

A Reflective Study on the Value of Multi-Dimensional Electronic Word-of-Mouth Online Reviews in Social E-Commerce——A Case Study of Pinduoduo

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Abstract: Continuous innovation in digital consumption models has restructured the operational paradigms of contemporary social commerce, bringing fundamental changes to online information diffusion and consumer decision-making patterns. Unlike traditional e-commerce that relies on static commodity displays and merchant-led promotion, social commerce leverages interpersonal social relationships to achieve content dissemination and user conversion, making user-generated electronic word-of-mouth (eWOM) a core, credible reference for shoppers to judge product quality and evade transaction risks in virtual shopping scenarios^[12]. As a representative social commerce platform thriving in China's low-tier sinking markets, Pinduoduo has developed a distinctive multi-dimensional review system distinguished from the single scoring mechanism of conventional e-commerce platforms. Its evaluation ecosystem covers five indispensable dimensions: users' subjective emotional attitudes, detailed textual experiential descriptions, intuitive audiovisual evidence, delayed long-term supplementary comments, and interactive social feedback behaviors^{[4][5][8]}. Based on three classic academic theories, namely Information Diagnosticity Theory, Social Proof Theory, and Hofstede's cross-cultural dimension theory^{[9][10][11]}, this paper adopts a targeted conceptual analysis approach centered on Pinduoduo's unique market positioning and operational characteristics. The research systematically explores the diverse practical values embodied by multi-dimensional user reviews, including bridging information gaps in virtual transactions, matching the psychological traits of local consumers, building interactive consumption communication channels, and supporting the sustainable development of the social commerce industry. This study also comprehensively sorts out the realistic bottlenecks constraining the healthy operation of the platform's current eWOM ecology. The analytical results verify that multi-dimensional review mechanisms go far beyond basic product scoring functions. On one hand, such authentic user-generated content effectively mitigates the information asymmetry dilemma prevalent in online shopping scenarios^[2]; on the other hand, it builds an open interactive carrier for consumers to share real shopping experiences and genuine product perceptions^[1]. Rooted in China's typical collectivist cultural context and local consumers' strong awareness of uncertainty avoidance^[10], domestic online shoppers are accustomed to referring to comprehensive, publicly recognized multi-dimensional review information to support their purchase decisions^[9]. Nevertheless, excessive commercial profit-seeking and platform algorithm traffic bias have induced prevalent false reviews and eWOM distortion phenomena, severely undermining the practical reference value of user evaluations^[8]. On this basis, this paper summarizes the core theoretical contributions and industrial practical significance of the research, clarifies the inherent limitations of pure speculative analysis, and proposes targeted directions for subsequent in-depth research. The research outcomes aim to provide practical theoretical references for optimizing social commerce eWOM ecological construction and promoting the standardized and high-quality development of

the industry.

Keywords: Social E-commerce; Pinduoduo; Multi-dimensional Online Reviews; Electronic Word-of-Mouth; Consumption Culture

Published: Sep 22, 2026

DOI: <https://doi.org/10.62177/chst.v3i3.1692>

1. Introduction

The large-scale penetration of mobile internet technology has accelerated the deep integration of digital economy and residents' daily consumption, driving the sustained expansion of China's online shopping market and consolidating e-commerce's dominant position in modern consumption scenarios. Substantial operational differences exist between social commerce and traditional shelf-based e-commerce. In conventional e-commerce ecosystems, merchants fully control commodity information release and marketing promotion resources, while social commerce creates an innovative business model by integrating offline acquaintance social connections, user-generated content and online purchasing behaviors. It realizes low-cost user growth through social fission dissemination, forming unique competitive advantages in the current e-commerce market^[1]. According to the 56th Statistical Report on Internet Development in China released by CNNIC, the scale of domestic online shopping users maintains steady growth, with newly added users mainly concentrated in low-tier cities and rural sinking markets, which have become the core competitive territory for major e-commerce platforms. As a typical localized social commerce brand, Pinduoduo has captured considerable sinking market shares relying on lightweight group-buying and social sharing mechanisms. Its rapid market expansion has profoundly reshaped the online consumption modes and daily shopping habits of grassroots consumers across China^[3].

