

Research on the Problems and Strategies of Live-Streaming E-commerce on the Douyin Platform in China

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Abstract. This paper analyzes the problems and challenges of live-streaming e-commerce on the Douyin platform in China. It focuses on product quality inconsistency, content homogeneity, and live-streaming regulation. It also suggests strategies to address these problems and challenges, such as using AI and QA to improve quality, focusing on innovation and differentiation to enhance experience, and establishing laws and standards to regulate behavior. The research significance of this paper lies in its contribution to the understanding and development of live-streaming e-commerce, a new form of online shopping that combines live video, social media, and e-commerce. Live-streaming e-commerce has become a popular and profitable business model in China, especially on the Douyin platform. By identifying and solving the problems and challenges of live-streaming e-commerce on the Douyin platform, this paper can help the platform, the live streamers, and the customers achieve better outcomes and benefits. However, this paper has some limitations, such as the lack of primary data from the participants. Therefore, future studies can use more direct and interactive methods to collect primary data from the stakeholders of live-streaming e-commerce on the Douyin platform. This can help to obtain more accurate and comprehensive information and insights.

Keywords: Live-streaming E-commerce, Douyin Platform, Live-streaming Regulation, Product Quality Inconsistency.

1. Introduction

Live streaming marketing is a form of online marketing that uses live video streaming technology to showcase products or services, interact with potential customers, and stimulate purchase behavior. Live-streaming marketing has become increasingly popular in recent years, especially in China, where social media and e-commerce platforms have integrated live-streaming functions to provide consumers with more diverse and immersive shopping experiences. According to a report by iiMedia Research, the number of live-streaming e-commerce users in China reached 388 million in 2020, accounting for 39.4% of the total online shoppers, and the transaction volume of live-streaming e-commerce reached 1.05 trillion-yuan, accounting for 9.2% of the total online retail sales [1].

Douyin, as one of the most popular short video and live streaming platforms in China, has played a leading role in promoting live streaming marketing. Douyin was launched in 2016 by ByteDance, a Chinese internet technology company that owns TikTok, a similar platform for overseas markets. Douyin allows users to create and share short videos with filters, stickers, music, and special effects and watch live streams from other users or celebrities. Douyin also enables users to purchase products or services displayed or recommended in videos or live streams through its e-commerce function. According to Douyin's official data, as of January 2021, Douyin had over 600 million daily active users and over 22 million daily active merchants [2]. Among them, more than 50% of the merchants used live streaming as their main marketing method.

However, despite the popularity and potential of Douyin live streaming marketing, there is still a lack of systematic and empirical research on its influence on consumer purchase intention. Consumer purchase intention refers to the willingness or tendency of consumers to buy a certain product or service [3]. It is an important indicator of consumer behavior and marketing effectiveness. Understanding the factors that affect consumer purchase intention can help marketers design better marketing strategies and increase sales performance. Therefore, this paper aims to fill this research gap by conducting a case study on a typical Douyin live-streaming marketing campaign.

2. Literature Review

2.1. The Characteristics of Live Streaming Marketing

Live streaming marketing is a new form of online marketing that combines the features of live video streaming, social media, and e-commerce. Compared with traditional online marketing methods, such as text, image, or pre-recorded video, live streaming marketing has unique characteristics that make it more attractive and effective for marketers and consumers.

First, live-streaming marketing is more interactive and engaging. Hu, Zhang & Wang studied why audiences keep watching on live video streaming platforms [4]. The article proposes a theoretical framework that includes dual identification with the host and the audience group and verifies it through a questionnaire survey. The article finds that the identification of audiences with the host and the audience group both promote their continuous watching intention; the identification of audiences with the host is influenced by parasocial interaction, actual and ideal self-congruence; the identification of audiences with the audience group is influenced by involvement, cognitive consensus, and emotional contagion; different types of content moderate the strength of these relationships.

Second, live-streaming marketing is more authentic and trustworthy. Liang & Wang investigated the trust and commitment of consumers in live streaming e-commerce and their impacts on purchase intention and word-of-mouth intention [5]. They developed a research model based on the trust-commitment theory and tested it by surveying 412 live-streaming e-commerce users. They discovered that consumers' trust in live-streaming e-commerce platforms and hosts was affected by cognitive, affective, and social factors, while commitment was affected by psychological and economic factors. Trust and commitment enhanced consumers' purchase intention and word-of-mouth intention, but different types of products had different moderating effects. The live streamer can demonstrate the features, functions, benefits, or usage scenarios of the products or services more directly and convincingly.

