It is a new kinetic energy and a new engine to promote high-quality economic development. It also provides a good opportunity for the digital construction of rural agriculture and rural revitalization. Based on the era of digital economy, this paper analyzes the status quo of the normalized assistance mechanism for the rural low-income population in Guangxi, and points out from six aspects: industrial assistance, intelligent assistance, employment assistance, consumption assistance, support of aspirations and intelligence, and multi-subject assistance. At present, the problems existing in the normalized assistance for the rural low-income population in Guangxi, and suggestions for building a normalized assistance mechanism for the rural low-income population are put forward from these six aspects, so as to accelerate the realization of common prosperity for the rural low-income population.

Keywords: digital economy; rural low-income population; assistance mechanism

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1. Introduction

In recent years, the development of modern information technology has gradually fostered the new form of the digital economy, bringing fresh impetus to China's economic growth, profoundly impacting the traditional economic structure, and infusing the economy with new vitality and kinetic energy. The digital economy is experiencing rapid development not only in cities but also in rural areas[1]. With the successful conclusion of poverty alleviation efforts, consolidating the achievements and preventing relapse into poverty has become one of the main current challenges. The 2023 Central Document No. 1 required "researching the regularized assistance mechanism for rural low-income populations and underdeveloped areas after the transition period." The 2025 Central Document No. 1 further emphasized the need to "establish a coordinated mechanism for preventing relapse into poverty and a hierarchical, categorized assistance system for low-income populations and underdeveloped areas." Therefore, constructing an assistance mechanism is crucial for consolidating the achievements of poverty alleviation and facilitating rural revitalization. However, the current assistance mechanism for the rural low-income population faces a series of problems.

According to data published in the China Statistical Yearbooks from 2022 to 2024 by the National Bureau of Statistics of China, China's rural population was 498 million, 491 million, and 477 million in 2021, 2022, and 2023, respectively. Correspondingly, the rural low-income population was 117 million, 116 million, and 113 million annually. It is evident that although the rural low-income population is decreasing year by year, its size remains substantial. Against the backdrop of the digital economy, this large group poses the question: how to utilize the digital economy to improve the regularized assistance mechanism for the rural low-income population, facilitate their transition from low-income to lower-middle-income status, and ultimately to middle-income status, thereby building a harmonious socialist rural society and achieving rural revitalization. This is a significant issue worthy of our consideration.

2. Literature Review

Scholars from various fields have long paid close attention to poverty issues and the low-income population in China's rural areas, conducting extensive related research. Although historic achievements have been made in poverty alleviation, the overall economic development level remains relatively low, and the income gap between urban and rural residents continues to widen. Absolute poverty has been eliminated, but a large number of low-income people still exist in rural areas, and relative poverty has not been fundamentally improved[2]. The main reasons for the slow income growth of the rural low-income population include low cultural and technical skills, underdeveloped social networks, weak ability to navigate the market, poor employment prospects and risk resilience, as well as severe homogeneous competition in characteristic agriculture and rural industries in some regions, leading to increased production but reduced income for farmers[3]. Currently, assistance policies targeting rural low-income populations and underdeveloped areas exhibit distinct "non-regularized" and "transitional" characteristics[4], making them increasingly inadequate to meet the needs of advancing comprehensive rural revitalization. Problems

include goal misalignment among assistance actors leading to "presenteeism without productivity," the "suspended" nature of assistance systems hindering collaborative mechanisms, systemic constraints on assistance resources causing "involutionary" dilemmas, and inherent misconceptions in assistance thinking giving rise to a tendency towards "campaign-style governance" with periodic deviations[5].

Scholars have extensively discussed how to assist rural low-income populations and underdeveloped areas. Compared to absolute poverty, rural low-income issues exhibit characteristics of relativity and multidimensionality, requiring greater emphasis on regularization and differentiation in governance[6]. Consequently, new demands are placed on governance models: emphasizing pluralism in governance subjects and shifting from campaign-style to routine governance in strategies. It is crucial to recognize the heterogeneity within the rural low-income group and construct a hierarchical and categorized assistance mechanism based on key metrics such as the population's own characteristics, income structure, labor capacity, and endogenous motivation[7]. Hierarchical standards can be formulated by combining income identification with multidimensional capability identification methods, while continuing the dual-driven classification model of "developmental assistance" and "social relief"[8]. Starting from optimizing the "merger of two databases" through the convergence and integration of the "two policies" (likely referring to poverty alleviation and social assistance), a new pattern of regularized assistance and a multi-layered policy system for the low-income population should be built around the holistic governance goals of "guaranteeing basic needs, preventing risks, and promoting development"[9]. Using rural revitalization as a strategic support, innovative "mass participation, mass sharing" income distribution mechanisms should be created[10]. In the post-poverty-alleviation era, the relative poverty of vulnerable rural groups has gradually garnered significant attention from scholars. How to prevent these groups from falling back into poverty and provide them with more attention and assistance has become a key research focus.

