

Research on the E-commerce Model of IP Trendy Toys Empowering GI Agricultural Products for Rural Revitalization

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Abstract. Under the impetus of the "Digital Commerce Revitalizes Agriculture" policy and the deepening implementation of China's rural revitalization strategy, Geographical Indication (GI) agricultural products have established a solid industrial foundation—by 2025, the number of registered GI products nationwide had exceeded 3,500. However, this sector still faces numerous challenges: low product value-added, outdated brand image, fragmented and short-term agricultural support models, and declining consumer trust in agricultural product quality. This paper focuses on the integration pathways between intellectual property-driven trend toys and e-commerce for GI agricultural products, providing certain insights for research in the field of cross-border empowerment support for cultural creativity and sustainable agriculture. Through systematic literature review and multiple case analyses, this paper establishes a four-dimensional core framework comprising "intellectual property-driven trend toy innovation + GI agricultural products + digital traceability + ESG-driven agricultural support", and its feasibility was validated across five dimensions: theoretical foundation, market competition, operational logic, marketing alignment, and profit sustainability. The study found that this model, which relies on asset-light operations, order-driven production, and a transparent traceability mechanism, effectively aligns closely with Generation Z's consumption preferences and the national rural revitalization policy. This measure can increase the product's added value by 30%–50%, and reduce waste of agricultural products at the same time. It provides a replicable pathway for brand upgrading of geographical indication products and long-term agricultural support.

Keywords: IP trendy toy, geographical indication agricultural products, e-commerce for agricultural assistance, brand extension, ESG.

1. Introduction

The integration of digital economy and rural industries has become a core driver of China's rural revitalization in the post-pandemic era. Over the past five years, the central government has issued more than 20 policy documents supporting rural e-commerce and cultural creativity in agriculture, aiming to transform traditional agriculture from a resource-dependent model to a value-added innovation model. China's GI agricultural product market has grown rapidly, reaching 1.5 trillion yuan in 2024, accounting for 18% of the total agricultural product market [9]. However, more than 70% of GI products are still sold as raw materials or primary processed goods, with an average added value rate of only 25%, far lower than the 60% level in developed countries. Most GI brands lack distinct personality and emotional connection with consumers, leading to homogeneous competition and low pricing power.

Traditional agricultural assistance models, dominated by government subsidies and one-time charity sales, have shown obvious limitations. These models often rely on external resources rather than endogenous market forces, resulting in unsustainable income growth for farmers. A 2024 report by the China E-Commerce Research Center shows that over 60% of charity agricultural assistance projects cannot operate continuously for more than two years, and only 15% of participating farmers achieve long-term income growth [9]. Meanwhile, the trendy toy market in China has maintained a 20% annual growth rate, reaching 47.8 billion yuan in 2024 [10]. Generation Z consumers, who account for 65% of trendy toy buyers, increasingly value emotional experience, social attributes and

social responsibility in their consumption decisions. They are willing to pay a 20%-40% premium for products that combine cultural creativity and public welfare value.

Against this background, the integration of IP trendy toys and GI agricultural product e-commerce has emerged as a promising innovation. This model not only injects cultural and emotional value into agricultural products but also transforms agricultural assistance from a passive charity activity into an active market behavior. However, existing research on this topic remains fragmented, with few studies systematically analyzing the feasibility and operational mechanism of this cross-border integration. This paper aims to fill this gap by constructing a comprehensive theoretical framework and verifying its practical value through multiple case studies. The main contributions of this paper are as follows: first, it expands the research perspective of sustainable agricultural assistance by integrating IP creativity and ESG concepts; second, it proposes a replicable operational model suitable for small and medium-sized agricultural enterprises; third, it provides empirical evidence for the effectiveness of cultural creativity in enhancing agricultural product value.

2. Related Work

Existing research on agricultural assistance e-commerce and IP branding has developed along two separate lines. International studies on agricultural assistance e-commerce mainly focus on supply chain optimization and information asymmetry reduction. Stiglitz (2002) argued that e-commerce platforms can reduce transaction costs by 30%-40% by eliminating intermediate links, thereby improving farmers' income [1]. Reardon et al. (2020) conducted empirical research on agricultural e-commerce in Southeast Asia and found that the biggest challenge for smallholder farmers is not market access but supply chain coordination and quality standardization [2]. Other studies have explored the application of digital technologies such as blockchain and big data in agricultural traceability, confirming their positive impact on consumer trust. However, international research rarely involves the integration of cultural creativity and agricultural assistance, as the cultural and consumption contexts in Western countries are significantly different from China.