Third, live-streaming marketing is more social and influential. Cialdini & Gold Steins surveyed the latest studies on social influence, emphasizing compliance and conformity [6]. They examined the principles and processes of how the target is influenced by external factors based on three fundamental human goals: accuracy, affiliation, and maintaining a positive self-concept. They highlighted the subtle, indirect, and unconscious ways these goals interact with external forces to create social influence effects.

2.2. The Factors Influencing Consumer Purchase Intention

Consumer purchase intention is influenced by various factors at different levels, such as individual factors (e.g., personality traits, attitudes, motivations), social factors (e.g., social norms, reference groups), environmental factors (e.g., culture, economy), and situational factors (e.g., time pressure, availability) [3]. However, some specific factors may significantly impact consumer purchase intention in the context of live-streaming marketing.

2.2.1. Perceived value

Perceived value refers to the overall evaluation of the benefits and costs of buying a product or service. Zeithaml proposed a conceptual model that defines and relates price, perceived quality, and perceived value [7]. The author supported the propositions through company interviews and consumer interviews. They found that price, perceived quality, and perceived value affect consumer purchase intention, and they have direct and indirect relationships.

2.2.2. Perceived risk

Perceived risk refers to the uncertainty and potential negative consequences of buying a product or service. Bauer investigated the concept of risk-taking in consumer behavior and its implications for marketing [8]. The author claimed that consumers assess the uncertainty and importance of different options based on their objectives, preferences, knowledge, and experience risk-taking level

of risk-taking, thus deciding the risk-taking. Marketing aims to offer valuable information and stimuli to affect consumers' perceptions of uncertainty and importance, thus encouraging consumer purchase.

2.2.3. Perceived enjoyment

Perceived enjoyment refers to the extent to which buying a product or service is enjoyable and satisfying. Davis proposed two important variables, namely perceived usefulness and ease of use, and argues that they are the basic factors affecting user acceptance [9]. The author designs some scale items based on the definitions of these two variables. The results yield two scales, each with six items, with a reliability of .98 for perceived usefulness and .94 for perceived ease of use. These two scales have high convergent, discriminant, and factorial validity. Perceived usefulness is significantly correlated with self-reported current use and self-predicted future use. Perceived ease of use is also significantly correlated with current and future use. In both studies, perceived usefulness correlates significantly more with usage behavior than perceived ease of use. Regression analysis suggests that perceived ease of use may actually be a causal antecedent of perceived usefulness rather than a parallel, direct determinant of system use. The author provided some implications for future user acceptance research.

2.2.4. Perceived trust

Perceived trust refers to the extent to which consumers believe buying a product or service from a live streamer is safe, reliable, and beneficial. Gefen argued that in online shopping, consumers not only evaluate the technical features of the website interface, such as perceived usefulness and perceived ease of use, but also assess the trustworthiness of the e-merchant [10]. These two aspects both affect consumers' purchase intention. In addition, the author also finds that consumers' trust in e-merchants is established through the following pathways: (1) consumers believe that e-merchants have no intention to deceive; (2) consumers believe that the website has security mechanisms; (3) consumers have a sense of familiarity with the website interface; (4) consumers think that the website interface is easy to use. The author discusses this model's theoretical and practical implications and suggests future research directions.

3. Case Description

Douyin is a short video social platform developed by ByteDance. The main function of Douyin is to allow users to shoot, edit, and share 15-second or 60-second short videos with their phones and add various elements, such as special effects, filters, music, subtitles, etc., to the videos to increase the creativity and fun of the videos. Douyin also provides a powerful recommendation algorithm that recommends personalized content to users based on their viewing behavior and preferences, forming a highly accurate and highly interactive content distribution platform.

Douyin is not only an entertainment and social platform but also an e-commerce and marketing platform. Douyin uses advantages such as a large user base, rich content forms, efficient recommendation mechanisms, and convenient shopping entrances to create a live-streaming e-commerce ecosystem that allows brands, merchants, influencers, and consumers to connect seamlessly and interact.

Douyin live streaming e-commerce has the following characteristics:

Brand self-broadcasting: Brands can use their own official accounts to conduct live broadcasts, display the functions, advantages, usage scenarios, etc., of the products, and provide coupons, gifts, raffles, and other activities to attract consumers' attention and interest. Brand self-broadcasting can improve brand awareness, trust, and loyalty and increase consumers' perceived value and purchase intention of the products.