The main reasons for the poverty of rural low-income groups are as follows: First, the lack of factor endowments and narrow income-generating channels in rural low-income groups[11].the digital economy can promote farmer prosperity and wealth by facilitating rural labor mobility, encouraging rural land transfer, and enhancing rural entrepreneurship levels[12]; leveraging the process of new urbanization and the popularization of mobile payments, the digital economy indirectly empowers industrial development, stimulates new quality productive forces, thereby promoting stable income growth for farmers[13]. However, the development of the rural digital economy is inseparable from high-quality public service support. To effectively address the demand for public services driven by rural digital economy development in ethnic regions, public departments in these areas need to further deepen supply-side structural reforms in public services[14]. Currently, agriculture and rural areas are in a low-efficiency digital transformation stage. While remarkable achievements have been made in empowering the "agriculture, rural areas, and farmers" (Three Rural Issues) through the digital economy, practical difficulties persist. These include uneven adaptation of rural populations to the digital economy, imperfect conditions for embedding the digital economy into "Three Rural" work, and various issues requiring optimization in high-quality governance empowerment[15], such as stakeholders' vague understanding of "digital

productivity," lagging information infrastructure construction, and low digital literacy among farmers[16].

Based on the above research, we can find that scholars basically agree that the digital economy can promote rural development, but most of the existing research is based on the industrial level, and there is a lack of research on the assistance mechanism for the rural low-income group, especially on Little research has been done on the western frontier. Therefore, this paper takes the digital economy as the background to study the impact path of the digital economy on the rural low-income population. Taking the rural areas of Guangxi as an example, it puts forward suggestions on the construction of a normalized assistance mechanism for the rural low-income population under the digital economy.

3. The significance of the digital economy in promoting the normalized assistance mechanism for the low-income population in western rural areas

Following the agricultural economy and the industrial economy, a new form of economic and social development has emerged—the digital economy[17]. An important part of building a digital China is to build a digital agricultural countryside. Under the background of the current digital economy, with the continuous development of network information technology and logistics systems, the vast rural areas need to keep up with the trend of digital development in order to obtain greater economic benefits. The digital economy is infiltrating all aspects of agricultural life, and the development of the digital economy is inevitable. It will have a profound impact on the future development of rural industries and the increase of farmers' income.

3.1. The digital economy can promote the quality transformation of rural industries

On the one hand, this is inseparable from the consolidation of the foundation of digital agriculture, the construction and improvement of the data acquisition system of wireless sensors such as satellites, and the acceleration of the construction of agricultural and rural digital resource systems. On the other hand, it is also inseparable from the promotion of the digital transformation of agriculture. In rural areas and agricultural production and operation management, the promotion of the use of digital means such as cloud computing is accelerated, and the comprehensive, in-depth integration and integration of all aspects of agriculture and information technology are realized. application, accelerate the integration of primary, secondary and tertiary industries, and share tangible benefits with farmers[18]. Especially for the rural low-income groups, the closed, asymmetric, and fragmented social information restricts their pace of continuous income increase. The digital economy has brought opportunities for rural low-income groups and provided favorable conditions for rural development.

