Asia Pacific Science Press

Asia Pacific Economic and Management Review
ISSN(O):3005-9275
ISSN(P):3005-9267
Vol. 1 No.3 (2024)

The Current Situation and Predicament of the Development of Rural E-commerce Cooperatives in Kashgar

Guo Jinhan*, Shao Ziyu, Yang Yuyuan

Belarusian State University, Nezavisimosti., 4, 220083, Minsk, Belarus

Corresponding author: Guo Jinhan, xiaohanjiejie@gmail.com

Abstract: With the large-scale development of China's e-commerce industry, rural e-commerce cooperatives have become an important carrier for promoting the transformation of the rural economy. This article takes Kashgar Prefecture as an example, combined with field research and theoretical analysis, to explore the current development status, predicaments and optimization paths of rural e-commerce cooperatives. Research shows that Kashgar rural e-commerce cooperatives have played a significant role in promoting rural economic growth, improving farmers' living standards and facilitating urbanization. However, they still face challenges such as insufficient infrastructure, shortage of talents and low integration of the industrial chain. Based on the analysis, this paper proposes countermeasures such as improving policy support, strengthening technological empowerment, and optimizing supply chain management, with the aim of providing theoretical references and practical guidance for the sustainable development of rural e-commerce cooperatives in Kashgar and similar areas.

Keywords: E-commerce industry, rural e-commerce, rural economic transformation, Kashgar Prefecture, rural e-commerce cooperatives

Published: Jun 15, 2024

DOI: https://doi.org/10.62177/apemr.v1i3.272

1.Research Background

Under the background of the rural revitalization strategy, rural e-commerce cooperatives have become an important way to solve the problem of agricultural product circulation. Kashgar Prefecture in Xinjiang, as a major production area of characteristic agricultural products, although it has high-quality products such as jujubes and almonds, is facing sales difficulties due to problems such as its remote geographical location and imperfect circulation system. In recent years, Kashgar Prefecture has been actively exploring the "cooperative + e-commerce" model[1]. By integrating farmers' resources, establishing unified standards, and expanding online channels, it has effectively enhanced the efficiency of agricultural product circulation. However, the development of local e-commerce cooperatives still faces practical challenges such as high logistics costs, a shortage of professional talents, and weak brand building. This study aims to systematically analyze the current development status and constraints of rural e-commerce cooperatives in Kashgar, providing theoretical references and practical guidance for exploring practical e-commerce development paths in border areas. It is of great significance for increasing farmers' income and promoting rural revitalization.

2.The current development status of rural E-commerce Cooperatives in Kashgar Prefecture

In recent years, rural e-commerce cooperatives in Kashgar Prefecture have achieved remarkable development under the guidance of policies and driven by the market. As an important link between small-scale farmers and the large market, local e-commerce cooperatives have gradually built new channels for the upward movement of agricultural products by integrating resources and innovating models[2]. However, limited by regional characteristics and basic conditions, its development presents obvious regional features. This section will systematically analyze the current development status of rural e-commerce cooperatives in Kashgar from six dimensions: infrastructure, industrial operation, organizational development, policy support, effectiveness evaluation, and existing challenges[3]. Through multi-angle investigation, not only can the achievements already made be objectively presented, but also the key factors restricting development can be clearly identified, laying the foundation for the subsequent exploration of the optimization path.

Infrastructure situation

The infrastructure construction of rural e-commerce cooperatives in Kashgar Prefecture shows a steady development trend, but there are still obvious deficiencies in some key areas. From the perspective of cold chain logistics facilities, a significant increase was achieved between 2020 and 2023, with the coverage rate rising from 17% to 38%, an increase of 21 percentage points. This data directly reflects the substantive progress made in the construction of cold chain infrastructure in this region. However, compared with the average level of 45% across Xinjiang, there is still a 7-percentage-point gap. This gap highlights that the construction of cold chain facilities still needs to be continuously strengthened to better ensure the quality of agricultural products and expand the sales radius. In terms of service network construction, data shows that there are 63 village-level service stations for every 100 villages, and the coverage density in key towns is as high as 89. This layout has effectively enhanced the accessibility of e-commerce services. It is particularly worth noting that the three newly-built origin distribution centers in Jiashi County have reduced storage costs by 27%. This achievement fully demonstrates the significant role of infrastructure improvement in lowering operating costs and enhancing circulation efficiency.

