

Research on the Impact Mechanism of Digital Economy on Public Resource Allocation in Southwest China

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Abstract: With the development of electronic information technology, the global economy has entered the era of big data. Given its transformative potential, the efficiency of public resource allocation affects the future development trend of human society, which is a topic critical research area. To address this research gap, this study examines the “Guizhou Goods Out of the Mountains” e-commerce project in Guizhou Province, aiming to explore the impact of the digital economy on the allocation of public resources in the southwestern part of China. Research findings indicate that the digital economy can effectively enhance the efficiency of public resource allocation through e-commerce, logistics improvement, and policy support. The improvement of infrastructure in Guizhou Province has significantly facilitated the upgrading and coordinated development of regional industrial structures. This paper proposes countermeasures such as multi-dimensional supervision, differentiated brand strategy, and coordinated development of sales channels to address issues such as false marketing, product homogeneity, and the existence of sales channels. Collectively, these findings demonstrate that this research provides empirical evidence for the allocation of public resources in the southwestern region, fills the theoretical gap, and offers a reference for the study of such issues.

Keywords: Digital Economy, Public Resource Allocation, Electronic Commerce, Infrastructure

1. Introduction

1.1. Research background

With the rapid advancement of Internet technology, the in-depth mining of big data, and the groundbreaking developments in blockchain technology, the digital economy has become a brand-new driving engine for global economic development. The “Report on China’s Digital Economy Development in 2024” states, Since the 18th National Congress of the Communist Party of China, China’s digital economy has entered a period of accelerated development. It took only four years for the digital economy scale of 30 trillion yuan to grow to 50 trillion yuan, which indicates that the scale of China’s digital economy has been steadily increasing. The “East-to-West Computing Resource Allocation” project in China has achieved phased results with the construction of hub nodes, and the imbalance in the spatial distribution of computing resources between the East and the West has been largely improved. However, in the southwestern region of China, due to the complex terrain

conditions, lagging development of ethnic areas, and scattered public facilities, there is still a need to fill the research gap regarding the interaction mechanism between the digital economy and public resources from a regional perspective. This paper fully leverages the advantages of digital technology to optimize the allocation and utilization of public resources and deeply explores the matching paths between the digital economy and public resources. It provides the theoretical basis for optimizing policies in the southwest region.

1.2. Literature review

Li et al. proposed that in the context of the rapidly changing global economy, the quality of life and satisfaction of residents have become an important indicator for measuring social progress. The digital economy has boosted Internet adoption, enhancing resident satisfaction [1]. In terms of how residents can conveniently obtain government services, medical information, educational resources, and other information through the Internet to enhance the convenience and efficiency of their lives, Dowling and Lucey's research indicates that online shopping, digital payment, telemedicine, and online education can break the constraints of time and space, improve the quality of life and enhance residents' satisfaction [2]. Guo et al. employed the difference-in-differences method to analyze and concluded that the digital economy is conducive to alleviating congestion in developed regions such as the eastern part and big cities, laying a solid foundation for the high-quality development of the economy [3]. In the research on the efficiency and fairness of public resource allocation in rural areas of China, Zhang et al. pointed out that compared with eastern provinces, although the western regions have reached a certain level in the allocation of educational resources, this area is relatively lacking in the allocation of medical and social security resources [4].

Most scholars' relevant studies mainly focus on the developed regions in eastern China or the national overall level or mainly concentrate on the fields of industrial transformation and economic sustainable development. Rarely have any articles conducted in-depth research on basic resource allocation, such as public resources, based on multi-faceted factors, including geography, economy, and culture, in the southwestern region.

1.3. Research framework

This research is based on various influencing factors such as geography, economy, and culture in Southwest China to verify the mechanism of the impact of the digital economy on public resource allocation. This article has meticulously selected the "Guizhou Goods out of the Mountains" project, which is a prime example of the collaboration between the Guizhou Provincial Government and enterprises in promoting agricultural product sales through e-commerce, as a research case for in-depth analysis. This project is based on the e-commerce platform and aims to promote the agricultural products of Guizhou Province to a broader market, thereby injecting a strong impetus into the local economic development. Firstly, this article will systematically review the existing literature and reports, integrate relevant empirical data, and comprehensively and deeply analyze the actual impact of the emerging model of e-commerce-driven sales promotion on the public resource allocation in economically underdeveloped areas of Guizhou Province. Secondly, this study will explore how e-commerce businesses can facilitate a more optimal allocation of resources between urban and rural areas, as well as its positive role in improving infrastructure, enhancing educational standards, and improving public services such as medical care. Finally, based on the results of the analysis, this paper will put forward a series of targeted and feasible suggestions for the continuous development of this project and the further improvement of the efficiency of local public resource allocation.

