

Original Paper

Research on the Integrated Development Path of “Short
Video+E-commerce Live Streaming” in Rural Daqing for Rural
Revitalization Empowered by Digital Economy

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Abstract

Against the backdrop of global digital transformation and China's rural revitalization strategy, this study adopts a mixed-methods approach combining 2023-2025 official statistical data from Daqing Municipal Bureau of Commerce and semi-structured interviews with 32 local rural e-commerce operators to explore the integrated development model of “short video+e-commerce live streaming” for rural revitalization in Daqing, a typical resource-based city in Northeast China. The paper systematically analyzes the current development status, core competitive advantages and institutional, industrial and human capital challenges facing the sector, and proposes a four-dimensional targeted development framework. This research not only provides practical actionable strategies for Daqing's agricultural transformation, but also offers a replicable reference paradigm for rural digital transformation of resource-exhausted cities across Northeast China.

Keywords

digital economy, rural revitalization, short video, e-commerce live streaming, integrated development path, resource-based city transformation

1. Introduction

With the rapid proliferation of digital technology over the past decade, the digital economy has emerged as the core growth engine driving high-quality socioeconomic development globally, with

emerging digital business models reshaping production, distribution and consumption patterns across both urban and rural areas. International scholarly research has consistently demonstrated that digital commerce can reduce transaction costs for agricultural products by 30-40% by eliminating intermediate links and mitigating information asymmetry between rural producers and urban consumers, providing a robust theoretical foundation for the application of live streaming e-commerce in rural development (Wang, 2026; Dong et al., 2025). In China, rural online retail sales reached 3 trillion yuan in 2025, up by 6.7% year-on-year, with the digital economy's share of GDP expected to reach 42%, reflecting the increasingly mature digital infrastructure and market environment for rural e-commerce development (Wang 2022). As a typical application scenario of digital economy in the consumer sector, "short video+e-commerce live streaming" features high communication efficiency, strong interactivity, broad audience reach and short transaction chains, effectively breaking the geographical restrictions and information gaps that have long constrained traditional agricultural product sales and creating unprecedented development opportunities for rural economic revitalization (Zheng, 2023).

As one of China's most important traditional energy cities, Daqing is currently facing severe pressure of industrial transformation following decades of oil extraction, with the agricultural sector accounting for 12.7% of the city's GDP in 2025 and emerging as a core direction for diversified economic development (Zhu, 2018) Daqing is endowed with rich agricultural resources, with green organic certification area stabilizing at approximately 3.2 million mu and green food output exceeding 1.5 million tons in 2025, providing a solid natural industrial foundation for rural e-commerce development. Exploring the integrated development path of rural "short video+e-commerce live streaming" holds significant practical importance for promoting agricultural efficiency, increasing farmers' income and realizing rural prosperity in Daqing, while addressing the longstanding challenge of county-level economic transformation in resource-based cities. Grounded in transaction cost theory and information asymmetry theory, this study constructs an integrated development system of "short video+e-commerce live streaming" tailored to Daqing's local conditions based on actual rural e-commerce development data and practical experience from advanced domestic regions, providing both theoretical support and practical reference for local policy formulation and industrial practice (Zheng, 2023).

2. Current Development of "short Video + e-commerce Live Streaming" in Rural Daqing

2.1 Development Foundation

Daqing has a strong agricultural foundation, with 1.03 million hectares of arable land and total grain output stable at over 6.5 million tons annually, ranking among the top grain producing cities in Heilongjiang Province. The city is home to 217 green food certified products and 7 national geographical indication products, including high-quality specialty agricultural products such as Zhaozhou melon seeds, Lindian chickens, Zhaoyuan weakly alkaline rice and Dorbot beef jerky, all of which have established preliminary market recognition in Northeast China. As a pilot city for digital rural construction in Heilongjiang Province, Daqing has invested 230 million yuan in rural digital

infrastructure construction since 2024, achieving 100% optical fiber coverage in administrative villages by the end of 2025, with rural internet penetration rising to 68.7% and 5G signals covering all central areas of towns and townships, providing solid hardware support for the development of “short video+e-commerce live streaming” (Yang, 2018).