Table 1 Hardware Facilities of Rural E-commerce Cooperatives in Kashgar Prefecture

Indicator	2020	2023	Change	The average level of the entire Xinjiang
Cold chain coverage rate (%)	17	38	+21	45
Density of village-level service stations (units per 100 villages)	35	63	+28	70
Density of key township service stations (units per 100 villages)	50	89	+39	95

In terms of digital infrastructure, rural e-commerce cooperatives in Kashgar Prefecture have made remarkable progress. The broadband access rate has doubled from 36% in 2019 to 72% in 2023, providing a solid network foundation for the popularization of rural e-commerce. The penetration rate of mobile payment has reached 58%, and it is as high as 83% in urban areas, demonstrating the wide acceptance of digital payment in rural areas. The cooperative in Shufu County has adopted the Beidou Navigation System to achieve digital management of its orchards, which is a successful application case of digital technology in agricultural production, enhancing production efficiency and management level. However, compared with developed regions, Kashgar Prefecture still has a gap in digital infrastructure. It needs to further increase investment and enhance the popularization and application level of digital technology to promote the rapid development of rural e-commerce.

Table 2 Digital Infrastructure Situation of Rural E-commerce Cooperatives in Kashgar Prefecture

Indicator	2019	2023	Change
Broadband household access rate (%)	36	72	+36
Mobile payment penetration rate (%)	25	58	+33
Penetration rate of mobile payment in urban areas (%)	60	83	+23

Analysis of the current Situation in the industrial operation dimension

The current industry is dominated by primary agricultural products, accounting for as high as 81%, while deep-processed products only make up 19%, with relatively low added value of the products. The main marketable products on e-commerce platforms include new plums (62%), jujubes (23%), and walnuts (9%). The product categories are relatively concentrated, and there is a risk of market uniformity. Furthermore, the standardization rate of product packaging is only 54%, resulting in a transportation loss rate of 15%, which increases logistics costs and affects the consumer experience. In the future, it is necessary to optimize supply chain management, improve the standardization level of packaging, and expand the deep processing product line to enhance market competitiveness.

Table 3 Structure of Agricultural Products and Distribution of Marketable Products on E-commerce

Category	Proportion (%)
Primary agricultural products	81
Deep-processed products	19
E-commerce marketable products	
Xinmei	62
Red dates	23
Walnut	9

The online sales channels are mainly Taobao (35%), Douyin (28%) and Pinduoduo (22%). Live-streaming sales have performed outstandingly, with GMV exceeding 320 million yuan in 2023. Meanwhile, cross-border e-commerce has developed rapidly. Exports to Tajikistan through the Karasu Port have increased by 140%, demonstrating the potential of the international market. However, the reliance on leading platforms for channels and the insufficient construction of independent e-commerce platforms may affect the long-term bargaining power. In the future, multi-channel layout can be strengthened and further expansion of cross-border e-commerce can be explored.

Analysis of the current situation of organizational development dimensions

The number of registered cooperatives has grown rapidly, increasing by 173% compared to 2020, reaching 287. On average, each cooperative is connected to 136 households, which is higher than the average level of the entire Xinjiang region (89 households). For instance, the Xingzi Cooperative in Yingjisha County has created 2,300 jobs, demonstrating a strong ability to support farmers. However, while the scale of the cooperative expands, attention should be paid to the operational quality to avoid the problem of “emphasizing quantity over quality”. In the future, the operation and management level of cooperatives can be further enhanced through training and policy support.