Virtual transaction attributes inherently lead to information asymmetry between online buyers and sellers, which is a core pain point restricting rational consumer decision-making. Consumers cannot conduct physical inspection and quality verification of commodities before placing orders, and their cognition of product performance mainly depends on merchant-released pictures and short videos. To improve transaction conversion rates, most merchants will optimize commodity display content in a targeted manner and deliberately conceal potential quality defects. This phenomenon is particularly prominent in low-priced mass commodities, which often suffer from inconsistent parameter descriptions and exaggerated efficacy publicity^[2]. In such information-ambiguous shopping environments, authentic evaluation content released by verified purchasers can truly restore real product usage effects, compensate for the one-sidedness of merchant promotional information, and help consumers reduce decision-making risks and accurately judge product cost performance^[12]. Compared with comprehensive e-commerce platforms such as Taobao and JD.com, Pinduoduo's review system features more prominent social interaction attributes. Beyond basic text comments and star scoring functions, the platform supports users to upload original real photos and usage videos, and allows delayed supplementary evaluations after long-term product use^{[5][6][7]}. Potential buyers can screen high-value evaluation content through likes and helpful tags set by the platform^[8]. Meanwhile, the platform algorithm dynamically adjusts the display weight of reviews based on user interactive data, ultimately forming a multi-dimensional eWOM communication system that organically integrates social interaction functions and practical decision-making reference value.

Domestic academic circles have accumulated rich research achievements in the field of online word-of-mouth, and most existing studies take review scores, review volume and other single indicators as core research objects to explore their influence on consumer decision-making and product sales performance^[4]. However, current research systems still have obvious deficiencies and research gaps worthy of further supplementation. First, most existing empirical conclusions are summarized based on Western traditional e-commerce scenarios^{[11][12]}, while targeted systematic theoretical research focusing on localized social commerce platforms represented by Pinduoduo is insufficient. Different from Western e-commerce models, Pinduoduo's core competitiveness originates from social fission dissemination and sinking market layout, which lacks targeted theoretical sorting and empirical verification^[3]. Second, prior studies mostly explore the independent influence of single review indicators in isolation^{[4][5]}, ignoring the interactive coordination and joint action of multiple evaluation dimensions. There is a lack of unified analytical frameworks that integrate emotional tendencies, textual details, audiovisual

materials, supplementary comments and social feedback, resulting in fragmented research perspectives. Third, although several studies have confirmed the regulatory effect of cultural factors on consumer shopping behaviors, most discussions remain at the macro theoretical level^[10]. Few studies combine the unique functional characteristics of social commerce (such as delayed supplementary reviews and real-time interactive feedback) with localized consumer cultural psychology, failing to form targeted and localized research conclusions.

To fill the above research gaps, this study carries out systematic conceptual analysis based on Pinduoduo's actual operational status and unique review ecological characteristics. By integrating five core dimensions of user online reviews, this research attempts to supplement and improve the existing theoretical system of social commerce eWOM research. Different from mainstream quantitative research methods such as questionnaire surveys and data empirical tests adopted in most previous studies, this paper adopts literature sorting and real platform scenario observation methods to summarize the internal value mechanism, practical operation dilemmas and formation causes of multi-dimensional reviews. Furthermore, the research clarifies the theoretical innovation points and industrial practical value of the study, objectively expounds the limitations of pure speculative analysis, and puts forward feasible optimization directions for subsequent follow-up research. The research conclusions can effectively enrich the localized research system of social commerce word-of-mouth and provide new perspectives for subsequent related academic exploration.