Domestic research on agricultural assistance e-commerce has shifted from channel expansion to brand IP construction. Guo and Chi (2020) built a brand IP-driven e-commerce operation model for agricultural assistance based on the "Cool Immortal" case, confirming that IP empowerment can effectively expand the market space of agricultural products, and differentiated operation is the core to avoid homogeneous competition and achieve stable income [3]. Li et al. (2026) took Ningqiang Qiang Embroidery Workshop as an example, verifying that the integration of cultural IP and cultural tourism can provide long-term support for rural industrial revitalization [4]. Feng (2021) sorted out the hierarchical construction logic of agricultural assistance brand IP from visual symbol to value core, providing practical reference for the IP upgrading of agricultural products [5].

However, existing studies mostly focus on traditional regional cultural IP, and rarely discuss the cross-border value of trendy toy IP targeting young consumers. These studies mainly focus on traditional cultural IP such as local legends and historical figures, with little attention to trendy toy IP, which is more popular among young consumers. In addition, few studies have explored the operational mechanism and profit model of IP-empowered agricultural assistance e-commerce, making it difficult to guide practical applications.

In terms of theoretical foundation, this paper draws on three core theories: brand extension theory, experience economy theory and stakeholder theory. Aaker (1991) pointed out that a well-known brand can extend to related product categories, reducing consumer perception risk and marketing costs [12]. Pine and Gilmore (1998) proposed the experience economy theory, emphasizing that consumers are increasingly pursuing experiential consumption rather than just product functionality [11]. Freeman (1984) argued that enterprises should consider the interests of all stakeholders, including consumers, producers, employees and society, to achieve long-term sustainable development [13]. These theories provide a solid theoretical basis for the construction of the IP trendy toy empowered agricultural assistance model.

In summary, existing research has laid a theoretical foundation for this study, but two major shortcomings remain: first, the lack of systematic research on the integration mechanisms between trendy toy IP and e-commerce for geographical indication agricultural products; second, the analysis of the operational feasibility and sustainability of this cross-border business model remains insufficient. This paper addresses these gaps by constructing a comprehensive theoretical framework and conducting in-depth case studies.

3. Construction and Feasibility Foundation of the Mode

3.1. Core Framework of the Mode

By analyzing sales trends of popular IP dolls in the market and evolving agricultural support models, the study identifies four interconnected core components that form the framework for IP-powered agricultural support: IP trendy toy creativity, GI agricultural products, digital traceability and ESG agricultural assistance. The IP trendy toy module serves as the core value carrier, injecting emotional and cultural value into agricultural products through original design and story creation. The GI agricultural product module provides the basic product support, ensuring product quality and regional characteristics. The digital traceability module builds trust between consumers and producers by recording the entire production and circulation process. The ESG agricultural assistance module ensures the sustainability of the model by integrating environmental protection, farmer empowerment and transparent governance.

This model realizes the organic unification of four values: cultural value, product value, public welfare value and technical value. Unlike traditional charitable agricultural assistance, it does not rely on consumers' sympathy but rather on their recognition of the product's value and cultural significance. Unlike purely intellectual property-derived products, its primary vehicle is finished agricultural products, designed to achieve the objectives of agricultural assistance. The model adopts a light-asset operation strategy, focusing on core links such as IP design, brand operation and supply chain management, while outsourcing non-core links such as production and logistics to professional partners. This not only reduces initial investment but also improves operational flexibility.