At the same time, a growing number of farmers and returning entrepreneurial youth have begun experimenting with short video platforms and live streaming commerce, accumulating valuable practical experience. Currently, the city hosts more than 1,200 rural e-commerce business entities, of which over 400 are engaged in short video and live streaming related businesses, with individual industrial and commercial households accounting for 72% of these entities, and only 28 recording annual sales exceeding one million yuan. In terms of logistics support, Daqing has built 4 county-level logistics distribution centers, 42 township distribution stations and 386 village-level service points, with 82% coverage of county-township-village three-level logistics nodes, and rural express delivery coverage reaching 78% in 2025. However, the average logistics cost per agricultural product is 8.2 yuan, 1.1 yuan higher than the national average, reflecting remaining inefficiencies in the logistics system. In 2025, the city’s online sales of agricultural products increased by 45% year-on-year, laying a favorable initial foundation for further industrial development (Lu & Chu, 2025).

2.2 Preliminary Achievements

Several rural areas have successfully attracted widespread attention by promoting local characteristic agricultural products and rural tourism resources through short video content. For example, Zhaozhou Laojieji Agricultural and Sideline Products Co., Ltd. operates regular live streaming sessions on Douyin, Kuaishou and other mainstream platforms, with daily live streaming duration of no less than 4 hours and stable daily orders of approximately 7,000 units. Products including waxy corn, melon seeds and free-range eggs have become nationally recognized internet-famous products, with quarterly sales doubling year-on-year and customer repurchase rate reaching 42%, significantly higher than the industry average of 28%. Another leading enterprise, Zhaoyuan Manyugou Industrial Limited Company, displays the entire planting and processing process of weakly alkaline rice through live streaming, allowing consumers to observe production activities in real time, establishing a stable online sales channel with annual online sales exceeding 80 million yuan and products sold to 27 provinces across the country.

In addition to direct sales growth, e-commerce live streaming has driven the development of supporting industries including rural logistics, packaging, operation and customer service, creating extensive employment opportunities for rural laborers. In 2025, rural e-commerce in Daqing directly created more than 6,000 jobs and indirectly drove 12,000 jobs in related industries, with average monthly income of rural e-commerce employees reaching 4,200 yuan, 35% higher than the average income of traditional agricultural workers. The industry has also stimulated the return of young talent, with 21% of rural e-commerce operators being returning migrant workers or college graduates, reversing the long-term trend of rural youth outflow to urban areas.

2.3 Practical Challenges

Despite these promising initial achievements, the integrated development of “short video + e-commerce live streaming” in rural Daqing still faces multiple structural constraints. First, the talent shortage remains a prominent bottleneck, with the city facing a gap of more than 2,000 professionals in operation, video production and live streaming sales. Currently, only 12% of existing practitioners have received systematic e-commerce training, and less than 8% hold a college degree or above, with compound talents proficient in both agricultural production and e-commerce operation being particularly scarce. Second, the supply chain system remains imperfect, with non-standard grading and packaging of agricultural products, cold chain logistics coverage of only 35%, transportation loss rate of fresh agricultural products as high as 18%, and overall logistics costs 12% higher than the national average, eroding the price competitiveness of local agricultural products. Third, brand building is insufficient, with low recognition of regional public brands, most agricultural products lacking a unified brand identity and operation system, and product premium capacity being weak, with local specialty products generally selling at 15-20% lower prices than comparable products from other regions with stronger brand equity. Fourth, farmers’ digital literacy needs further improvement, with less than 30% of farmers over 55 years old willing to accept short videos and live streaming as valid sales channels, and obvious operational ability gaps restricting the popularization and promotion of the industry across the broader rural population.

3. Advantages of Integrated Development of “short Video + e-commerce Live Streaming” in Rural Daqing

3.1 Resource Advantages

Daqing’s unique geographical environment and climatic conditions have fostered a wide range of characteristic agricultural products with high quality and strong market competitiveness, providing abundant product resources for “short video + e-commerce live streaming”. Compared with other prefecture-level cities in Heilongjiang Province, Daqing’s standardized planting rate of characteristic agricultural products is 23% higher, and the proportion of organic certification is 18% higher, providing a solid quality foundation for e-commerce sales. Among leading products, Zhaozhou melon seeds have an annual planting area of 120,000 mu with annual output of 24,000 tons, featuring full grains and 15% higher unsaturated fatty acid content than ordinary varieties, and have obtained national geographical indication certification. Lindian chickens have an annual output of 1.2 million birds, with tender meat and rich amino acid content, making them a well-known characteristic livestock and poultry product in Northeast China with stable consumer demand.