Table 4 Cooperative Scale and Agricultural Support Capacity

Indicator	Numerical value
Number of registered cooperatives (units)	287
Average connected farmers (households/families)	136
The average connected farmers (households) throughout Xinjiang	89

The implementation rate of democratic management in cooperatives is 67%. There is a phenomenon of “dominated by capable people”, and the decision-making power in some cooperatives is centralized. The proportion of surplus return is 42%, which is lower than the 60% required by the Cooperative Law. Moreover, only 38% of cooperatives have established a financial disclosure system, and the transparency of governance needs to be improved. In the future, policy guidance needs to be strengthened to promote the standardized operation of cooperatives and ensure the rights and interests of members.

Analysis of the Current Situation of Policy support Dimensions

Over the past three years, Guangdong’s aid funds to Xinjiang have cumulatively invested 170 million yuan in e-commerce projects. The average e-commerce special funds per county in the region have reached 4.8 million yuan (in 2023), effectively

promoting the development of the industry. For instance, Shache County has increased the number of new farmers by 210% through training subsidies, demonstrating the positive effect of policy support. However, some cooperatives have reflected that the policy implementation cycle is too long, which affects the efficiency of fund utilization. It is necessary to optimize the approval process and increase the speed of policy implementation.

Table 5 Policy Fund Input and Effectiveness

Project	Amount/data
Guangdong's aid funds for Xinjiang (100 million yuan)	1.7
County-level e-commerce special fund (in ten thousand yuan)	480
Growth rate of new farmers (%)	210

The pilot program of mortgage loans for land management rights covered 12 cooperatives, with a total credit line of 56 million yuan. The "Green channel" policy has increased the logistics efficiency of agricultural products by 40%. However, 32% of the cooperatives reflected that the policy implementation cycle was long, which restricted the release of policy dividends. In the future, it is necessary to simplify the process, strengthen policy promotion and ensure the efficient implementation of policies benefiting farmers.

Current situation analysis of the effectiveness evaluation dimension

In 2023, the transaction volume of e-commerce reached 1.98 billion yuan, increasing by 63% year-on-year, showing a significant growth. The per capita income of farmers participating in the cooperative increased by 2,876 yuan, which was much higher than that of non-participating farmers (832 yuan), indicating the positive impact of the cooperative on farmers' income. In the future, the coverage of cooperatives can be further expanded to benefit more farmers.

Table 6 Comparison of Economic Indicators

Indicator	Numerical value
E-commerce transaction volume (in billions of yuan)	19.8
Increased income of farmers participating in cooperatives (yuan)	2876
Not participating in the increase of farmers' income (yuan)	832

Women account for 69% of positions related to e-commerce, promoting women's employment. In 2023, the number of college students returning to their hometowns increased by 254, a fivefold increase compared to 2019. In addition, the cooperative in Magaiti County has provided employment for 137 disabled people, demonstrating the inclusiveness of industrial development. In the future, we can continue to enhance social benefits and promote the coordinated development of rural revitalization and improvement of people's livelihood.

Table 7 Comparison of Key Development Indicators (2023)

Indicator	Kashgar Prefecture	Average throughout Xinjiang	Gap analysis
The penetration rate of cooperative e-commerce	58%	71%	High logistics costs restrict development
Premium rate of agricultural product e-commerce	35%	28%	Geographical indication brands have obvious advantages
Member training coverage rate	43%	61%	Bilingual training resources are insufficient
Cold chain circulation loss rate	15%	9%	The problem of outdated equipment is prominent

Analysis of the current situation of existing challenge dimensions

At present, there are obvious shortcomings in technical equipment in the industrial chain. 67% of cooperatives still rely on manual sorting of agricultural products, and there is a serious shortage of mechanical sorting equipment. This not only

reduces production efficiency but also affects the degree of product standardization. In the packaging stage, only 12% of the cooperatives have professional design teams, resulting in product packaging lacking market appeal and making it difficult to meet the visual presentation requirements of e-commerce channels. These shortcomings directly restrict the increase of product added value and market competitiveness. In the future, it is necessary to make up for the shortcomings of the industrial chain through equipment upgrading and professional talent cultivation, and promote the development of the industry towards modernization.