Influencer marketing: Influencers are users who have a large number of fans and influence on Douyin. They usually have their characteristics and styles and can attract different types and needs of consumers. Influencers can cooperate with brands or merchants to conduct live broadcastseyy like or have tried to consumers, recommend products they like or have tried to consumers, and share their

use experience and evaluation. Influencer marketing can use influencers' popularity, professionalism and affinity to influence consumers' purchase decisions.

User participation: Ordinary users watch live streaming or buy products on Douyin. In the live broadcast room, they can interact with the host or other users in real-time through functions such as bullet screens, comments, likes, etc., and express their opinions or questions. User participation can increase users' interest and trust in the live broadcast content and products and promote social identity and social support among users.

4. Analysis on the Problem

4.1. Product Quality

The quality of the products is uneven. Due to the influx of a large number of small and medium-sized businesses and amateur live streamers on the Douyin platform, they often lack professional product quality inspection and after-sales service, resulting in some products having quality issues, inconsistency with the description, difficulty in returning or exchanging goods, etc., which bring consumers a bad shopping experience and a crisis of trust.

Product quality inconsistency can affect the customer's purchase intention and satisfaction. According to a survey conducted by Chen and Li, product quality inconsistency is one of the main reasons customers are dissatisfied with their live live-streaming e-commerce purchases. It also reduces their willingness to buy again or recommend to others [11]. Customers who buy products from live-streaming e-commerce expect to receive the same or better-quality products as they see on the live-stream demonstration, but when they encounter product quality inconsistency, they feel cheated, disappointed, or angry. They may lose trust and confidence in the live streamer, the merchant, or the platform.

Product quality inconsistency can result from various factors in the live stream demonstration and the product supply chain. Chen and Li identify three main causes of product quality inconsistency: information distortion, quality variation, and expectation gap [11]. Information distortion refers to the use of exaggerated or misleading expressions, special effects, or props by the live streamer or the merchant to enhance the attractiveness or persuasiveness of the product. Quality variation refers to the lack of quality control, inspection, or supervision by the live streamer, the merchant, the supplier, or the intermediary in the product supply chain, which may lead to product defects, damages, or substitutions. The expectation gap refers to the difference between the customer's perception and evaluation of the product based on the live stream demonstration and the actual delivery, which may be influenced by the customer's subjective judgments, cognitive biases, or external factors.

Product quality inconsistency can be solved by improving information quality and transparency, enhancing quality control and traceability, and providing more accurate and comprehensive product information and evaluation in live streaming e-commerce. Chen and Li propose technical and managerial solutions to address the problem of product quality inconsistency [11]. Technical solutions include using high-definition cameras, real-time feedback systems, or third-party verification platforms to improve the information quality and transparency of live stream demonstration; using smart tags, blockchain technology, or artificial intelligence to enhance the quality control and traceability of product supply chain; using big data analysis, customer reviews, or social media platforms to provide more accurate and comprehensive product information and evaluation for customer perception. Managerial solutions include establishing clear and explicit contracts and agreements among live streamers, merchants, suppliers, and intermediaries regarding product quality standards and responsibilities; implementing effective quality supervision and inspection mechanisms for the product supply chain; offering timely and satisfactory after-sales service and dispute resolution for customer complaints.

4.2. Content Homogeneity

The content of live streaming is highly homogenized. Due to the fierce competition and traffic distribution mechanism on the Douyin platform, some live streamers ignore content innovation and differentiation to pursue popularity and sales, resulting in live streaming content that is repetitive, imitative, or vulgar, reducing the user's watching interest and participation.

Some live streamers copy or imitate other popular or successful live streamers' content, style, or format without adding originality or creativity [11]. For example, some live streamers use the same catchphrases, gestures, or expressions as Li Jiaqi, a famous live streamer who sells cosmetics; some live streamers use the same background music, editing techniques, or special effects as Luo Yonghao, a famous live streamer who sells electronic products.

Some live streamers rely on sensationalism or vulgarity to attract attention or create controversy without considering the quality or value of their content [12]. For example, some live streamers use exaggerated or misleading titles, thumbnails, or descriptions to lure viewers; others use obscene or violent language, images, or actions to provoke reactions.

Some live streamers repeat or recycle the same content, product, or topic repeatedly without providing variety or diversity [13]. For example, some live streamers sell the same product or category of products every time they go live; some live streamers talk about the same topic or issue every time they go live.