3.2. Feasibility Basic Support

The feasibility of this model is supported by sufficient practical cases. In 2024, Pagoda, China's largest fruit retail chain, cooperated with the popular IP Nailong to launch fruit stick blind box gift boxes. The product sold over 500,000 boxes within one month, with a unit price 35% higher than ordinary fruit products. The cooperation not only increased Pagoda's sales but also helped 1,200 fruit farmers in Yunnan increase their income by an average of 2,800 yuan. [15]

The ESG agricultural assistance part of the model in this paper has also been widely practiced. Ant Group's "Hundred Counties and Hundred Products" project[16] has built a green supply chain covering 160 counties across China, helping over 2 million farmers increase their income through order-based agriculture. The project uses blockchain technology to realize full-process traceability of agricultural products, allowing consumers to check the production process and the amount of their contribution to farmers. Pagoda's agricultural assistance system focuses on the deep processing of defective fruits, which reduces fruit waste by 30% while increasing farmers' income. These practices have proved that ESG-based sustainable agricultural assistance is not only socially valuable but also commercially viable.

From a technical perspective, the popularization of digital traceability technology has laid a solid foundation for the model. QR code traceability systems can now be deployed at a cost of less than 0.1 yuan per product, making it affordable for small and medium-sized enterprises. Order-based agriculture and pre-sale models can effectively solve the problem of agricultural product perishability and overproduction. By collecting pre-orders before harvest, farmers can arrange production according to market demand, reducing inventory risk and waste.

3.3. Literature and Theoretical Support

This model is supported by three core theories: brand extension theory, experience economy theory and stakeholder theory. Brand extension theory points out that a well-known brand can extend to related product categories, reducing consumer perception risk and marketing costs [12]. In this model, the IP trendy toy brand extends to agricultural products, leveraging its existing popularity and emotional connection with consumers to quickly gain market acceptance. Experience economy theory emphasizes that consumers are increasingly pursuing experiential consumption rather than just product functionality [11]. The blind box form and social attributes of trendy toys provide consumers with a unique consumption experience, increasing their willingness to pay. Stakeholder theory argues that enterprises should consider the interests of all stakeholders, including consumers, producers, employees and society [13]. The ESG agricultural assistance module of this model balances the interests of all parties, ensuring the long-term sustainable development of the model.

In addition, existing studies support the model's operational logic. Zhao (2025) pointed out IP operation improves market acceptance of agricultural e-commerce and cuts expansion costs with youth entrepreneurship [6]. Tang (2020) found IP content matrix reduces customer acquisition cost and enhances operational risk resistance [7]. Top-tier IP empowerment can significantly drive agricultural product sales and generate brand premium. These findings lay a theoretical foundation for the model construction.

4. Market Competition and SWOT Feasibility Analysis

4.1. Industry Competition Analysis

The current market for agricultural product e-commerce is highly competitive, with major players including traditional e-commerce platforms such as Taobao and JD.com, fresh food e-commerce platforms such as Hema and Dingdong Maicai, and live streaming e-commerce anchors. However, most of these players focus on price competition and product quality competition, with few exploring the cross-border integration of cultural creativity and agricultural assistance. The integrated model of "IP trendy toy + GI agricultural products + ESG assistance" has obvious market gaps, providing broad development space for new entrants.

From the perspective of Porter's Five Forces Model, the threat of new entrants is moderate. Although the technical threshold of this model is not high, building a successful IP brand and establishing a stable supply chain require long-term investment and accumulation. The bargaining power of suppliers is relatively low. There are abundant packaging and trendy toy OEM resources in China, and GI agricultural product producers are mostly scattered smallholder farmers, who have weak bargaining power. The bargaining power of consumers is also relatively low. The target consumers of this model are Generation Z, who are less sensitive to price and more concerned about product design, cultural connotation and public welfare value. The threat of substitutes is moderate. Traditional agricultural products and ordinary trendy toys are substitutes, but they cannot provide the composite experience of "consumption + collection + public welfare" offered by this model. The intensity of industry competition is low in the segmented market, as few enterprises have fully explored this cross-border field.

4.2. SWOT Feasibility Analysis

The strengths of this model lie in its differentiated competitiveness and sustainable operation mechanism. First, the cross-border integration of trendy toys and agricultural products creates a unique product value proposition, which is difficult for competitors to replicate in the short term. Second, the asset-light operation mode optimizes the asset structure and strengthens capital liquidity management, which can effectively reduce inventory and capital pressure, improve return on capital and financial resilience, and is suitable for the development of small and medium-sized enterprises [8]. Third, the ESG agricultural assistance system enhances the brand's social image and consumer

loyalty, forming a long-term competitive advantage. Fourth, the diversified profit structure, including product sales, customized services and IP derivatives, improves the model's anti-risk ability.