3.2. The digital economy can promote the transformation of rural economic efficiency

For a long time, agricultural markets have been the main place for the circulation of agricultural products, but with the emergence of new e-commerce platforms such as Taobao, farmers now have a market where they can buy and sell anytime, anywhere, without being limited by time and geography. According to the "2024 China Agricultural Product E-commerce Development Report", the online retail sales of agricultural products in China will reach 587.03 billion yuan in 2023, an increase of 12.5% over the previous year and about five times that of 2014. By integrating demand, farmers can gain better ideas about what to produce. This form of integration not only contributes to the innovation of the rural circulation service system, but also facilitates the creation of a batch of well-known, high-quality, and distinctive rural e-commerce product brands. Taking Pinduoduo as an example, the platform connects dispersed farmers with the national market through the "Pinduoduo" model, promoting the upward movement of agricultural products. In September 2024, Pinduoduo's "Duoduo Harvest Pavilion" was launched. As of that month, the sales of agricultural products in 160 key counties for rural revitalization have reached 2 billion yuan, with an order volume of over 40 million. The sales of geographical indication agricultural products such as pomegranate, Zhouzhi kiwi, and Wenxian iron stick yam have increased significantly, with a growth rate of over 20% compared to last year. In addition, new agricultural formats derived from the Internet are also attracting people, such as creative agriculture, adoption agriculture, sightseeing agriculture, etc. According to a survey by Pinduoduo, as of 2021, the proportion of new young merchants born in the 1990s, 95s, and 2000s on the platform has exceeded 49%, and the proportion of "new new farmers" born in the 95s has exceeded 13%, with a total of over 126000 people, most of whom are young entrepreneurs returning home. Moreover, one "new new farmer" returning home can drive 5 to 10 95s. All of these indicate the significant importance of the digital economy for underdeveloped areas and low-income rural populations. It not only creates more economic activities, but also brings opportunities for sharing the fruits of development[19].

3.3. The digital economy can prevent the urban-rural income gap from widening

In the era of rapid development of the digital economy, information technology access equipment is very important. With IT equipment such as smartphones, it is possible to quickly and easily obtain information on agricultural production technologies and agricultural product markets, which is not only conducive to the improvement of human capital accumulation, but also to the improvement of agricultural production methods, thereby increasing income levels. One of the main manifestations of the application of digital technology is e-commerce. The participation of e-commerce can bring more sales channels for farmers, thereby improving the sales scale and profitability of agricultural products, increasing farmers' agricultural production and operation income, and creating new opportunities for villagers. Create more entrepreneurial opportunities and non-farm jobs. In addition, research has found that the improvement of digital literacy significantly promotes

entrepreneurial activities among farmers, alleviates their credit constraints, and thus achieves income growth for farmers[20]. In terms of income effects, rural residents have a greater impact than urban residents, and their promotion effects are more pronounced in terms of material capital, human capital, and social capital. Therefore, narrowing the digital gap between urban and rural areas and extending the benefits of the digital economy to low-income groups in rural areas can to some extent reduce the income gap between urban and rural areas[21].

3.4. The digital economy can help promote the digital transformation of the government

Leveraging internet big data can effectively promote government self-reform and achieve effective assistance for rural low-income targets. For example, Zhejiang Province launched the "Low-income Farmer Common Prosperity System" in 2020, the first nationwide system applying digital reform to precision assistance. It has preliminarily achieved multifunctional integration, including dynamic management, real-time supervision, statistical analysis, effectiveness evaluation, and information inquiry. Centering on the modernization of the government governance system and capacity, governments at all levels actively utilize the digital economy to manage the rural low-income population. Using digital technologies such as the internet and big data, fragmented information is integrated into a unified system, enabling instant perception, scientific decision-making, proactive service, and efficient operation, advancing digital government and rural revitalization.

4. The status quo of normalized assistance for rural low-income population in Guangxi under the digital economy

Since the 18th National Congress of the Communist Party of China, China has consistently adhered to the principle of targeted measures. Assistance initiatives such as industrial poverty alleviation, employment poverty alleviation, asset income poverty alleviation, and basic living guarantees have significantly improved the quality of life for the impoverished population. However, during the transition period for effectively consolidating and expanding poverty alleviation achievements and linking them with rural revitalization, there remains a large-scale rural low-income population, including rural subsistence allowance recipients, rural individuals in extreme poverty, rural populations vulnerable to relapse into poverty, and those facing severe difficulties in basic livelihood due to illness, disaster, accidents, or significant income reduction. According to the Guangxi Statistical Yearbook (2023), although the per capita disposable income of rural residents is rising year by year, it remains relatively low, and the income gap between urban and rural residents is still large; rural areas are still predominantly populated by low-income groups.