2. Theoretical Background and Concept Definition

2.1 Electronic Word-of-Mouth and Multi-dimensional Online Reviews

Electronic word-of-mouth (eWOM) is the digital evolution of traditional offline interpersonal word-of-mouth communication in the internet era, serving as high-value user-generated content with strong reference significance in e-commerce scenarios. Specifically, it refers to all subjective evaluation information voluntarily released by consumers after completing online transactions, covering personal consumption experience perceptions, product advantage and defect analysis, and practical usage feedback^[1]. Compared with offline word-of-mouth communication limited by time and space, online eWOM breaks geographical and temporal restrictions, featuring permanent information retention, cross-region dissemination, diverse expression forms and two-way user interaction. Such open and shareable user evaluation content can be accessed and referenced by massive unfamiliar consumers, exerting direct and profound guiding effects on public online shopping decision-making behaviors^[12].

Online reviews are the most intuitive and core carrier of eWOM information. Combined with Pinduoduo's unique operational rules and real review ecological environment, this study defines the multi-dimensional online review system investigated in the research as five interrelated core components. The first component is user emotional tendency, which refers to positive, negative or neutral subjective attitudes formed by consumers after complete product experience, representing the most basic emotional orientation of eWOM information. The second component is textual narration, including overall generalized evaluation content and detailed experiential descriptions, which objectively reflect users' intuitive perceptions of product materials, functional performance, application scenarios and quality defects^[4]. The third component is audiovisual materials, including real photos and usage short videos taken by buyers in real consumption scenarios. Such intuitive visual content can restore the real state of commodities, eliminate cognitive deviation caused by merchant image beautification, and make up for the insufficient intuitiveness of pure text descriptions^[5]. The fourth component is long-term supplementary reviews. Different from instant comments submitted immediately after purchase, delayed supplementary evaluations can truly reflect long-term product usage effects, durability performance and after-sales service quality, possessing higher long-term decision-making reference value^{[6][7]}. The fifth component is social feedback information, including user likes, helpful tags and algorithm-generated review rankings, which reflect public recognition of individual evaluation content and serve as effective group consumption reference signals for potential buyers^[8].

The five above-mentioned review dimensions complement and interact with each other, jointly building a complete eWOM information service system suitable for social commerce scenarios. Single-dimensional evaluation content has obvious inherent limitations, as it cannot fully and objectively reflect the comprehensive quality of commodities. Only the coordinated operation and complementary superposition of multiple evaluation dimensions can provide consumers with multi-angle,

comprehensive and reliable decision-making references. This systematic and three-dimensional evaluation mechanism constitutes the core competitive advantage of Pinduoduo's review system, which is obviously superior to the simplistic single scoring evaluation mode adopted by traditional e-commerce platforms.

2.2 Core Theoretical Foundations

Information Diagnosticity Theory provides solid theoretical support for analyzing the information value of multi-dimensional reviews in this research. The core viewpoint of the theory is that the practical value of information lies in its ability to help users distinguish quality differences, eliminate cognitive ambiguity and support rational decision-making^[11]. In online shopping scenarios, detailed textual descriptions, original audiovisual materials and long-term supplementary reviews can significantly improve the information diagnosticity of eWOM content, enabling consumers to accurately identify real commodity quality and avoid potential shopping risks. In contrast, empty and templated five-star praise comments lack effective information discrimination capability, cannot provide substantive decision-making support for consumers, and thus have extremely limited practical reference value^[4].

Social Proof Theory reasonably explains the functional mechanism of interactive feedback elements in online review systems. Online shopping is inherently accompanied by information uncertainty, making it difficult for consumers to fully grasp commodity parameters and practical usage effects before purchase. Faced with insufficient effective information and decision-making hesitation, most consumers will refer to other users' real shopping experiences and evaluation attitudes, taking group public opinions as important basis for their own purchase decisions^[9]. The like and helpful functions in Pinduoduo's review area convert scattered individual evaluation content into visualized group recognition data, intuitively reflecting the credibility and practical reference value of single reviews, and profoundly affecting users' information screening and final decision-making behaviors. This group reference mechanism is particularly prominent in social commerce scenarios that emphasize social interaction and word-of-mouth fission dissemination^[8].

