Proceedings of Business and Economic Studies, 2026, Volume 9, Issue 4
http://ojs.bbwpublisher.com/index.php/PBES
Online ISSN: 2209-265X
Print ISSN: 2209-2641

# AIGC-Driven Precision Marketing and Its Impact on Consumers' Purchase Intention for Agricultural Products

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**Abstract:** The rapid advancement of artificial intelligence (AI) technologies has significantly reshaped the landscape of rural and agricultural e-commerce. Agricultural products originating from rural areas frequently encounter challenges such as information asymmetry, limited access to professional marketing expertise, and low consumer engagement. This study investigates the integration of AI-generated content (AIGC) with precision marketing to enhance the appeal of agricultural products and foster consumer purchase intentions. Precision marketing leverages machine learning algorithms and big data analytics to identify target audiences with high accuracy, while AIGC dynamically generates customized textual, visual, and interactive content that effectively engages consumers. Empirical evidence suggests that AIGC-driven precision marketing markedly reduces cognitive load during the "confused intermediate stage" of decision-making, thereby increasing perceived usefulness and ease of use. Moreover, the study underscores the pivotal role of AIGC in mitigating resource constraints in rural e-commerce, providing a scalable and cost-effective approach to agricultural brand development. The findings offer both theoretical and practical insights, serving as a guideline for policymakers and rural enterprises seeking to harness AI to enhance digital marketing strategies.

**Keywords:** AI-generated content (AIGC); Precision marketing; Purchase intention; Agricultural products; Rural e-commerce; Consumer behavior; Digital marketing

***Online publication:*** June 3, 2026

## 1. Introduction

The accelerated evolution of artificial intelligence (AI) has catalyzed fundamental transformations in global retail, with rural e-commerce emerging as a crucial driver of economic development and poverty alleviation, particularly in developing countries. In China, for example, the "National Rural E-commerce Comprehensive Demonstration" policy has significantly stimulated county-level economic growth by integrating rural areas into the broader digital economy. Despite substantial infrastructural advancements, agricultural product marketing

remains challenged by structural and operational constraints. Traditional marketing approaches often lack the flexibility to respond to rapidly shifting market dynamics, while rural enterprises typically face limitations in financial and professional resources necessary for executing sophisticated digital marketing initiatives [1].

Concurrently, the emergence of AI-generated content (AIGC) has transformed the digital marketing ecosystem. AIGC encompasses a suite of technologies capable of autonomously generating high-quality text, imagery, audio, and video based on specific prompts and datasets. When combined with precision marketing, a strategy that employs big data and machine learning to deliver targeted, personalized information to specific consumer segments, AIGC offers unprecedented opportunities to enhance agricultural product marketing. By producing personalized, engaging content that conveys product origin, cultivation practices, and nutritional value, AIGC effectively bridges the communication gap between rural producers and urban consumers.

Within this evolving digital environment, understanding consumer behavior is imperative. Modern consumers navigate a complex decision-making process, often characterized as the "confused intermediate stage," during which they must sift through voluminous information and evaluate multiple options prior to finalizing purchase decisions. This study aims to explore how AIGC-driven precision marketing influences this process, particularly through mechanisms such as content personalization, perceived authenticity, and interaction convenience, thereby shaping consumers' purchase intentions toward agricultural products.

The study pursues three primary objectives as follows:

(1) To conceptualize the integration of AIGC and precision marketing in the rural e-commerce context;
(2) To develop an analytical framework elucidating the effects of AIGC-driven marketing on consumer purchase intention;
(3) To provide actionable insights for rural enterprises seeking to leverage AIGC to enhance the market competitiveness of agricultural products.

## 2. Literature review

### 2.1. Rural e-commerce and agricultural product marketing

Rural e-commerce has emerged as a cornerstone of agricultural modernization. Initiatives aimed at improving rural information and communication technologies (ICT) and logistics infrastructure have effectively connected remote producers with expansive urban markets. Empirical studies indicate that e-commerce adoption not only elevates household income but also facilitates county-level industrial restructuring [2]. Nonetheless, intrinsic characteristics of agricultural products, including homogeneity, perishability, and geographical separation between producers and consumers, pose significant marketing challenges. Conventional marketing frameworks, such as the 4Ps (product, price, promotion, place), are insufficient for managing the multidimensional datasets inherent to contemporary consumer behavior. Consequently, innovative strategies are required to accurately identify potential consumers and effectively communicate the distinctive value propositions of rural agricultural products.