The main weaknesses of the model are the high requirements for supply chain coordination and quality control. The production cycles of trendy toys and agricultural products are often mismatched, requiring precise planning and management. In addition, ensuring the consistency of product quality across different batches and regions is a major challenge. Most existing similar models have problems in agricultural assistance transparency, which may damage consumer trust if not properly addressed.

The model faces significant development opportunities. First, the demand for cultural and creative agricultural products among young consumers is growing rapidly, with a market potential of over 100 billion yuan. Second, the Chinese government continues to introduce policies to support rural revitalization and cultural creativity, providing policy dividends and financial support for the model. Third, the GI agricultural product market is still in the early stage of brand development, with huge room for value improvement. Fourth, the popularization of digital technologies such as social media and live streaming provides low-cost and efficient marketing channels for the model.

The main threats include imitation by competitors, food safety risks and market fluctuations. Once the model proves successful, it may be quickly imitated by large enterprises with abundant resources. Food safety is the lifeline of agricultural product enterprises, and any quality accident may cause irreversible damage to the brand. In addition, the trendy toy industry has certain periodicity, and the popularity of IP may decline over time. However, these threats can be effectively mitigated through continuous innovation, strict quality control and diversified IP cooperation.

5. Marketing and Profit Model Demonstration

5.1. Feasibility of Marketing Model

The marketing core of this model lies in leveraging low-cost and high-efficiency channels to precisely reach the consumers of Generation Z. The online marketing system focuses on the three major mainstream platforms where young people gather: Xiaohongshu, Douyin, and Bilibili. It adopts a three-dimensional promotion strategy of "official account operation + niche bloggers' promotion + private domain operation". The official account posts content such as IP stories as well as the production and assistance process in the agricultural field, in order to build brand image and establish an emotional connection with consumers. Also, inviting niche bloggers followed by 10,000 to 100,000 fans to share their product opening experiences and actual usage scenarios. This approach is more credible than celebrity endorsements and has a better conversion effect for sales. Besides, private domain operation is carried out through WeChat groups and official accounts, providing exclusive benefits and customized services to improve user retention rate and repurchase rate.

The offline marketing efforts are mainly focused on campuses and tourist attractions. Organizing campus promotion activities such as trendy toy exhibitions and agricultural assistance lectures in universities to attract the student consumers. Experience booths are set up in cultural tourism attractions, combining local geographical characteristic agricultural products and regional cultural features to enhance brand exposure and sales.

In addition, the model uses digital traceability as a marketing tool. Consumers can scan the QR code on the products to view the entire production process and the amount of their contribution to farmers, which not only enhances trust but also encourages social sharing.

This marketing model has been verified by successful practices. For example, EVE Deep Mountain Market launched Miao indigo-dyed zodiac trendy toy blind boxes for rural revitalization. It cooperated with niche bloggers focusing on trendy toys and intangible cultural heritage on Xiaohongshu and Douyin, with offline pop-up booths set up at tourism attractions. The blind box manufacturing brought stable handcraft income to local Miao embroiderers and boosted sales of mountain agricultural specialties. This case proves that this marketing model is effective and feasible.[14]

5.2. Feasibility of Profit Model

The profit sources of this model are divided into three parts: core product sales, customized services, and IP derivative cooperation. This forms a diversified profit structure, which can not only ensure short-term cash flow but also support long-term development.

The core product's sales revenue accounts for approximately 70% of the total revenue, and it mainly sells co-branded products that combine fruit snacks with trendy cartoon IP. With the support of IP, the product price can be increased by 30% to 50%, while mass production can reduce the unit cost, and the gross profit margin can reach 40% to 50%. For example, after the collaboration between Pagoda fruit sticks and the Nailong IP, the product price increased from 10 yuan per bag to 15 yuan per bag, with a gross profit margin of 48% [15].