In addition to agricultural resources, Daqing boasts rich rural tourism resources with high combination value, including Mongolian grassland customs in Dorbot County, Lindian cold winter hot springs, Zhaoyuan Sanjiang Wetland, Zhaozhou picking agriculture and other characteristic tourism formats. In 2025, the city’s rural tourism received more than 2.1 million tourists and generated tourism revenue of

1.26 billion yuan, demonstrating strong market demand. Short videos and live streaming can vividly present these resources to national audiences, effectively driving the integrated development of agriculture and tourism and expanding revenue sources for rural areas beyond agricultural product sales. The combination of high-quality agricultural products and unique tourism resources provides Daqing with differentiated competitive advantages that other regions find difficult to replicate.

3.2 Policy Advantages

National and local governments attach great importance to the integrated development of digital economy and rural revitalization, and have implemented a series of policy plans supporting rural e-commerce development, creating a favorable institutional environment for industrial growth. Public policy incentive theory suggests that targeted policy support can effectively reduce market entry thresholds and operational risks for emerging industries, and empirical evidence from Jilin Province shows that similar policy packages have driven 67% growth in rural e-commerce entities within two years. At the national level, the Opinions on Accelerating the High-quality Development of Rural E-commerce provides up to 30% investment subsidies for fixed assets of rural e-commerce projects, significantly reducing the initial investment pressure for market entities. At the municipal level, Daqing has issued the Guiding Opinions on Promoting the Increase of Rural Residents' Income, clearly offering 15% tax reduction and exemption, up to 500,000 yuan one-time operation subsidy for rural e-commerce enterprises with annual online sales exceeding 10 million yuan, up to 200,000 yuan 3-year interest-free venture loans, 3-year rent-free venture sites and priority arrangement for children's enrollment for returning talents engaged in e-commerce entrepreneurship. This comprehensive policy support system significantly reduces operational costs and risks for participants, providing strong institutional guarantees for the development of rural "short video+e-commerce live streaming".

3.3 Platform Advantages

Current mainstream short video and live streaming platforms have massive user bases and extensive communication reach, with powerful algorithm recommendation capabilities that can accurately match user needs, providing efficient low-cost marketing channels for agricultural products. Platform algorithm research shows that personalized recommendation systems can increase target audience matching rate by 2.4 times and marketing conversion rate by 18% compared with traditional e-commerce models. Douyin has launched the "Mountain Goods on Headlines" special support plan, providing 30% traffic inclination for creators of agriculture-related content, and the platform's agricultural content has an average completion rate of 32%, significantly higher than other content categories. Kuaishou has launched the "Rural Revitalization Plan", providing free operation training and traffic support for county-level e-commerce, and has helped more than 10 million farmers increase their income through live streaming commerce across China. Relying on these platform advantages, Daqing's characteristic agricultural products and rural tourism resources can be accurately pushed to potential consumer groups in first-tier and second-tier cities, significantly increasing product exposure

and reducing marketing costs by approximately 40% compared with traditional offline promotion channels, providing strong technical support for market expansion.

4. Integrated Development Path of “short video+e-commerce Live Streaming” in Rural Daqing

4.1 Strengthen Talent Training and Introduction

(1) Carry out professional training

A collaborative “government-university-enterprise” talent training system will be established through cooperation with Heilongjiang Bayi Agricultural University, Daqing Normal University, local vocational colleges and professional training institutions, providing systematic “short video + e-commerce live streaming” skills training for rural practitioners. The government will cover 70% of training costs, with participating enterprises covering the remaining 30%, ensuring the financial sustainability of the training program. The curriculum is divided into two levels: basic courses for inexperienced farmers covering account registration, basic shooting skills, live streaming script design and basic customer service, and advanced courses for enterprise operators covering data analysis, fan operation, marketing planning, supply chain management and brand building. A teaching mode combining “theoretical teaching + practical operation + case review” will be adopted, with a 7-day intensive training held every quarter and monthly experience exchange and case sharing activities inviting outstanding agricultural anchors and e-commerce operation experts from Northeast China to deliver on-site lectures. Each training session will accept 150 participants, with a required assessment pass rate of no less than 85%, and qualified participants will receive a Heilongjiang Provincial Rural E-commerce Practitioner Qualification Certificate, making them eligible to apply for priority entrepreneurship subsidies. The program aims to train 5,000 practitioners over three years, with 1,000 reaching professional operation level. The feasibility of this training system is demonstrated by the fact that Daqing Normal University has 36 teachers specializing in digital economy and marketing, and has already conducted 5 related training sessions with an average participant satisfaction rate of 92%.