### 2.2. Precision marketing in digital marketing contexts

Digital marketing encompasses all marketing activities conducted through electronic devices or online platforms, including search engine optimization (SEO), social media marketing (SMM), and content marketing. Within this domain, precision marketing has emerged as a critical strategy. It utilizes big data analytics and machine learning algorithms, such as support vector machines (SVM), XGBoost, and CatBoost, to process

extensive consumer datasets, uncover latent behavioral patterns, and predict future actions [3]. By analyzing metrics such as page views, dwell time, and historical purchase behavior, firms can segment audiences and deliver highly targeted advertisements and personalized recommendations. In the agricultural product sector, precision marketing enables rural enterprises to identify consumers predisposed to purchasing organic, locally sourced, or specialty products, thereby optimizing marketing resource allocation and enhancing conversion rates.

### 2.3. AIGC empowerment in precision marketing and consumer behavior

AIGC represents a frontier in AI-driven marketing. Leveraging large language models (LLMs) and generative adversarial networks (GANs), AIGC can autonomously produce high-quality content at scale. In content marketing, AIGC generates compelling blog articles, product descriptions, and social media updates, precisely targeting relevant consumer segments. Additionally, AIGC facilitates dynamic content personalization, tailoring information in real time to individual preferences. AIGC-powered chatbots and virtual assistants offer continuous customer support, addressing queries and guiding consumers throughout the purchase process. Despite notable advantages in efficiency and scalability, the impact of AIGC on consumer behavior, particularly trust, perceived authenticity, and value perception, remains underexplored [4].

## 3. Mechanisms through which AIGC-driven precision marketing influences purchase intention

Integrating AIGC into precision marketing strategies creates multiple, interconnected pathways through which consumer purchase intention can be influenced. The primary mechanism involves the systematic optimization of consumers' information acquisition, evaluation, and decision-making experiences, thereby mitigating the challenges associated with the "confused intermediate stage."

### 3.1. Perceived personalization

Perceived personalization is a primary driver, reflecting the extent to which consumers perceive marketing content, product recommendations, and interactions as tailored to their individual needs, past behaviors, and situational context. Machine learning algorithms, serving as the "analytical engine", process large datasets to generate consumer profiles and identify market segments. AIGC functions as the "creative and execution engine," dynamically producing highly customized text, visual content, video scripts, and interactive dialogues. For instance, if a consumer searches for "baby food ingredients," AIGC can automatically generate personalized recipes featuring organic vegetable purees, visually highlight safety certifications, and simulate Q&A interactions with a nutrition consultant. Such precise targeting reduces information filtering costs, enhances perceived usefulness, and establishes positive first impressions, thereby laying the foundation for purchase intention.

### 3.2. Perceived authenticity

Perceived authenticity is essential for building trust, especially in the context of agricultural products. Consumers exhibit heightened sensitivity to food origin, production methods, and safety. While AIGC can generate visually appealing content, concerns regarding "fakeness" or "over-enhancement" may arise. Perceived authenticity, where consumers believe content accurately represents product attributes, is critical. Achieving authenticity requires integrating verifiable datasets, such as IoT sensor readings on soil and climate, agricultural

operation logs, blockchain-tracked logistics, and real farmer interviews. When AIGC incorporates these data into storytelling (e.g., "Recent rainfall increased strawberry sweetness by 15% compared to last month"), content credibility is enhanced, reinforcing perceived usefulness and reducing decision-making resistance, ultimately boosting purchase intention.

### 3.3. Perceived ease of use and perceived usefulness

Perceived ease of use and perceived usefulness constitute a direct experiential loop that drives consumer conversion. In AIGC-enabled marketing, perceived ease of use pertains to the fluidity and intuitiveness of human-computer interaction. Examples include multi-turn, context-aware chatbots, visual search tools that recognize products from uploaded images, and user-friendly personalized recommendation interfaces. Reduced interaction barriers facilitate adoption, while perceived usefulness enables efficient product comparison, comprehension of complex information, and acquisition of usage recommendations. Enhanced ease of use amplifies perceived usefulness, which directly drives purchase intention [5].

Together, these mechanisms form a synergistic cycle: personalization captures attention and establishes initial relevance, authenticity reinforces trust, and superior ease of use and resulting usefulness reduce decision costs, converting consumer interest and trust into actual purchase intention. AIGC-driven precision marketing enhances conversion efficiency by systematically leveraging this mechanism loop.