2. Case description

Guizhou Province, a key area in China's southwest region focusing on poverty alleviation, has deeply implemented the rural industrial revolution. It has proposed the slogan of selling Guizhou's goods from mountainous areas and established an online shopping platform. A total of 41 e-commerce enterprises have been registered, and 37 live-streaming hosts have been signed up. There have been over 100 live-streaming sessions annually. This measure has made the teas, vegetables, medicinal herbs, fungi, and fruits from Guizhou highly sought-after in Beijing, Shanghai, Guangzhou, and other places. In order to optimize the supply chain and promote the in-depth integration and development of e-commerce and express logistics in the entire province, the "Three-Year Action Plan for County-level Commercial Development in Guizhou Province (2023-2025)" proposes to improve the network of county-level commercial facilities, enrich the layout of commercial business types, promote the coordinated distribution of rural logistics, facilitate the transformation and upgrading of county-level circulation enterprises, expand the richness of rural consumption markets, promote the high-quality development of rural e-commerce, improve the quality of supply of high-quality agricultural products, and strengthen the construction and improvement of the agricultural product circulation system. There are a total of seven items. As of September 2024, Liupanshui City has successfully operated 5 Guizhou Local Products Cloud Warehouse projects, taking the lead in achieving full coverage of cloud warehouse construction in all counties and districts across the province. Currently, it has established cooperative relationships with 286 enterprises and integrated resources from 12 express delivery companies. The daily average number of dispatched orders is close to 20,000, and the annual e-commerce sales volume has exceeded 200 million yuan. At the same time, it has reduced the logistics costs for enterprises by more than 20 percent [5]. The implementation of this project has enabled Guizhou Province to achieve remarkable success in poverty alleviation and has improved the local agricultural product production-to-sale industrial chain, promoting the rapid development of the local economy and public resource allocation.

3. Analysis of the problem

Guizhou has broken geographical barriers by leveraging e-commerce live-streaming. Through reconfiguring the mode of public resource allocation, it has optimized the layout of infrastructure, expanded the service scope, and promoted the concentration of resources such as supply chains and logistics warehouses in economically underdeveloped areas. To a certain extent, this has alleviated the imbalance in the spatial and efficient distribution of public resources in mountainous areas. However, false marketing also consumes public trust resources. Problems such as the serious homogeneity of agricultural products and the mismatch between talents and technologies have also led to challenges in the fairness of resource allocation.

3.1. Influence identified of "Guizhou goods out of mountains" project

3.1.1. Foster the development of local talent pools and policy support

Agricultural e-commerce has spurred local talent development, supported by favorable policies. The rise of rural e-commerce has helped characteristic agricultural products reach the international market, demonstrating the vitality of the rural economy, promoting the coordinated development of related industrial chains in counties, building an industrial development environment, effectively alleviating employment pressure, providing employment opportunities for rural areas, and opening up a new path to income increase and prosperity for farmers [6]. In 2023, online retail sales in Guizhou Province reached 89.77 billion yuan, with a year-on-year growth of 40.8 percent. A total of 20,000 people were trained as e-commerce talents and rural brokers, and 1,300 live-streaming marketing teams were