The revenue from customized services accounts for approximately 20% of the total revenue, mainly including enterprise customized gift boxes and festival customized products. Many enterprises are willing to purchase customized products with charitable attributes, using them as employee benefits or business gifts. Such products have a higher profit margin than ordinary goods. For instance, the Sihua County's Golden Silk Melon project has launched a customized gift box service, which has received orders from over 30 enterprises. The average order value per piece is 50,000 yuan, and the gross profit margin exceeds 60%.[17]

The income from IP derivative cooperation accounts for approximately 10% of the total revenue. The business involves licensing the IP to other enterprises, and developing derivative products such as stationery and home decorations. As the influence of IP continues to expand, this part of revenue will keep increasing and will become a long-term and important source of profit growth. From the perspective of cost composition, the light-asset operation model has significantly reduced fixed costs. The main costs are divided into raw material procurement, IP design, and marketing promotion, accounting for 30%, 10%, and 15% of the total revenue respectively. Order-driven production model avoids the risk of inventory backlog. The annual inventory turnover rate can reach 8 to 10 times, which is much higher than the industry average of 3 to 4 times. Overall, this profit model has strong anti-risk ability and can achieve stable profitability.

6. Discussion

6.1. Theoretical and Practical Implications

This study has important theoretical implications. It expands the research scope of sustainable agricultural assistance by introducing IP creativity and experience economy concepts, providing a new theoretical perspective for understanding the value enhancement mechanism of agricultural products. It also enriches the brand extension theory by verifying the feasibility of extending trendy toy IP to agricultural product categories. In addition, the four-dimensional core framework constructed in this paper provides a systematic analytical tool for future research on cross-border integration of cultural creativity and agriculture.

In terms of practical implications, this study provides a replicable operational model for GI agricultural product enterprises and agricultural assistance organizations. The asset-light operation strategy and diversified profit model make it suitable for small and medium-sized enterprises with limited resources. The marketing and supply chain management practices summarized in this paper can help enterprises reduce operational risks and improve profitability. In addition, this study provides a new idea for government departments to promote rural revitalization, which can support the development of this model through policy guidance and financial support.

6.2. Research Limitations

This study has several limitations that need to be addressed in future research. First, the empirical analysis is based on a small number of case studies, and the conclusions may not be fully generalizable to all regions and product categories. Second, this study mainly focuses on the domestic market in China, and the applicability of the model in international markets needs to be further verified. Third, this study does not conduct quantitative analysis on the impact of different IP types and cooperation models on product performance. Fourth, the long-term sustainability of the model has not been verified, as most existing cases have been operating for less than two years.

6.3. Future Work

Future research can be carried out in the following directions. First, conduct large-scale empirical research through questionnaires and enterprise data to quantitatively verify the effectiveness of the model and identify the key success factors. Second, explore the applicability of the model in international markets, especially in Southeast Asia and Africa, where agricultural assistance e-commerce is developing rapidly. Third, study the impact of different IP types (original IP vs. licensed IP) and cooperation models on product performance and consumer behavior. Fourth, track the long-term operation of existing cases to evaluate the sustainability of the model. In addition, future research can also explore the application of emerging technologies such as AI large models and metaverse in IP design and consumer experience enhancement.

7. Summary

This paper systematically studies the mode of IP trendy toy empowering GI agricultural product e-commerce for agricultural assistance, addressing the research gap in cross-border integration of cultural creativity and sustainable agriculture. Based on literature review and multiple case studies, it constructs a four-dimensional core framework and demonstrates its feasibility from multiple dimensions. The research shows that this model effectively solves the core problems of traditional agricultural assistance models, such as low added value, unsustainability and weak consumer connection. It can not only increase the income of farmers and the competitiveness of products but also meet the diversified consumption needs of young consumers.

The main findings of this paper are as follows: first, the integration of IP trendy toys and agricultural products can significantly improve product added value and brand competitiveness; second, the light-asset operation and order-driven production model effectively reduce operational risks and make the model suitable for small and medium-sized enterprises; third, the ESG agricultural assistance system enhances the social value and sustainability of the model; fourth, the multi-channels marketing model can accurately reach young consumers and achieve high conversion rates.

Although this study has some limitations, it provides a valuable theoretical reference and practical path for the innovative development of geographical indication agricultural product e-commerce and sustainable agricultural assistance. With the continuous growth of the trendy toy market and the deepening of rural revitalization, this model has broad development prospects. It is expected to become an important force in promoting the high-quality development of China's agricultural industry and realizing common prosperity.

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