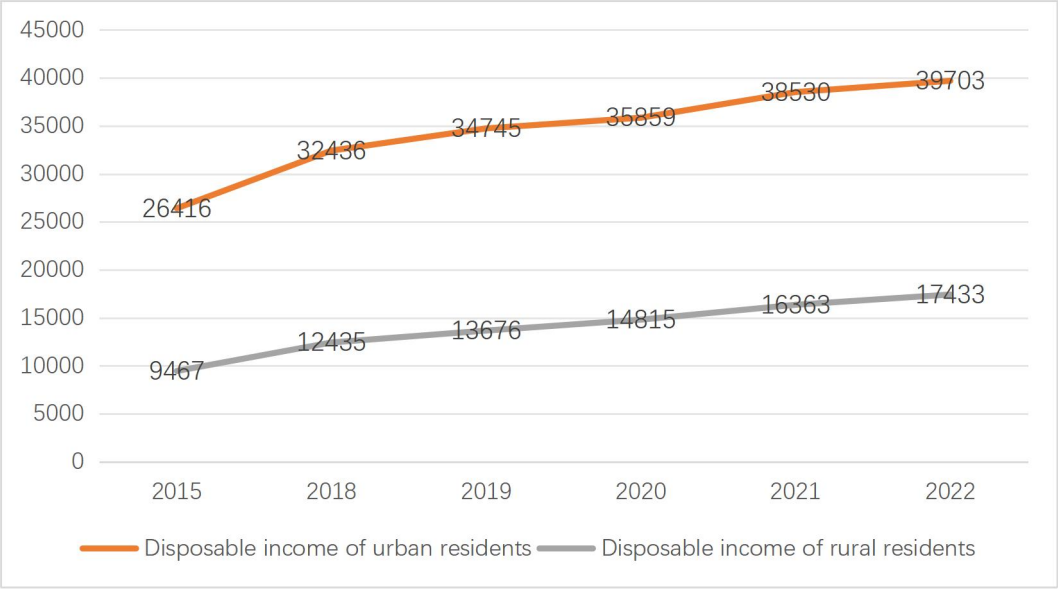

Figure 1. Per capita disposable income of urban and rural residents in Guangxi[①]

4.1. Policy Mechanism Transformation: Preliminary Construction of a Hierarchical and Categorized Assistance System

According to data from the 2024 Monitoring and Evaluation Report released by the Guangxi Rural Revitalization Bureau in 2025, Guangxi has established a "Dynamic Monitoring System for Preventing Relapse into Poverty" centered on a provincial big data platform. In 2024, 162,000 households were included as monitoring targets, accounting for 12.3% of the rural low-income population. Precise identification is achieved through "red-yellow-blue" three-color tiered management: red (high-risk households impoverished due to illness/disaster, 7.1%), yellow (medium-risk households with unstable employment, 21.6%), and blue (households with labor capacity awaiting assistance, 71.3%). Relying on the "online networking, offline gridding" model, industrial and employment assistance covered 835,000 person-times. The rural subsistence allowance standard was raised to 6,800 yuan/year (an increase of 9.7% compared to 2023). This preliminarily achieves an institutional transformation from "poverty alleviation" to "poverty prevention and wealth promotion."

4.2. Digital Infrastructure Empowerment: Infrastructure Coverage Reaches New Heights

Digital infrastructure has achieved comprehensive coverage. Administrative village fiber optic access rate reached 100%, village-level e-commerce service station coverage reached 93.5% (an increase of 41.2 percentage points compared to 2020), and 1,200 county-level agricultural product cold chain logistics origin cold storage facilities were built, achieving 100% coverage. Supported by this, the income-boosting effect of the digital economy is

① Data source: Guangxi Statistical Yearbook (2023).

significant. Rural online retail sales reached 126.8 billion yuan in 2024, a year-on-year increase of 31.2%. Among them, the provincial-level platform "Guangxi Haoye" helped 123,000 low-income farmer households achieve an average household income increase of 1,860 yuan. However, the urban-rural digital divide persists; the smartphone usage rate among farmers aged 60 and above is only 32.7%, constraining the deep penetration of services②.

4.3. Income Path Expansion: Digital Economy Activates Multiple Channels

Regarding industrial integration, 47 digital agriculture demonstration bases were established, drone plant protection coverage reached 62%, driving an 18.5% reduction in production costs. Rural e-commerce cultivated 32,000 "village broadcaster" talents, helping sell 8.46 billion yuan worth of agricultural products in 2024, with Liuzhou river snail rice noodles accounting for 73% of online sales. In terms of employment innovation, platform gig economy (e.g., Meituan Preferred group leaders) created 97,000 jobs; rural cultural tourism livestreaming (e.g., the "homestay + livestreaming" model in Guilin Longji Terraces) absorbed 21,000 people; flexible employment in county-level digital factories covered 53,000 people. For skills support, 1,850 "digital skills to the countryside" training sessions were conducted, covering 415,000 person-times. The mastery rate of digital skills among the rural labor force rose from 32.1% in 2023 to 57.6% in 2025. However, the proportion of agricultural digital output value is only 8.3%, lower than the national average of 11.2%, indicating that deep industrial integration still needs breakthroughs③.