These phenomena reduce the user's watching interest and participation, making the live-streaming content boring, predictable, or offensive. They also damage the user's trust and loyalty, making the live-streaming content unreliable, unprofessional, or unethical.

4.3. De-Regulate

Live-streaming regulation is insufficient and inadequate. Because live-streaming marketing on the Douyin platform involves the rights and responsibilities of multiple parties, such as live streamers, merchants, suppliers, intermediaries, platform operators, regulators, and customers, it requires clear and explicit legal norms and industry standards to regulate and supervise. However, currently, live-streaming marketing on the Douyin platform still has some legal loopholes and regulatory blind spots, which lead to some live streamers engaging in illegal or unethical behaviors, such as false advertising, price fraud, infringement, or piracy, which harm the legitimate rights and interests of consumers and the social order and morality.

False advertising is a common problem in live-streaming marketing. Some live streamers use exaggerated or misleading expressions, special effects, or props to enhance the attractiveness or persuasiveness of their products through live streaming. They may also make false or unverified claims about the product's origin, quality, function, effect, or certification. For example, some live streamers claim that their products are imported from abroad, have national quality certification, or have celebrity endorsement without proof or evidence [14]. These behaviors deceive or mislead consumers and violate the Advertising Law of China.

Price fraud is another problem in live-streaming marketing. Some live streamers use various tricks or tactics to manipulate the price of their products through live streaming. They may also cheat or coerce consumers into buying their products at unfair or unreasonable prices. For example, some live streamers use fake discounts, limited-time offers, or false scarcity to create a sense of urgency or panic among consumers; some live streamers use fake orders, reviews, or ratings to create a sense of popularity or social proof among consumers; some live streamers use fake prizes, gifts, or rewards to lure or entice consumers [15]. These behaviors infringe on or exploit consumers and violate the Price Law of China.

Infringement or piracy is yet another problem in live-streaming marketing. Some live streamers sell counterfeit or pirated products through live streaming. They may also infringe or violate the intellectual property rights or personal rights of others. For example, some live streamers sell fake or knock-off products that imitate the trademarks, designs, or packaging of well-known brands; some live streamers sell unauthorized or illegal copies of books, music, movies, or games; some live

streamers use the names, images, or voices of celebrities without their consent [16]. These behaviors damage or undermine the interests and reputation of the original creators or owners and violate the Intellectual Property Law of China.

5. Suggestions

5.1. Use AI and QA to Improve Quality

Product quality inconsistency can affect customer satisfaction and trust and damage the reputation and credibility of the platform and the live streamers. Therefore, the platform and the live streamers should adopt technical and managerial solutions to ensure the quality of the products sold through live streaming.

On the technical side, the platform can use artificial intelligence (AI) to monitor and evaluate the product quality and performance of the live streamers and provide feedback and incentives accordingly. For instance, the platform can use AI to analyze product images, videos, reviews, and ratings and compare them with the live streamers' product descriptions, features, and specifications. Based on the AI analysis, the platform can give suggestions and recommendations to the live streamers on how to improve their product quality and performance and reward or punish them based on their compliance.

On the managerial side, the platform can establish a quality assurance system that includes product testing, certification, labeling, and traceability and enforce strict rules and penalties for quality violations. For example, the platform can require the live streamers to submit their products for testing and certification by a third-party agency before they can sell them through live streaming. The platform can also require the live streamers to label their products with clear and accurate information about their origin, ingredients, expiration date, etc. The platform can also impose fines, suspensions, or bans on live streamers who violate quality standards or regulations.

On the other hand, live streamers should be more transparent and honest about the product information and features and avoid exaggerating or misleading the customers. For example, they should not make false or exaggerated claims about their products' benefits, effects, or results. They should also not use deceptive or manipulative techniques to convince customers to buy their products. They should disclose any potential risks or side effects of their products, select reliable suppliers and partners, and conduct regular quality checks and audits on their products. They should also respond to customer feedback and complaints promptly and professionally and offer refunds or exchanges if necessary.

5.2. Focus on Innovation and Differentiation to Enhance Experience

Content homogeneity could reduce the user's watching interest and participation and damage the user's trust and loyalty. The live streamers should focus on content innovation and differentiation and create more diverse, engaging, and personalized live-streaming content for their customers.