## 4. AIGC-enabled strategies for agricultural precision marketing

Integrating AIGC into precision marketing provides transformative capabilities for rural e-commerce, overcoming limitations inherent to traditional agricultural marketing and enabling data-driven, highly targeted campaigns.

### 4.1. Automated and personalized content generation

Rural agricultural products often lack compelling brand narratives, and farmers or small cooperatives typically lack the expertise to produce engaging product descriptions or social media posts. Leveraging natural language processing (NLP), AIGC can automatically generate persuasive content highlighting unique selling points such as organic certification, traditional cultivation methods, or geographical indications. Based on precision marketing insights, AIGC can tailor content for different demographic segments. For example, emphasizing nutritional benefits for health-conscious urban millennials, and traditional flavors or cost-effectiveness for older consumers.

### 4.2. Visual and video marketing enhancement

Visual appeal is a critical determinant of purchase intention in e-commerce. AIGC tools, including AI-driven image generation and video synthesis, produce high-quality visuals at a fraction of the cost of traditional photography. For agricultural products, AIGC can depict harvest scenes, pristine rural environments, and appetizing food preparation. Additionally, AIGC facilitates short-form video marketing on platforms such as TikTok and Instagram, optimizing content based on engagement analytics.

### 4.3. Intelligent customer interaction and chatbots

Customer service represents a significant constraint for rural e-commerce. AIGC-powered chatbots provide

real-time, context-aware responses, overcoming the limitations of rule-based systems. For example, when consumers inquire about pesticide use, chatbots can access IoT farm data to provide accurate and reassuring answers, enhancing perceived ease of use, fostering trust, and influencing purchase intention.

### 4.4. Predictive analytics and dynamic optimization

The synergy between AIGC and precision marketing is particularly evident in predictive analytics. Machine learning models (e.g., CatBoost) analyze historical purchase behavior, browsing data, and seasonal trends to forecast demand. Based on these predictions[6], AIGC can proactively generate targeted marketing campaigns, such as personalized emails, social media ads, and website banners, maximizing conversion opportunities.

## 5. Discussion and implications

### 5.1. Theoretical implications

This study contributes to the literature on digital marketing and consumer behavior by highlighting how content relevance (personalization) and credibility (authenticity) drive perceived usefulness and purchase intention in the AIGC era. It conceptually integrates precision marketing (analytical engine) with AIGC (creative engine), illustrating how data-driven insights can be translated into engaging consumer touchpoints. This integration addresses the "confused intermediate stage," demonstrating how AI simplifies exploration and evaluation through personalized, authentic, and interactive content.

### 5.2. Practical implications

For rural enterprises, agricultural cooperatives, and policymakers, the implications are profound as outlined:

(1) Cost-effective brand building: AIGC enables rural enterprises to generate professional-grade marketing materials, democratizing high-quality branding previously accessible only to large firms;

(2) Enhancing consumer trust through data integration: Integrating AIGC with IoT cloud platforms ensures content authenticity, mitigating skepticism and increasing perceived trustworthiness;

(3) Optimizing customer journeys: Implementing AIGC-driven chatbots and personalized recommendation systems enhances user experience, retention, and conversion [7];

(4) Strategic policy support: Policymakers should provide subsidies and training programs for AIGC adoption, promoting AI literacy among rural entrepreneurs, a key step for advancing rural revitalization.

## 6. Conclusion

AIGC-driven precision marketing represents a transformative approach to promoting agricultural products in the digital era. By leveraging machine learning to uncover consumer preferences and deploying AIGC to produce personalized, authentic, and engaging content, rural e-commerce can overcome traditional marketing limitations. When consumers perceive AI-generated content as highly personalized, authentic, and user-friendly, perceived usefulness increases, directly enhancing purchase intention. Strategically applying AIGC not only promotes agricultural sales but also contributes to broader rural economic development goals. This study primarily presents a conceptual framework. Future research should employ empirical methods to collect primary data and statistically validate proposed relationships. Further, AIGC can be disaggregated into distinct forms (text, video, interactive chatbots) to examine differential impacts on consumer behavior. Longitudinal

studies could explore effects on brand loyalty and customer lifetime value. Finally, ethical considerations related to AI content disclosure and data privacy warrant further investigation.

## Funding

Higher Education Research Project of Bureau of Education of Guangzhou (2024) (Project No.: 2024312499)

## Disclosure statement

The authors declare no conflict of interest.

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