5. Problems existing in the normalized assistance of Guangxi's rural low-income population under the digital economy

At present, the digital development of rural areas in Guangxi has been significantly enhanced, and the digital economy and "agriculture, rural areas and farmers" have been integrated and developed to a certain extent, and the spillover effect of the digital economy has continued to show, but there are also certain problems:

5.1. Industrial predicament: the development of "agriculture, rural areas and farmers" ushered in a bottleneck

The digital transformation of agriculture is the core manifestation of digital industrialization and industrial digitization, and it is also the proper meaning of digital village construction. However, the agricultural digital output value and the proportion of the digital economy in the industry have always been at the bottom of the three industries, and there is a significant gap with the digital development scale of the secondary and tertiary industries[22]. Due to many reasons such as the epidemic and the lack of digital investment in the

② Data source: Guangxi Communications Administration and Department of Commerce, "2024 Digital Rural Development Report".
③ Data source: Department of Agriculture and Rural Affairs, Department of Human Resources and Social Security of Guangxi.

agricultural industry, the supply of agricultural-related factors is limited, the digital production of agriculture is limited, and the circulation of agricultural products is limited, which brings certain challenges to the development of rural areas and agriculture.

In rural education, the digital divide magnifies educational inequities. During the prevention and control of the epidemic, in order to suspend classes without stopping, students can study online, but the education gap between urban and rural students has widened. According to the survey, the families of rural students in Guangxi face many difficulties in taking online classes, such as learning equipment can not keep up with the lack of resources and other problems. At the same time, rural students are still at a disadvantage in the frequency and duration of online courses, and even 1/3 of lower grade students have no online courses at all. In addition, due to the backward infrastructure and lack of equipment in rural areas, it will affect the normal learning of students from poor families in some remote areas. The issue of education equity has always existed, and it has become more prominent during the epidemic, and the gap in the digital economy is an important step to consolidate the achievements of my country's "educational poverty alleviation".

5.2. Wisdom Dilemma: Insufficient Wisdom Investment and Assistance in Rural Areas

Driven by the COVID-19 pandemic, the digital economy developed rapidly. However, the use of information technology varies significantly among different population groups. According to statistics from the China Internet Network Information Center (CNNIC), the internet penetration rate in 2024 was 78.6%, with the rural penetration rate at 67.4%. The urban-rural digital divide continues to deepen structurally. Nationally, the average smartphone ownership rate among the rural population aged 60 and above is only 38.5%, while in Guangxi's rural areas, it is as low as 32.7%. Approximately 18 million rural residents are in a state of "digital disconnection" due to lacking smart devices or network coverage. According to the Rural Digital Literacy Report 2025 released by the Chinese Academy of Social Sciences, the digital literacy score of Guangxi rural residents is 58.6 (out of 100), significantly lower than that of urban residents (81.4). Among them, only 23.8% can independently operate government service apps, and 37.4% cannot identify online fraud information. These groups are mainly concentrated in rural areas with relatively backward economy, low income and low educational level[23]. Therefore, this brings many problems to Guangxi rural smart assistance.

In government cloud. There are too many functional departments, and there will be serious information islands; lack of business management software and big data platform support, it is difficult to effectively monitor rural low-income groups, and the difficulties and risks they face cannot be monitored in time. On the business cloud side. A single sales channel of agricultural products will often lead to the problem that agricultural products cannot be sold; it is impossible to accurately control the quality and safety of agricultural products; due to information asymmetry, the market cannot be accurately controlled, and there is a lack of scientific guidance, and it is in a weak position in price forecasting. . In terms of farming cloud. Farmers lack scientific guidance in planting technology and do not have a professional platform for learning; in terms of scientific fertilizer distribution, lack of

knowledge and experience, and it is difficult to achieve precise fertilization; there is no effective promotion and application of intelligence, mechanization, and automation in rural areas, so the level of agricultural modernization It is not high; agricultural enterprises lack mature labeling software, especially agricultural production and agricultural management software, and do not have enough understanding of their own relevant policies[24].

5.3. Employment Dilemma: Digital Divide Increases Difficulty in Flexible Employment

Employment assistance lacks a stable and long-term mechanism. "It is better to teach a man to fish than to give him a fish." However, the digital divide makes flexible employment difficult.