cultivated. The development of rural e-commerce nowadays cannot be separated from the promotion of national policies. Research shows that policy intervention has a significant positive promoting effect on the development of rural e-commerce. E-commerce policies have driven an increase in enterprises in rural areas of China [7]. With strong support from policies, various universities have also attached great importance to the cultivation of talents in the field of e-commerce. For instance, the e-commerce major of Guizhou College of E-commerce Technology is making every effort to establish a new type of integrated and innovative talent cultivation model that combines “AI” with “New Business Science”. Taking into account the current market development of e-commerce, the school has meticulously planned the professional curriculum system, including core courses such as “Fundamentals of E-commerce Law”, “Principles of Merchandise Science”, “Introduction to Marketing”, “Practical Operations in E-commerce” and “Fundamentals of Marketing Psychology”. The school provides live-streaming venues and equips them with live-streaming equipment for the students of this major, aiming to offer them a comprehensive and in-depth learning and development platform. In the past two years, this major has won a total of 17 awards in various skills competitions. Among them, in the comprehensive skills of e-commerce, it won first place in the first prize of the provincial competition in 2023 and the second prize in the national competition. At the same time, the e-commerce live-streaming project has won first place in the first prize of the Guizhou Skills Competition for two consecutive years (in 2023 and 2024). As of now, the Live Streaming and Online Marketing major of Guizhou E-commerce Vocational College has successfully enrolled students for four consecutive years and has cumulatively provided 300 professionals for the field of live streaming. Moreover, the average employment rate of graduates in this major is as high as 98%. This has led to an abundant reserve of talent in this field. The e-commerce industry in Guizhou Province is advancing steadily.

3.1.2. Enhance logistics infrastructure and other infrastructure configurations

The provincial government of Guizhou Province has taken a series of measures to accelerate the remediation of deficiencies in rural logistics and continuously improve the comprehensive transportation infrastructure network system. Rural logistics, as a key link in the development of the modern logistics system, has been significantly improved in Guizhou Province through the vigorous construction of rural roads, fundamentally enhancing the development conditions of agriculture and rural areas in the province. The Provincial Postal Administration has adopted various cooperation models, which have effectively promoted the gradual improvement and development of the rural express delivery logistics system. The express delivery coverage has reached over 1,000 small towns and nearly 10,000 villages. By building cold chain logistics bases, a logistics system combining networks, hubs, and channels has been constructed. With the establishment of smart logistics warehouses, logistics efficiency has been greatly enhanced, and the total social logistics cost has been reduced. At present, 84 cold storage facilities have been built in Liupanshui City, with a total storage capacity of 266,500 tons and a total volume of 718,400 cubic meters. 24 water conservancy areas with an area of over 500 mu have benefited from the cold chain project services, with a service coverage rate of 49%. The average distance between these water conservancy areas and their corresponding cold chain bases is approximately 10.1 kilometers. In addition, the loss rate of vegetables in the city during the circulation process is about 15%. The total area of the agricultural cold chain logistics park in western Guizhou is 791.9 mu. The daily average transaction volume of agricultural products in this logistics park is about 320 tons, with a daily average transaction amount of 2.3 million yuan. At the same time, the daily delivery volume is also stable at about 300 tons. The storage capacity of the cold storage facilities in the park is 86,400 cubic meters, and the utilization rate exceeds 95%. Nowadays, this logistics park has gradually developed into an important distribution center for agricultural products and an important distribution center for agricultural

products' upward flow in the western region of Guizhou Province. After the completion and operation of the Liupanshui National Backbone Cold Chain Logistics Base, it is expected that the annual sales revenue will exceed 2 billion yuan, the annual profit will exceed 100 million yuan, and the annual tax payment will reach over 40 million yuan. At the same time, it is conducive to expanding the scale of employment, directly providing about 1,000 job positions, and driving the employment of about 3,000 people in related industries, adding strong impetus to the high-quality development of Liupanshui. The key factors that influence the export volume of a region include the degree of improvement of telecommunication infrastructure, the widespread application of the Internet, and the level of the logistics performance index [8]. Through this measure, the economically underdeveloped areas in Guizhou Province not only improved the construction of roads, network facilities, and logistics but also enhanced the efficiency of the configuration of digital infrastructure in rural areas and promoted the economic development of the region.

3.1.3. Break geographical restrictions and promote the digital development of public services

The digitalization process has accelerated the optimization of public resource allocation. The agricultural assistance live-streaming has promoted the extension of network infrastructure from cities to rural areas, achieving full coverage of 5G networks in key places, almost full coverage in natural villages, and ensuring that 100% of the towns are connected to the network. This has effectively solved the problem of signal coverage and further promoted the widespread popularization of public services such as remote medical care and online education. Leaders in the field of higher education have meticulously conceived a brand-new model of a digital campus atmosphere [9]. In Guizhou, many rural areas have adopted the strategy of introducing digital resources and signed cooperation agreements with professional institutions providing educational digital services to carry out educational assistance. As a result, this area innovated the teaching models for local rural teachers and significantly improved the quality of education. The construction of intelligent campuses has become a crucial measure for enhancing the overall level of educational informatization and improving the quality of education and teaching [10]. The development of digitalization has enabled educational resources to reach remote mountainous areas, breaking geographical limitations and narrowing the gap between urban and rural areas. It has also improved the construction of educational infrastructure in rural regions.