Hofstede's Cultural Dimensions Theory provides a localized analytical perspective for interpreting Chinese consumers' acceptance, screening and utilization of eWOM information. Influenced by traditional cultural accumulation, Chinese consumers present typical collectivist consumption traits, tending to attach importance to peer consumption experiences and group evaluation trends when making purchase decisions. Meanwhile, local users generally have strong uncertainty avoidance awareness. When facing unknown online shopping risks and information gaps, they will actively collect diversified and comprehensive reference information to minimize decision-making risks^[10]. The superposition of these two localized cultural psychologies shapes Chinese consumers' unique dependence on online word-of-mouth information, and further regulates their behavioral habits in screening and adopting review content in social commerce scenarios.

3. Multiple Values and Practical Dilemmas of Pinduoduo's Multi-dimensional Online Reviews

3.1 Multiple Values of Multi-dimensional Online Reviews

3.1.1 Information Value: Alleviating Information Asymmetry and Improving eWOM Diagnosticity

Pinduoduo's product portfolio is dominated by low-priced daily necessities and affordable consumer goods. To boost click rates and transaction volumes, most merchant detail pages prioritize displaying product advantages while deliberately concealing potential defects and quality risks. Such one-sided information disclosure further exacerbates buyer-seller information asymmetry in online transactions^[2]. In contrast, multi-dimensional user reviews stem from real consumption and usage experiences, completely independent of commercial marketing purposes. These user-generated contents effectively complement and balance unilateral merchant promotional information, restoring the real quality and practical usage status of commodities to the maximum extent^[3].

Simple star ratings can only provide generalized product evaluations without detailed supporting information, resulting in limited information diagnosticity that fails to help consumers pinpoint specific quality problems and experiential deficiencies. Each dimension of multi-dimensional reviews carries unique information supplementary functions, jointly forming a complete information support system for consumer decision-making. Detailed review texts elaborate product workmanship, material characteristics, practical application scenarios, and real usage feelings to enrich product information dimensions^[4].

Original photos and short videos eliminate visual cognitive bias caused by merchant image beautification and truly restore commodity physical conditions^[5]. Supplementary reviews break the limitations of short-term unpacking experiences, focusing on long-term product performance, durability, functional faults, and after-sales service quality to make up for the timeliness defects of instant comments^[6]. Neutral and negative evaluations objectively expose product deficiencies and service loopholes, breaking the information homogenization caused by overwhelming positive reviews. User likes and helpful tags enable shoppers to efficiently screen high-value content from massive review data and reduce information search costs^[8].