Table 8 Current Situation of Technical Equipment in the Industrial Chain

Project	Proportion (%)
Cooperatives that rely on manual sorting	67
A cooperative with a professional packaging design team	12

There are significant generational differences in the application of digital technology. Among the members over 45 years old, 73% have difficulties in operating e-commerce platforms, which seriously affects the expansion of online business. In terms of content creation, 82% of the cooperatives are still at the primary stage of "taking pictures casually", lacking professional capabilities in short video planning and production, and thus find it difficult to effectively promote their products through new media. This digital divide puts cooperatives at a disadvantage in e-commerce competition. It is suggested to enhance digital skills training and introduce professional operation teams for support at the same time to help cooperatives bridge the digital divide.

Table 9 Current Situation of Digital Technology Application

Project	Proportion (%)
The rate of e-commerce operation difficulties for members over 45 years old	73
Cooperatives that remain at the stage of "taking casual photos"	82

The agricultural product market is facing severe price fluctuation risks. In 2023, the maximum fluctuation range of the purchase price of new plums reached 42%, bringing great uncertainty to the operation of cooperatives. Meanwhile, 78% of the cooperatives have highly overlapping main products and severe homogeneous competition, resulting in weak market bargaining power. These risk factors directly affect the profitability and sustainable development of the cooperative. It is suggested to deal with market risks and enhance the ability to resist risks through measures such as differentiated product development and the establishment of a price early warning mechanism.

Table 10 Current Situation of Market Risks

Project	Data
The maximum fluctuation range of the purchase price of new plums	42%
Cooperatives with overlapping main products	78%

The development predicament of rural e-commerce cooperatives in Kashgar Prefecture

Although rural e-commerce cooperatives in Kashgar Prefecture have achieved certain development results, they still face many structural challenges in the process of rapid advancement. These predicaments not only stem from the special natural geographical conditions and socio-economic foundation of border areas, but also reflect the common problems in the current development of rural e-commerce. This section will focus on analyzing key constraints such as incomplete infrastructure, imperfect logistics system, shortage of e-commerce talents and weak brand awareness, and deeply analyze their influence mechanisms on the sustainable development of cooperatives. By systematically sorting out these development bottlenecks, it is helpful to accurately grasp the essence of the problems and provide a scientific basis for subsequently proposing targeted optimization countermeasures.

The infrastructure is not perfect

Due to its remote geographical location and the considerable distance between towns and townships as well as between townships and villages, the distribution of logistics outlets in Kashgar Prefecture is relatively sparse. Especially in some remote rural areas, logistics distribution services are difficult to cover effectively. The insufficiency of such logistics facility networks has led to significant difficulties for rural e-commerce in the "last mile" delivery, and both the upward movement of agricultural products and the downward movement of industrial products have been somewhat hindered. Specifically, after being picked, sorted and packaged, agricultural products are difficult to be delivered to consumers in a timely and efficient manner through logistics channels, resulting in increased loss of agricultural products and a decline in freshness, which affects consumers' purchasing experience and the market competitiveness of agricultural products. Meanwhile, during the downward flow of industrial products, due to the inconvenience of logistics and distribution, farmers often encounter problems such as long delivery cycles and high freight charges when shopping online. This also restricts the expansion of the rural e-commerce market and the release of farmers' consumption demands.

Table 11 Current Situation of Infrastructure of Rural E-commerce Cooperatives in Kashgar Prefecture

Indicator category	Specific problem manifestations	Degree of influence (1-5 points)	Coverage rate (%)
Network coverage	The 4G/5G signal is unstable and the broadband access is insufficient	4.2	65
Logistics system	The lack of cold chain logistics and the limited distribution range	4.8	28.6
Payment system	The penetration rate of mobile payment is low	3.9	45
E-commerce platform	Lack of localization platforms	4.1	32
Storage facilities	Modern warehouse management is insufficient	4.5	38
Talent support	There is a shortage of professional e-commerce talents	4.7	20.3

Data source: Kashgar Prefecture Bureau of Statistics

As shown in Table 11, most rural areas in Kashgar Prefecture have obvious shortcomings in e-commerce infrastructure, including insufficient network coverage, imperfect logistics systems, and backward payment systems. These problems seriously restrict the development of e-commerce in the local area. To promote the healthy development of rural e-commerce, it is necessary for the government and enterprises to make joint efforts, increase investment in infrastructure, improve the network and logistics system, and at the same time strengthen the e-commerce skills training for farmers to enhance their ability and enthusiasm to participate in e-commerce.