3.2. Problem-identified analysis

3.2.1. Erosion of public trust due to false marketing practices

The false promotion has led to doubts among consumers regarding the agricultural products of Guizhou Province and has also had some impact on the efficiency of the government's public resource allocation. Some merchants will affix the label "purely natural" to the agricultural products grown by farmers to attract consumers. When demand exceeds supply, some merchants substitute non-local products or use counterfeit labels to inflate prices. Consumers often have an insufficient understanding of quality attributes such as product performance, satisfaction, and reliability. Sellers take advantage of the opportunity of insufficient information to convey false information through advertising and direct communication channels, deceiving consumers to increase income [11]. The prevalence of false advertisements, lax supervision of product quality, and the imperfect service guarantee system have become the key obstacles restricting the development of agricultural assistance live streaming and the entire e-commerce live streaming industry [12]. Since 2023, a large number of illegal cases involving false advertising and promotion closely related to the lives of people have emerged in many places in Guizhou Province. The Guizhou Consumer Rights Protection Platform handled a total of 323,500 complaints, reports, and inquiries throughout the year, with an overall

completion rate of 99.9%. It recovered a total of 51.8435 million yuan in economic losses for consumers. 148 cases of unfair competition were investigated and dealt with, including confusing behavior and false promotion, and a total of 2.7504 million yuan in fines and confiscations were imposed. At the same time, the intensity of advertising supervision in key areas was strengthened. A total of 1,076 cases of illegal advertising were investigated and dealt with, with a total amount of fines and confiscations reaching 12.73 million yuan. During the initial stage of its work, the government set up a sales platform for local agricultural products, enhanced popularity, and invested a great deal of manpower, physical resources, and financial resources to complete the construction of infrastructure. A series of actions by merchants will lead to a decrease in people's trust in such products, making it more difficult for the government to implement relevant policies and requiring more resources to be invested in regulation.

3.2.2. Inefficient resource allocation due to product homogeneity

Nearly one-third of the county-level cities across the province have adopted “ecological agricultural products” as the core concept but lack unique and differentiated positioning. The promotion strategies of the kiwifruit in Xiuwen County and the chili peppers in Zunyi City are highly similar, which has led to the repeated allocation of policy subsidies and traffic resources, thereby suppressing the vitality of innovation and development. Xiuwen County is the largest kiwifruit production area in Guizhou Province. In 2023, its planting area reached 167,000 mu, accounting for the dominant position in the total kiwifruit planting area of Guizhou Province and ranking first in the province. It is second only to Shaanxi and Sichuan, ranking third in the country, accounting for approximately 3.9% of the total kiwifruit area in the country. The “Guizhou Long” green-flesh kiwifruit variety accounts for over 98% of the total, forming a highly concentrated single-variety development model. In 2023, the fresh fruit output of Xiuwen exceeded 100,000 tons, accounting for about 4.2% of the national total output (238.07 million tons), and the brand value exceeded 3.078 billion yuan, with a comprehensive output value reaching 3 billion yuan. The annual planting area of chili peppers in China has remained stable at over 11 million mu for a long time. As one of the major chili pepper-producing areas in China, Zunyi City has the largest chili pepper planting area among prefecture-level cities. In 2023, the annual planting area of chili peppers in Zunyi City remained above 2 million mu, with a production volume of approximately 3.13 million tons, accounting for 40% of Guizhou Province and 8% of the national total. In 2023, the total output of chili peppers from the Zunyi City Chili Pepper City reached 320,000 tons, covering more than 20 provinces including Chongqing, Sichuan, Shanghai, Hubei, Hunan, Xinjiang, etc. in China, and was also exported to 30 countries and regions including Nepal, Japan, India, Myanmar, South Korea, the United States, Mexico and Southeast Asia, with a total transaction volume of 6.7 billion yuan. The Xiuwen Kiwi and Zunyi chili peppers have adopted extremely similar strategies in their promotion. Both of them rely on technological strength to promote standardized production, are led by the government to integrate the production and sales links, attach importance to brand building and international market expansion, and are committed to the extension and development of the entire industrial chain. Meanwhile, competition within the industry is becoming increasingly fierce. Merchants place too much emphasis on product promotion and neglect product innovation, technological research and development, and industrial upgrading. The high degree of product homogeneity is not conducive to industrial innovation and will reduce the total market revenue [13]. The homogeneity of agricultural products has disrupted the market mechanism and led to the relatively low efficiency of public finance resource allocation.