During the epidemic, flexible employment has obvious advantages, which can not only relieve the pressure of employment, but also reduce the pressure of family life. The epidemic has greatly changed my country's job market, and many industries are facing the dilemma of complete shutdown, especially the accommodation industry, catering industry, tourism and other service industries, which makes a large number of employees idle. At the same time, e-commerce, express delivery and other industries have ushered in new opportunities, orders have increased sharply, and there is an extreme shortage of short-term employees. People with smartphones can quickly access information and employment opportunities through recruitment websites or other social platforms. However, there are some people who do not have smartphones and will face many difficulties. Not only will it be difficult to obtain employment information, but the difficulty of mobility will also increase. In addition, because there are many flexible employment positions such as courier, takeaway, and online car-hailing drivers, it is necessary to have a certain ability to use digitalization. For groups without smartphones, it is difficult for them to participate in such business positions. Therefore, the impact of the epidemic has reduced employment opportunities for rural low-income poor groups who lack digital skills, and personal income has also been affected.

5.4. Consumption dilemma: poor sales of agricultural and sideline products

Although the consumption assistance has achieved initial results, the problem of sales of agricultural and sideline products is still a major obstacle to the development of the low-income population in rural Guangxi.

First, because the market awareness of enterprises is not strong. Enterprises and cooperatives still have the idea of "waiting, relying, and wanting". They do not strictly follow market rules and actively communicate with the external market. They do not have a strong awareness of turning products into commodities, and are accustomed to working hard. There is a lack of effective understanding of how to catch the fast lane of the consumer assistance sales platform. Second, due to the remoteness of some areas, inconvenient transportation, limited warehousing and logistics, and the lack of a large-scale management model for these agricultural and sideline products, there are many retail customers, and the quality and brand need to be further improved. There is room for improvement; third, offline products are

impacted by online sales, and the rural low-income population lacks experience in online sales; at the same time, the supply and marketing chain is not sound enough. Some products lack relevant qualification certificates such as production and circulation licenses, which leads to obstacles in the circulation of e-commerce platforms, supermarkets and other channels, and product sales cannot achieve the desired effect.

5.5. The dilemma of supporting the aspirations and supporting the intelligence: the digital literacy of the digital economic entities is low

Although various rural areas are currently actively exploring measures to improve farmers' digital literacy, they have not achieved significant results. The digital divide between urban and rural areas and between different groups is gradually widening, and the disadvantaged elderly and low-income groups may become new groups with digital skills poverty.

The digital literacy of farmers is not only related to the convenience and practicality of their daily life, but also to the construction of digital villages and the timely implementation of the strategic goals of rural revitalization. Digital literacy is multifaceted and must include at least two aspects: on the one hand, users must have good digital manipulation skills; on the other hand, they must also have a high level of digital security awareness. However, digital security awareness is the biggest gap between urban and rural digital skills, according to surveys and announcements. When it comes to digital skills, take mobile phones as an example. Although smartphones are widely used in rural areas, and the ability of rural residents to use smartphones is rapidly approaching that of urban residents, more than one-third of rural residents use smartphones only for leisure and entertainment. One-third of rural residents believe that the use of mobile phones or computers "does not affect" personal employment, entrepreneurship and income[25].

5.6. The Dilemma of Multiple Subjects: Lack of Government Guidance and Regulation

Multi-subject assistance generally involves stakeholders such as the government, leading enterprises, professional cooperatives, and rural low-income population. There are problems such as unequal status and opaque distribution of interests among subjects. Compared with leading enterprises, the rural low-income population is in a relatively weak position in terms of ideology, knowledge, rights protection awareness, etc., and some enterprises provide industrial assistance out of personal logic, but in fact seek corporate interests.

Regarding whether the rural low-income population should develop the digital economy, some grass-roots governments do not fully understand its important value, and lack guidance and regulation on the development of the digital economy. Traditional rural industries lack enthusiasm and initiative for digital transformation, and lack of understanding of the role of using digital technology to improve their operational efficiency and promote business model changes. Therefore, there are certain difficulties in realizing the upgrading of products and the transformation and upgrading of business models. At the same time, assistance can easily lead to the idea of "waiting for help" among the rural low-income population, thinking that

assistance is the government's business. This is actually overemphasizing the logic of the government and delegating the responsibility for assistance to the grassroots level, causing some people to have a relative wrong thinking.