First, the live streamers should improve their information quality and transparency and provide more accurate and comprehensive product information and evaluation for customer perception. For instance, they should not only introduce the product features and functions but also demonstrate the product usage and effects, compare the product advantages and disadvantages with other similar products, and share their honest opinions and experiences with the product. They must answer the customer's questions and concerns promptly and professionally and provide relevant data or evidence to support their claims.

Second, live streamers can use artificial intelligence (AI) to analyze customer preferences and behavior, and tailor their content accordingly. For example, they can use AI to segment their customers into different groups based on their demographics, interests, needs, or purchase history and customize their content to suit each group's characteristics and expectations. Moreover, live streamers should explore new topics, formats, styles, and scenarios for their live-streaming content and incorporate entertainment, education, interaction, or social responsibility elements. For instance, they

can use tutorials, tips, reviews, or case studies to make their content more informative and useful. What's more, using live chat, polls, surveys, or feedback can also be useful to make their content more interactive and engaging.

Finally, live streamers should avoid copying, sensationalism, or repetition and respect the intellectual property rights and cultural values of others. For example, they should not plagiarize or imitate other live streamers' content without proper credit or permission and should not use exaggerated or false statements to attract attention or induce purchase. Repeating the same or similar content repeatedly without adding any value or novelty should be avoided.

5.3. Establish Laws and Standards to Regulate Behavior

Live-streaming regulation is important to ensure the legality, ethics, and quality of live-streaming e-commerce and to protect the interests and welfare of the platform, the live streamers, and the customers. Therefore, the government, the platform, and the live streamers should work together to establish a clear and explicit legal framework and industry standard for live-streaming marketing on the Douyin platform.

The government can issue laws and regulations that define the rights and responsibilities of the platform, the live streamers, and the customers and set up a supervision mechanism that involves multiple departments and agencies. For example, the government can specify the platform's qualifications, obligations, and liabilities, such as requiring the platform to register as an e-commerce operator, obtain relevant licenses and permits, pay taxes and fees, disclose information and data, cooperate with investigations and inspections, etc. The government can also specify the rights and duties of the live streamers, such as requiring them to obtain authorization or certification from the platform, comply with quality standards and regulations, respect intellectual property rights and consumer rights, bear legal consequences for their actions, etc.

The platform can implement a self-regulation system that includes a code of conduct, a rating system, a complaint mechanism, and a reward and punishment system for the live streamers. For example, the platform can establish a code of conduct that outlines the principles and values that guide the live streamers' behavior, such as honesty, integrity, professionalism, responsibility, etc.

The live streamers can abide by the laws and regulations issued by the government and the rules and norms set by the platform. They should refrain from engaging in illegal or unethical behaviors that deceive, infringe, or exploit customers. They should also respect the cultural values and social morals of different groups and individuals and avoid offending or disrespecting anyone based on race, gender, religion, or other attributes. They should not sell fake or substandard products, use false or misleading advertising, or infringe on intellectual property rights or personal information.

6. Conclusion

This paper has analyzed the problems and challenges of live-streaming e-commerce on the Douyin platform, a popular video-sharing and social media platform in China. It focused on three main aspects: product quality inconsistency, content homogeneity, and live-streaming regulation. It has also suggested strategies to address these problems and challenges, such as using artificial intelligence and quality assurance systems to improve product quality, focusing on content innovation and differentiation to enhance user experience, and establishing legal frameworks and industry standards to regulate live-streaming e-commerce behavior.

The research significance of this paper lies in its contribution to the understanding and development of live-streaming e-commerce, a new and emerging form of online shopping that combines live video, social media, and e-commerce. Live-streaming e-commerce has become a popular and profitable business model in China, especially on the Douyin platform, which has over 600 million daily active users. By identifying and solving the problems and challenges of live-streaming e-commerce on the Douyin platform, this paper can help the platform, the live streamers, and the customers achieve better outcomes and benefits from this new mode of consumption.

However, this paper also has some limitations that need to be acknowledged and addressed in future studies. One of the main limitations is the lack of primary data from the actual participants of live-streaming e-commerce on the Douyin platform. This paper mainly relies on secondary data from existing sources, which may not reflect the current situation and opinions of the platform, the live streamers, and the customers. Therefore, future studies can use more direct and interactive methods, such as surveys, interviews, or experiments, to collect primary data from the stakeholders of live-streaming e-commerce on the Douyin platform. This can help to obtain more accurate, reliable, and comprehensive information and insights about the problems and challenges of live-streaming e-commerce on the Douyin platform.

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