3.2.3. Shattering traditional sales channels

The development of online sales has put pressure on the survival space of physical stores. There are already many physical stores selling agricultural products in the local area, and a relatively complete system has been established. The development of e-commerce is largely dependent on young people for operation and maintenance. Using the network, this study needs to learn how to use the equipment and handle sales skills. However, older people who run physical stores are not familiar with the use of the Internet, and the prices of online sales are generally lower than those of offline sales. This has caused certain difficulties in the operation of physical stores. Nowadays, most traditional salespeople have made the transition to the role of online live-streaming sales through technology [14]. Moreover, the government provides strong support for the e-commerce industry. However, there is a problem of resource bias in the allocation of resources to traditional sales channels. The unfairness of resource allocation has seriously affected other sales channels.

4. Suggestions

4.1. Building a blockchain-enabled quality assurance ecosystem

A three-tier quality assurance system should be established. Firstly, the government should vigorously promote the transparent construction of agricultural product production, sales, and logistics in the industrial chain and implement the agricultural product traceability project. All information on agricultural products, from planting, processing, and transportation to sales, should be fully uploaded to the information chain for preservation and management. At the agricultural product dispatching link from the origin, anti-counterfeiting traceability codes must be embedded in the packaging of agricultural products. As successfully implemented in Zhejiang's 'Yangtze River Delta Traceability Platform,' consumers can query detailed information such as the growth environment of agricultural products, organic certification certificates, pesticide residue test reports, and logistics transportation status through the anti-counterfeiting traceability codes. Secondly, a multi-level inspection and certification system will be implemented. Government inspection institutions carry out the first level of inspection to ensure that agricultural products meet the provincial quality certification standards and can enter the market for trading. The second level of inspection is conducted by the relevant institutions of the "Guizhou Products Out of the Mountain" project assistance program, granting the products of this project with the specific logo. Products that meet the standards of this project can be promoted and sold by citing the relevant certification. The third level of the inspection involves distributing inspection funds and recruiting a certain number of quality inspectors nationwide irregularly to inspect any agricultural products randomly. The relevant inspection contents will be uploaded to the agricultural product sales platform to ensure the supervision of production quality and to provide consumers with certain references. Finally, a real-time credit assessment and penalty mechanism should be established. E-commerce platforms can conduct 24-hour live broadcasts to enhance consumers' trust. They can also collaborate with market supervision bureaus, logistics, after-sales service, and other institutions to integrate public quality feedback, sales volume, complaints, and other data. Based on this, they can classify different merchants into credit grades. For those merchants with poor assessment grades and who have repeatedly encountered quality issues, policy subsidies can be revoked, fines imposed, and the penalties publicly announced on relevant websites.

4.2. Creating value-added agricultural products through GI protection

The first step in implementing differentiation is to develop geographical indication (GI) protected brands for each region and promote the diversification of product IP. Relevant teams should conduct