The coordinated operation of multiple review elements builds a comprehensive information reference system, helping consumers break free from reliance on merchant marketing propaganda and perceive commodity quality from multiple dimensions, thereby reducing mispurchase risks caused by insufficient information. Based on the five core attributes of multi-dimensional reviews defined in this study, this paper selects Pinduoduo's best-selling affordable health teas (including dampness-removing tea and jujube longan tea) as typical research cases to intuitively demonstrate the practical value of each review dimension in sinking market health consumption scenarios^[3]. First, review emotional tendency (emotional attribute) reflects users' overall positive, negative or neutral attitudes formed from complete drinking experiences, directly indicating comprehensive product quality and usage performance^[4]. The evaluation emotions of Pinduoduo's affordable health teas show obvious differentiation. High-quality, well-crafted products gain dominant positive reviews, with users frequently mentioning comfortable taste, convenient brewing, and suitability for daily health maintenance. On the contrary, numerous low-quality and crudely processed health teas accumulate massive negative feedback, where consumers report no obvious conditioning effects after long-term consumption, and even adverse physical reactions such as gastrointestinal discomfort and diarrhea, exposing merchants' false efficacy promotion. A large number of neutral reviews objectively state that such products have mild taste without side effects but lack prominent health-preserving effects, merely serving as daily drinking substitutes. Differentiated emotional evaluations effectively distinguish quality gaps among homogeneous health tea products and provide basic judgment standards for consumer screening. Second, textual narration (detailed descriptive attribute) allows users to output refined, scenario-based experiential descriptions, making up for the generalized information deficiencies of merchant promotional content^[4]. Official product pages adopt homogeneous marketing slogans regarding health conditioning effects without detailed practical verification. In comparison, user-generated textual content is more authentic and referential. For popular dampness-removing health teas on Pinduoduo, consumers record detailed information covering ingredient composition, tea soup color, taste experience, daily drinking frequency, and physical changes after long-term use. Positive descriptions of clean ingredients, clear tea soup and mild taste fully demonstrate product advantages. Meanwhile, users accurately point out practical defects such as excessive broken tea residues, rough raw materials, and insignificant dampness-removing effects after persistent consumption. These authentic and detailed descriptions break merchants' exaggerated efficacy publicity and fill the information gaps in official product introductions. Third, audio-visual materials (visual empirical attribute) enable users to restore real commodity conditions through original images and short videos, completely eliminating cognitive deviation caused by merchant-filtered promotional pictures^[5]. As edible health products, health teas require strict consumer attention to raw material cleanliness, packaging tightness and brewing quality, making user real-shot content more credible than merchant promotional materials. For high-quality products, users capture complete unopened packages, detailed packaging structures, raw material conditions before and after brewing, and clear tea soup to verify superior product quality. For inferior products, user audiovisual content intuitively displays deteriorated raw materials, material agglomeration, excessive impurities, and turbid, precipitated tea soup after brewing. These non-falsifiable original materials allow consumers to quickly distinguish product quality with strong empirical persuasion. Fourth, long-term supplementary reviews (long-term timeliness attribute) overcome the limitations of instant post-purchase evaluations, objectively reflecting the long-term quality and practical conditioning efficacy of health tea products^{[6][7]}. The health-regulating effects of herbal teas have obvious hysteresis characteristics. Short-term unpacking evaluations can only judge product appearance, packaging and immediate taste, failing to verify long-term practical efficacy. Supplementary reviews effectively compensate for this deficiency. Most users release general evaluations immediately after receiving goods and supplement detailed long-term usage feedback after one to two months of continuous drinking. Many users objectively record that long-term consumption brings no

obvious improvement in physical sub-health status, proving that the products are merely ordinary substitute teas without the advertised medicinal health-preserving efficacy, while some users recognize their mild taste for daily hydration despite limited conditioning effects. Such long-term evaluations effectively expose merchants' exaggerated marketing strategies and provide reliable long-term consumption references for potential buyers. Fifth, user social feedback (group endorsement attribute) builds a public recognition screening mechanism through likes and helpful tags, amplifying the reference value of authentic high-quality reviews^[8]. On the product pages of Pinduoduo's high-volume health teas, detailed and authentic reviews with textual descriptions, original audiovisual materials and long-term usage experience generally receive massive user recognition and algorithm priority display, becoming core decision-making bases for most consumers. In contrast, empty templated five-star comments rarely gain user interaction and public trust. Notably, authentic negative reviews exposing inferior raw materials and false efficacy, though highly valuable for risk warning, are easily submerged by massive flooded reviews due to low interaction volume, failing to exert effective reminder functions and reflecting inherent defects in the platform's social feedback mechanism. In summary, Pinduoduo's health tea review ecology fully demonstrates the differentiated value of five core review dimensions. Single-dimensional evaluations have inevitable information defects, and homogeneous empty positive reviews cannot support effective consumer decision-making. Only the collaborative effect of emotional attitudes, detailed texts, real audiovisual materials, long-term supplementary reviews and group feedback can maximize the information diagnosticity of eWOM content and provide comprehensive, authentic and reliable shopping references for consumers.