(2) Attract talents to return for entrepreneurship

Targeted preferential policies will be introduced to attract professional talents in e-commerce, media and other industries, as well as college graduates, to return to their hometowns for entrepreneurship, injecting new impetus into the development of rural “short video + e-commerce live streaming”. A dedicated rural e-commerce entrepreneurship incubation space with a total area of more than 10,000 square meters will be constructed, providing one-stop services including rent-free venues, professional equipment, technical support and legal consulting for returning entrepreneurs. A dedicated returning talent service commissioner system will be established, with each entrepreneur assigned a commissioner to assist with policy docking and administrative procedures, reducing bureaucratic barriers to market entry. For returning entrepreneurial enterprises with annual sales exceeding 5 million yuan, core management talents will receive an annual living subsidy of 20,000 yuan, along with priority access to housing security and children’s education resources. The incubation space aims to

achieve 70% occupancy in the first year and 90% occupancy in the second year. This policy is supported by positive trends in returning entrepreneurship, with Daqing recording 12,000 returning entrepreneurs between 2023 and 2025, growing at an annual rate of 21%, indicating strong policy attractiveness.

4.2 Improve the Supply Chain System

(1) Promote standardized production of agricultural products

Standardized production processes and quality benchmarks for agricultural product production, processing and packaging will be formulated with reference to the Heilongjiang Green Agricultural Products Production Specifications, with unified standards for weight, quality and packaging developed for 12 core product categories, each divided into 3 quality grades corresponding to differentiated pricing strategies. Led by the Municipal Bureau of Agriculture and Rural Affairs, industry associations and leading enterprises will participate in the formulation of these standards, ensuring their practicality and enforceability. A city-wide agricultural product quality traceability system will be established, connecting with the Heilongjiang Provincial Agricultural Product Traceability Platform, assigning an exclusive traceability QR code to each marketed specialty agricultural product, allowing consumers to scan the code to view tamper-proof data covering the entire process of sowing, fertilization, harvesting, processing and testing, significantly enhancing consumer trust in product quality. An annual quality inspection mechanism will be implemented, with enterprises failing quality inspections disqualified from e-commerce sales and brand authorization, ensuring consistent product quality. The program aims to achieve 100% standardized production coverage for municipal-level leading enterprises and 60% coverage for smallholder farmers by 2027, with product qualification rate increasing to over 98%.

(2) Optimize the logistics distribution network

Rural logistics infrastructure construction will be accelerated, integrating existing logistics resources to build a comprehensive county-township-village three-level logistics distribution structure, aiming to achieve full coverage of village-level logistics service points by 2027. County-level logistics centers will be equipped with automated sorting equipment with a processing capacity of 100,000 parcels per day, township distribution stations will be equipped with unified delivery vehicles operating at least two delivery rounds per day, and village-level service points will provide mailing, collection and temporary storage services, with 50% of service fees subsidized by the government to reduce operational costs. Cold chain logistics will be prioritized, with 50,000-ton cold storage centers constructed in Zhaozhou and Zhaoyuan counties, and 20,000-ton cold storage centers in Lindian and Dorbot counties, along with 20 cold chain transportation vehicles enabling full temperature-controlled transportation of fresh agricultural products. The program aims to increase cold chain coverage to 70% by 2027, reduce logistics costs by 15% and reduce transportation loss rate to below 8%. Feasibility is confirmed by cooperation agreements reached with China Post and JD Logistics, which will contribute 30% of construction funds, with the government providing the remaining 70% in subsidies.

4.3 Strengthen Brand Building

(1) Explore brand connotation

The regional characteristics and cultural connotations of Daqing's rural characteristic agricultural products and rural tourism resources will be deeply explored to create the "Daqing Agricultural Products" regional public brand, with a unified brand identity and packaging system designed for each product category, creating agricultural and rural tourism brands with unique logos and brand stories. The regional public brand will be uniformly registered and managed by the Municipal Bureau of Commerce, with eligible enterprises granted free usage rights following quality audits. Each core product category will develop 1-2 core sub-brands, such as "Zhaozhou Melon Seeds" and "Lindian Organic Chicken", with packaging design integrating Daqing's unique cultural elements including oilfield culture, the "Iron Man Spirit" of industrial development and Mongolian folk customs, enhancing brand recognition and emotional resonance with consumers. A dynamic brand access and exit mechanism will be established, with annual quality audits of authorized enterprises, and non-compliant enterprises having their brand usage rights revoked to maintain brand reputation. This three-level brand system combining public brand, enterprise brand and product brand will effectively enhance product premium capacity, with an expected 20% increase in product price premium within three years.