industrial diagnosis for each region, explore regional characteristics, and integrate the products of each region with their own characteristics. For instance, Longli County is known as the hometown of Chinese prickly pear, and prickly pear contains abundant vitamin C. Thus, “Longli Prickly Pear - The King of Vitamin C” can be used as an IP. Leishan County’s silver ball tea is a specialty product, and consumers favor it for its unique taste. Moreover, Leishan has abundant natural resources, and it can create “Tea from the Natural Green Treasure Basin-Leishan Silver Ball Tea”. This GI protection strategy follows the successful model of France’s AOC system. Each region can form different IPs based on local characteristics, which, to some extent, reduces the homogeneity of agricultural products. The second step is to promote the diversified development of product forms. Currently, Guizhou Province mainly sells primary agricultural products in the form of fruits. The government can establish an agricultural product research and development center, focusing on researching technologies such as preservation, fermentation, and extraction. Ordinary chili peppers can be processed into chili sauce, pickled chili peppers, and capsaicin. Kiwifruit can be made into dried fruit, beverages, jam, candies, and other products. This not only enriches the types of agricultural products and solves the problem of homogeneity but also increases income. The third step is to adjust the industrial layout by leveraging big data. By applying big data, a comprehensive analysis of the e-commerce sales data of agricultural products across the country is conducted to build a market demand forecasting model. This approach mirrors the ‘Agricultural Brain’ system developed by Alibaba Cloud. By predicting the market demand for different agricultural products, the quantity of agricultural products to be planted in the following year can be reasonably planned. This can reduce the planting area of agricultural products with smaller demand and increase the planting of those with greater demand and high popularity.

4.3. Implementing smart O2O integration for channel synergy

Three key initiatives are proposed to achieve channel integration. Firstly, leveraging Alibaba’s ‘Rural Taobao’ training framework, operation training courses should be conducted to provide a technical foundation for the development of dual channels. E-commerce platforms can offer simplified live-streaming operation platforms for older salespeople and regularly hold live-streaming training courses. These courses cover multiple aspects, such as basic live-streaming operations, sales skills, interaction methods, etc. Through systematic training, courses help older salespeople better adapt to the new model of live-streaming sales and enhance sales performance. Secondly, a coordinated sales model should be established between online and physical stores. Physical stores can not only list the goods in their stores on the Internet for sale but also transform them into a store experience point. Consumers can go to the store to further understand the goods, choose the appropriate ones, and then place orders at the store. Consumers can either have the ordered goods delivered to their homes by the store or pick up the goods at the store. Finally, the relevant institutions will regulate the prices. It can be proposed that the lowest price online should not be lower than 90% of the offline cost price. When the online price is lower than the offline cost price, the government will provide certain subsidies. When the online order volume surges, the offline inventory will be automatically called upon, and using dynamic pricing algorithms similar to Didi’s surge pricing model, the price difference will be compensated. During some promotional festivals that are suitable for goods, the model of keeping the same prices for both online and offline products will be adopted. Similar O2O models have increased sales by 30% in Jiangsu’s agricultural sector.

5. Conclusion

5.1. Key findings

This paper, under the background of the digital economy, takes the influence mechanism of public resource allocation in the southwestern region of China as the core research topic and focuses on the “Guizhou Products Out of the Mountain” project of e-commerce assistance for agriculture in Guizhou Province to explore the impact of the digital economy on regional public resource allocation. The research finds that the digital economy, to a certain extent, breaks geographical restrictions, improves infrastructure construction, promotes the cultivation of e-commerce talents, and promotes the digitalization of services, thereby optimizing the public resource allocation in the southwestern region and improving the efficiency of public resource allocation. However, it also faces challenges such as false marketing, serious product homogeneity, and the impact of traditional sales channels. The article combines different organizational functions and puts forward feasible suggestions on how to strengthen product supervision comprehensively, create brand characteristics, and promote the integrated development of sales channels.

5.2. Research significance

This study makes three key contributions. This paper fills the research gap in the field of digital economy and public resource allocation in the southwestern region of China, providing a theoretical basis for the optimization of regional policies. At the same time, it points out the problems existing in the agricultural product industry, e-commerce industry, and logistics industry in Guizhou Province and proposes solutions for them. This has promoted the improvement of the efficiency of public resource allocation in this region and facilitated the realization of higher-quality economic and social development in the southwestern region. It also provides case references similar to Yunnan’s ‘Digital Village’ initiative and detailed solutions for other regions in China to solve similar development problems.

5.3. Limitations and future study

The article has certain limitations. Firstly, there are geographical and sample limitations. The research locations selected in this study have various geographical factors, economic development conditions, and cultural differences that influence geographical particularities and different regions in China. It is difficult to reflect the overall characteristics of a single case, and this study is only applicable to the southwestern region. It cannot infer the public resource allocation situation in economically developed and other economically underdeveloped regions. Secondly, there are limitations in data sources and their timeliness. The research data in this article mainly comes from government reports and project materials, and there may be selective presentation or positive bias. The article specifically adopts data from a specific year, and due to the lack of long-term tracking data, the dynamic effect of the digital economy is difficult to verify. Future research can divide the factors that influence development in different regions of China, conduct multi-regional case comparisons or cross-regional case studies, and break through the limitations of regions and samples. By using scientific means, establishing a dynamic database, following the FAO’s Agricultural Market Information System model, builds a multi-regional data-sharing platform and enhances the timeliness and diversity of data.