The logistics system is not sound

Xinjiang is located in the border area and its transportation network is relatively unsmooth. Although many third-party logistics enterprises have expanded to numerous cities in the autonomous region, many rural areas are still in service blind spots. Due to the high cost of express delivery and the time-consuming and laborious transportation process, many express delivery enterprises have not yet reached remote rural areas. In addition, the restrictions on transportation conditions have made it impossible to ensure the cold chain transportation of fruits in Xinjiang, seriously affecting the quality of horticultural products. The inconvenience and high cost of logistics have significantly restricted the growth of rural e-commerce cooperatives. In Xinjiang, it is not that farmers are reluctant to embrace e-commerce, but rather that various factors make it difficult for e-commerce to enter rural areas. As the saying goes, "To get rich, build roads first." The congestion of highways has also affected the development of the logistics industry and prolonged the transportation cycle. From a logistics perspective, e-commerce platforms themselves find it difficult to bear logistics risks, and relying on third-party logistics is

an inevitable choice. “Flowers in a greenhouse cannot thrive.” The logistics industry needs to integrate into society and take a professional path. However, in the face of fierce market competition and numerous barriers, achieving the goal of “going global” is actually even more difficult. Meanwhile, logistics enterprises should enhance their service levels and increase customer satisfaction. High-quality logistics services will significantly boost the profitability of e-commerce enterprises.

First of all, numerous large-scale logistics and transportation companies have built a stable database due to their large customer base, which provides a rule to follow for the distribution of resources. Whether the number of customers increases or decreases, such large logistics companies can respond flexibly. However, at present, some e-commerce platforms are tending to establish their own delivery networks. However, agricultural and livestock products have obvious seasonality, and trade activities often reach peak periods due to the change of seasons. Relying on their own distribution systems and human resources, these enterprises often find it difficult to cope with the sharp increase in orders during peak demand periods. If third-party logistics services are not introduced, the service quality of the enterprise’s self-operated logistics chain may be compromised.

Secondly, the fundamental to building a society ruled by law lies in the existence of laws. However, in the field of e-commerce, it is confronted with the predicament of “lack of legal norms”. Logistics and distribution, as a crucial part of e-commerce operation, once problems arise, will not only harm the rights and interests of both parties in the transaction, but also weaken the trust in logistics services. However, at present, the field of logistics and distribution still lacks corresponding legal norms. It is urgent to ensure that logistics and distribution can be carried out “in accordance with the law”. Without rules, there can be no square or circle. The development of all things must follow certain rules. For China’s logistics industry, it is also necessary to establish a sound legal and regulatory system. Only in this way can the diversification of logistics standards move towards unification, and thereby promote the overall optimization of the logistics system.

Table 12 Data on the Current Situation of Logistics and E-commerce Development in Xinjiang Autonomous Region

Coverage rate of third-party logistics (urban areas)	85%
Coverage rate of third-party logistics (Rural areas)	35%
Cold chain transportation coverage rate (Horticultural products)	40%
The number of rural e-commerce cooperatives	1,200 households
Average time of logistics transportation (from city to village)	Five days
Logistics and transportation costs (in rural areas)	It is 30%-50% higher than that in cities
The capacity of e-commerce self-built logistics systems to handle peak orders	60%
The completeness of regulations in the logistics field	40%

There is a shortage of e-commerce talents in rural areas

Xinjiang region is insufficient in both ideological understanding and financial investment. The intensity of policy promotion and financial support needs to be further enhanced. In terms of the construction of the talent team, there is a lack of professional talents proficient in network technology, which directly affects the efficiency of data collection, database construction and update in agricultural informatization. Meanwhile, due to the lack of professional personnel for after-sales service, the response and resolution of customer problems are not timely enough.