6. Suggestions on constructing a normalized assistance mechanism for rural low-income population in Guangxi under the digital economy

6.1. Industrial assistance: Starting from the reality of the "three rural" issues, building a new format of rural economy

According to the basic characteristics of the rural low-income population, when constructing a normalized assistance mechanism for the rural low-income population and realizing rural revitalization, the "three rural" issues must be fully considered. Maximize the use of digital means to help rural low-income people solve problems such as agricultural development, basic livelihood, and rural education, so that rural low-income groups can truly feel the benefits of the digital economy.

In the field of agricultural digitalization, the transformation of agricultural digitalization is reflected in intelligent agricultural production and networked operations. The exploration of innovations in intelligence and networking must start from the improvement of sub-sector types, regional agricultural production and environmental management. New types of agriculture, such as agriculture, create and improve political incentives and develop new economic entities that leverage the beneficial effects of digital technologies to build organized and efficient agricultural value chains.

In the field of ensuring people's livelihood, by fully utilizing new forms of digital economy such as live streaming and e-commerce, relying on platforms such as Taobao and Pinduoduo, we will broaden the sales channels of agricultural products, cultivate "village broadcasting" talents, and improve the income level of rural areas and farmers. Many e-commerce platforms have carried out agricultural and economic support policies, focusing on supporting agricultural enterprises, agricultural products, and agriculture, rural areas and farmers in poverty-stricken areas, continuing to promote the building of characteristic agricultural product brands, the promotion of poverty alleviation agricultural products, and the increase in agricultural product sales, consolidating the achievements of poverty alleviation. With the help of "Internet + Employment" service, rural residents can grasp urban employment information faster and more conveniently, and realize the flow to cities.

In the field of rural education, on the one hand, it is necessary to continuously increase investment in rural compulsory education, establish a fully covered school broadband network, and at the same time increase the number of informatization courses, and continue to provide high-quality educational resources for rural areas through information system teaching. In terms of deficiencies, the intergenerational transmission of rural residents has gradually reduced the information inequality between the next generation of urban and rural residents[26]. On the other hand, enterprises are encouraged to actively undertake social responsibilities and jointly study science and technology education poverty alleviation projects with education administrative departments, industry partners and non-profit organizations. For example, Tencent carried out online literacy education for minors in rural

areas, and launched the DNA (Digital Natives Action) campaign to help 100 poverty-stricken counties with education and poverty alleviation.

6.2. Smart assistance: build a basic database and monitoring system for low-income population by hierarchical classification

With the technical support of the big data information systems of various provinces, through automatic collection, exchange, search, entry, etc., the basic database of low-income population is established, and real-time dynamic update is realized. Building a basic database of low-income population is an important basis for the development of dynamic monitoring of low-income population.At the same time, it is necessary to establish a standardized, systematic, and intelligent monitoring and early warning mechanism for low-income populations as soon as possible, in order to comprehensively enhance the ability to identify and provide assistance to low-income populations[27].

The first is to build a database by hierarchical classification. On the one hand, based on the provincial big data information system, it realizes the real-time automatic acquisition of the information of the protected objects, and integrates and registers the data of the rescued objects; Failed, newly withdrawn rescue objects, and actively discovered and entered objects, formed the data integration and aggregation of suspected difficult objects, and carried out hierarchical integration to provide data support for dynamic monitoring. And on this basis, the channels for collecting important information have been smoothly expanded.

The second is to carry out dynamic monitoring of low-income groups, and to carry out early warning and early detection of targets that may lead to poverty. On the one hand, low-income groups are classified and monitored according to their categories. Real-time online alerts for families in unusual or difficult financial circumstances. On the other hand, offline visits supplement monitoring. Establish and improve an effective door-to-door survey mechanism, visit and care for people in need, and conduct household surveys every six months or a year according to the actual situation of the rescued families to fully grasp the dynamic changes. At the same time, according to the visiting and caring service system, the Ministry of Social Assistance arranges regular visits on a weekly, monthly and quarterly basis according to the difficulties and risks faced by the recipients, so as to keep abreast of the dynamics of low-income recipients in a timely manner.