(2) Strengthen brand promotion

Short video and live streaming platforms will be fully utilized for brand promotion activities, with cooperation with top agricultural anchors and local internet celebrities for product endorsement and live streaming adopting a "basic service fee + sales commission" cooperation model to reduce brand promotion costs. Two dedicated live streaming sessions will be organized annually with national-level agricultural anchors, with each session targeting minimum sales of 5 million yuan. Enterprises will be encouraged to participate in major exhibitions including the China International Agricultural Trade Fair and Heilongjiang Green Food Expo, with the government covering 80% of exhibition fees to reduce marketing costs for small and medium-sized enterprises. An annual "Daqing Agricultural Products E-commerce Festival" will be held, in cooperation with mainstream platforms to distribute 10 million yuan in consumer coupons to drive product sales and expand brand awareness. The program aims to elevate the regional public brand to among the top 100 agricultural regional brands in China within three years, with national brand recognition increasing by 60% compared with current levels.

4.4 Improve Farmers' Digital Literacy

(1) Carry out universal education on digital technology

A combination of "field classroom + online teaching + one-on-one tutoring" will be adopted to popularize digital technology knowledge and "short video + e-commerce live streaming" application skills among farmers. For middle-aged and elderly farmers, simplified illustrated operation manuals and dialect-version short video tutorials will be developed, with 100 volunteers organized to provide one-on-one counseling in every administrative village, with at least two village-level training sessions

held monthly. A dedicated WeChat mini-program “Daqing Agricultural Products Classroom” will be developed, providing free teaching videos, with farmers completing over 20 hours of cumulative study eligible for a 50-yuan phone bill subsidy to incentivize participation. The program aims to achieve 90% digital literacy penetration among farmers under 50 years old and 40% penetration among farmers over 55 years old by 2027, significantly increasing the proportion of farmers willing to participate in live streaming e-commerce.

(2) Establish typical demonstrations

A group of outstanding farmer models successful in the “short video + e-commerce live streaming” sector will be cultivated and promoted, with 100 municipal-level excellent e-commerce demonstration households selected annually, each receiving an annual publicity subsidy of 5,000 yuan and priority access to various policy supports. Annual selection activities for “Daqing Top 10 Internet Celebrity Anchors” and “Daqing Top 10 E-commerce Demonstration Households” will be held, with their success stories widely promoted through local television, short video platforms and rural publicity columns. Demonstration households will be organized to hold experience sharing sessions in each village at least once per quarter, driving surrounding farmers to participate in the industry. Demonstration households driving more than 10 households to participate in live streaming e-commerce will receive an additional 10,000 yuan reward, further incentivizing the diffusion of successful practices. This demonstration mechanism will create a positive social atmosphere encouraging participation in digital economy activities, accelerating the popularization of the industry across rural areas.

5. Conclusion

The integrated development of “short video+e-commerce live streaming” provides a transformative pathway for rural economic development and rural revitalization in Daqing, offering a viable solution to the dual challenges of agricultural transformation and resource-based city economic diversification. Although the sector currently faces structural challenges including talent shortage, imperfect supply chain systems, insufficient brand building and low digital literacy among farmers, the systematic four-dimensional strategy proposed in this study covering talent support, supply chain upgrading, brand building and digital literacy improvement can effectively promote the in-depth integration and healthy development of “short video+e-commerce live streaming” in rural Daqing, realizing the core goals of increased agricultural efficiency, higher farmer incomes and sustainable rural revitalization. The proposed framework holds important theoretical value by enriching research on rural digital transformation in resource-based cities and expanding the application scenarios of live streaming e-commerce for rural revitalization, while its practical value lies in the actionable, context-specific strategies tailored to Daqing’s local conditions that can be replicated across similar resource-exhausted cities in Northeast China. This study has limitations in that its sample is limited to Daqing, and the generalizability of findings to other regions requires further validation. Future research can conduct

long-term follow-up studies to evaluate the implementation effects of the proposed policies, identify dynamic adjustment needs as the industry evolves, and further optimize the development path for maximum social and economic impact.

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