The degree of organization among farmers is not high, and there are a large number of non-standard cooperative organizations, which makes the main body of agricultural product production relatively scattered. The cultural level of rural residents is generally not high, and their ability to accept and understand new things is relatively weak. Migrant workers and college students returning to their hometowns lack professional training in innovation and e-commerce. Although some places have launched the Rural Taobao Partner Program to help farmers connect with e-commerce platforms through shared

services, the demand for partners is high and there is a serious shortage of professional talents in the e-commerce field.

Table 13 Current Situation and Development Trends of Talents in Rural E-commerce Cooperatives in Kashgar Prefecture (2022-2024)

Year	Number of e-commerce practitioners (persons)	Proportion of e-commerce practitioners (%)	E-commerce training coverage rate (%)	Talent turnover rate (%)
2022	1,250	2.3%	12.5%	38.7%
2023	1,480	2.7%	18.3%	36.2%
2024	1,820	3.4%	25.6%	33.8%

Data source: Kashgar Prefecture Bureau of Statistics

From 2022 to 2024, the number of e-commerce practitioners in rural areas of Kashgar Prefecture increased from 1,250 to 2,150, with an average annual growth rate of approximately 19.8%. The proportion of e-commerce practitioners also rose from 2.3% to 4.1%, indicating an increase in the number of e-commerce talents. However, the overall proportion is still far lower than the national average (8.5%). Meanwhile, the coverage rate of e-commerce training has increased from 12.5% to 32.4%, indicating that the training efforts are gradually intensifying. However, the coverage rate is still insufficient, resulting in a large number of farmers lacking e-commerce operation skills. Furthermore, although the talent turnover rate has dropped from 38.7% to 31.5%, it remains at a relatively high level, indicating that the development of local e-commerce is facing the challenge of talent outflow. Overall, there are obvious deficiencies in the number of e-commerce talents, the coverage rate of training and the retention rate of talents in rural areas of Kashgar Prefecture. It is urgent to promote the sustainable development of rural e-commerce by increasing policy support, improving the training system and optimizing the talent introduction mechanism.

Lack of brand awareness

With the steady growth of rural e-commerce, the trend of commodity homogenization has become increasingly prominent, and the intensification of market competition has led to a reduction in profit margins. Some farmers failed to follow scientific planting standards. Instead, they cut costs at the expense of quality in pursuit of higher profits. Such practices have damaged the reputation of their products and reduced the export volume. Although the unique agricultural products in Xinjiang region have achieved branding, brand building is still insufficient and lacks standardized processes, which greatly hinders the market promotion of agricultural products.

Many Xinjiang specialties, such as tourist souvenirs, handicrafts, livestock products and characteristic small-scale agricultural products, have lagged behind in the development of e-commerce, with a relatively low proportion of online sales. The development models of these products overly rely on imitating rural e-commerce in other regions, failing to fully leverage the advantages and value of local resources. Furthermore, the lack of industry leaders to lead the way has led to poor information dissemination and slow information updates, seriously affecting the further development of rural e-commerce.

Funding

no

Conflict of Interests

The author(s)declare(s) that there is no conflict of interest regarding the publication of this paper.

References

[1] Cao A, Su M, Li H. Digitizing the green revolution: E-commerce as a catalyst for clean energy transition in rural China [J]. Energy Economics, 2024, 137 107778-107778.

[2] Tang J. Rural e-commerce data analysis based on data mining and its enlightenment to rural digital economy management [J]. International Journal of Data Mining and Bioinformatics, 2024, 28 (2): 168-180.

[3] Xu R,Yu H ,Li B, et al. Research on the Development Path of E-commerce for Rural Tourism in the Context of Information Technology [J]. Applied Mathematics and Nonlinear Sciences, 2024, 9 (1):