6.3. Employment assistance: classified guidance and assistance to rural low-income population employment issues

The employment problem of rural low-income population is related to the improvement of people's livelihood and rural revitalization[28]. Because the rural low-income population has the characteristics of lack of labor force for parents, generally low education level of family members, and mostly elderly people in the family, the employment assistance for them should be targeted. Classified guidance and assistance are provided to low-income households. For farmers who have the ability to work but without skills, it is solved through training, market and funds, and for farmers who do not have the ability to work, it is solved through the level of social security. Establish a monitoring system for rural low-income

population in various regions, and find out the employment status, employment willingness, and demand for labor for monitoring objects with labor ability, strengthen labor skills training, and guide poor laborers to find employment in agricultural parks and professional cooperatives; make good use of employment public welfare positions , implement the principle of priority placement of monitoring objects; standardize the construction and management of poverty alleviation workshops, implement the principle of priority support for nearby employment of monitoring objects with labor force, and promote monitoring objects to stabilize employment and increase income.

Carry out more free vocational training activities for key groups, formulate special training plans for low-income migrant workers, and adopt public procurement training services to provide low-income farmers with free employment and poverty alleviation training. Enterprises are encouraged to provide pre-employment training for recruited low-income farmers with basic knowledge, safety knowledge, and operating procedures as the core content. Based on the main technical colleges and universities in the province, a series of unique professional courses are offered, so that students from low-income peasant families can also master certain skills.

6.4. Consumption assistance: digital economy empowers a new model of sustainable development of consumption assistance

First, continue to expand the consumption of products and services, strengthen targeted procurement and regional collaborative assistance, mobilize social forces, encourage participation in assistance, give play to the role of industry associations and charities, and encourage citizens to give priority to purchasing key consumer assistance products. The second is to improve the logistics and sales system, strengthen the construction of county-level and village-level logistics systems, rationally plan cold chain logistics facilities, improve the level of agricultural and sideline products trading services, strengthen the integration of agricultural and sideline products production and sales, and make up for the shortcomings of e-commerce services. The third is to strengthen early warning and fully solve the problem of slowing sales of agricultural and sideline products. The fourth is to enhance the market awareness and competitiveness of characteristic agricultural and sideline products, promote the large-scale production of characteristic agricultural and sideline products, and effectively improve the quality of agricultural and sideline products and the characteristic brands of agricultural and sideline products. Ultimately, it will help to form a new model of consumption assistance and sustainable development driven by the market mechanism and jointly promoted by the government, market and society, and provide important support for consolidating and expanding the achievements of poverty alleviation.

6.5. Supporting Zhizhi and Zhizhi: Strengthening digital economy training for rural low-income population

The construction of digital villages not only needs to strengthen infrastructure construction, but also let them understand digital technology and how to use digital means to solve problems. The path is to pay attention to improving the digital awareness of rural

subjects. It is necessary not only to look at the present, but also to look into the long-term. This requires a combination of short-term skills training and long-term investment in education to continuously improve the digital awareness and digital information literacy of rural low-income residents. In the short term, an effective measure is to promote digital technologies in rural areas by establishing digital skills training centers at the district and village levels to provide specialized and centralized learning places for the rural poor. The fundamental solution in the long run is to improve the level of information education in rural areas. It is also possible to make full use of social media to give full play to the positive effects and positive energy of rural revitalization leaders and "Internet celebrity secretaries"[29], urging villagers to understand the concept of digitalization and adopt digital agricultural methods and paths.

6.6. Multi-subject assistance: integrating resources to create a consortium of intelligent assistance services for low-income population

The assistance to the rural low-income population also needs to fully mobilize different subjects, such as government and social assistance. By creating a consortium of intelligent assistance services for low-income populations, the intelligent level of social assistance work can be greatly improved.

The first is to coordinate public resources and promote aid reform. Integrate the systems and policies of various social assistance departments, led by the Provincial Department of Civil Affairs, in conjunction with education, housing and construction and other departments to combine civil affairs assistance, housing and other special assistance and electricity reduction and exemption into one unified online application , to realize "one matter" transfer of assistance application matters after the identification of difficulties, and simplify the elements that initially required multiple initiations and multi-party applications to "one", help personnel to work in a unified manner, and transform decentralized supply into shared care.

The second is to integrate social resources and promote the construction of "assistant alliances". Under the leadership of the local party committee and government, led by the civil affairs department, together with the member units of the Social Assistance Joint Conference, based on the future community and digital village, effectively link the resources of the government, society and the market, and jointly create a "smart assistance service consortium" , to provide a variety of services for local low-income groups, such as financial support, skills training, psychological counseling, companionship and care services. Through resource docking, supply and demand matching, and online and offline communication, the "assistant consortium" can gradually realize the normalization and long-term assistance of the new model of "materials + services", making assistance more convenient and giving the masses a sense of gain and happiness ,sense of security[30].

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