References

- [1] Li, X. X., Wasin, P., & Sun, H. Z. (2025). Digital economy, internet usage, and resident satisfaction. *Finance Research Letters*, 77, Article 106995. <https://doi.org/10.1016/j.frl.2025.106995>

- [2] Dowling, M., & Lucey, B. (2023). ChatGPT for (Finance) research: The Bananarama Conjecture. *Finance Research Letters*, 53, Article 103662. <https://doi.org/10.1016/j.frl.2023.103662>
- [3] Guo, B., Wang, Y., Zhang, H., Liang, C., Feng, Y., & Hu, F. (2023). Impact of the digital economy on high-quality urban economic development: Evidence from Chinese cities. *Economic Modelling*, 120, Article 106194. <https://doi.org/10.1016/j.econmod.2023.106194>
- [4] Zhang, S., Li, G., Yu, R., Chang, Y.H., Yang, Y.F., Zhang, Q.H., Liu, W.N., & Hao, J.M. (2023). Understanding the shortboard of regional sustainable development: fairness and efficiency of rural public resource allocation in China. *Environment, Development and Sustainability*, 26, 16739-16756.
- [5] Guizhou Daily, The new type of e-commerce live-streaming has stimulated new consumption momentum. In the first half of the year, the total online retail sales in the province increased by 64 percent year-on-year, 2024,9,24,2025.3.21, https://www.guizhou.gov.cn/ztzl/jfjshlwzjjzz/dtyw/202409/t20240924_85746769.html
- [6] Gansu Economic Daily, Min County: E-commerce Empowers Local Specialties to “Step Out” from the Mountains to the World, 2025.3.18, 2025.3.21, <https://szb.gansudaily.com.cn/gsjrb/pc/layout/202503/21/col01.html>
- [7] Gao, J., Zeng, Y.W., & Liu, M. (2024). Policy interventions and market innovation in rural China: Empirical evidence from Taobao villages. *Economic Analysis and Policy*, 81(C), 1411-1429.
- [8] Idowu, K., O. (2024). The effects of export-facilitating quality infrastructure on Africa’s exports. *Journal of Trade Science*, 13(1), 65-84. <https://doi.org/10.1108/JTS-04-2024-0024>
- [9] Nachman, B. R., & Pryor, J. T. (2024). Advancing Digital Campus Climate: A Conceptual Model for Bolstering Higher Education Inclusivity. *Journal of Student Affairs Research and Practice*, 61(5), 727-741. <https://doi.org/10.1080/19496591.2023.2233447>
- [10] Zhang, Y. (2024). Exploration On the Construction of Smart Campus All-Optical Network. *Journal of Big Data and Computing*, 2(2), 106-111.
- [11] Gupta, A. (2023). Deceptive advertising, regulation and naive consumers. *International Journal of Industrial Organization*, 91, Article 103026. <https://doi.org/10.1016/j.ijindorg.2023.103026>
- [12] Cao, J. W. (2024). Innovative approaches and Value of Live Streaming for Agricultural Assistance- A Case Study of Douyin platform. *International Journal of Frontiers in Sociology*, 6(6), Article 060610. <https://doi.org/10.25236/IJFS.2024.060610>
- [13] Tao, A.P., Qi, Q., Li, Y., Da, D., Boamah, V., & Tang, D.C. (2022). Game Analysis of the Open-Source Innovation Benefits of Two Enterprises From the Perspective of Product Homogenization and the Enterprise Strength Gap. *Sustainability*, 14(9), Article 5572. <https://doi.org/10.3390/su14095572>
- [14] Chu, H. (2024). Blending traditional sales techniques with livestream commerce: Strategies for personal selling and streamer engagement. *Cogent Business & Management*, 11(1), Article 2417745. <https://doi.org/10.1080/23311975.2024.2417745>