3.1.2 Psychological Value: Adapting to Local Consumption Psychology and Regulating Decision-Making Risk Perception

From the perspective of localized consumption culture, the collectivist cultural background endows Chinese consumers with obvious conformity tendencies in online shopping decisions, making them inclined to refer to other users' real consumption experiences and group evaluation trends^[10]. Pinduoduo's core user groups are mainly distributed in sinking markets, with relatively insufficient online shopping experience, higher dependence on platform eWOM information, and stronger susceptibility to group consumption public opinion. As intuitive embodiments of group consumption attitudes, highly recognized reviews are more likely to be adopted by potential consumers and serve as core foundations for their purchase decisions^[9].

Meanwhile, local consumers generally exhibit prominent uncertainty avoidance psychology. The virtuality of online shopping triggers persistent concerns about product-promotion inconsistency, inferior quality and inadequate after-sales services, driving consumers to actively collect diversified effective information to reduce decision-making uncertainty^[10]. Simple star rating systems cannot meet consumers' refined information demands, while the multi-dimensional review system provides multi-angle, comprehensive reference clues. Detailed textual content supplements product attribute details, real-shot audiovisual materials provide intuitive sensory evidence, supplementary reviews enrich long-term usage information, and positive and negative evaluations respectively reflect product advantages and potential consumption risks. The superposition of multi-dimensional information alleviates consumers' decision-making anxiety, assists rational risk assessment, and gradually builds online consumption trust^[7].

In terms of psychological mechanisms, different review dimensions correspond to differentiated cognitive links in consumers' decision-making processes and affect purchase judgments step by step. Text information helps users establish basic product cognition, real-shot visual materials strengthen perceptions of product authenticity, long-term supplementary reviews make up for temporal deficiencies in experiential information, and group interactive feedback consolidates users' cognitive judgments. Ultimately, these multi-dimensional elements jointly form a complete consumption psychological chain covering information browsing, risk judgment and trust establishment.

3.1.3 Communication Value: Constructing a Two-Way Interactive UGC Communication Field

Pinduoduo's review area is not a marginal auxiliary module of the platform, but an open public communication field for consumers to independently generate content, exchange consumption experiences and share shopping insights^[1]. In traditional e-commerce operation modes, merchants fully dominate commodity information release and marketing dissemination, while consumers can only passively accept promotional information without independent content output and discourse power. The

construction of a multi-dimensional review system transfers partial information communication discourse power to ordinary users, thoroughly restructuring the platform's original information dissemination pattern.

Verified buyers actively share real shopping experiences, product advantages and consumption pitfalls in review areas based on personal practical experience, producing diversified user-generated content. Potential consumers screen review information for decision support and complete secondary information interaction through likes and helpful tags. This complete interactive process builds a two-way information communication link between existing buyers and potential purchasers, realizing efficient sharing and dissemination of public consumption experience. Authentic positive reviews spread high-quality product usage experiences and help superior commodities gain wider user recognition; objective negative evaluations perform public risk warning functions and prevent inferior products from misleading mass consumption^[2]. In this interactive communication mode, consumers transform from passive marketing audiences into core producers and disseminators of commodity information, which constitutes the essential communication difference between social commerce and traditional shelf e-commerce.

3.1.4 Industrial Value: Promoting Coordinated Development of Consumers, Merchants and Platforms

From the perspective of long-term industrial development, a standardized and complete multi-dimensional eWOM ecosystem can realize tripartite win-win development for consumers, merchants and platforms, and promote the high-quality and sustainable progress of the social commerce industry. For consumers, multi-dimensional eWOM content serves as a free and efficient decision-making tool, effectively reducing information search costs, avoiding blind consumption and economic losses, and optimizing overall online shopping experience^[3]. For settled platform merchants, high-quality multi-dimensional reviews act as valuable intangible assets. Evaluations with detailed textual descriptions and original audiovisual materials can enhance commodity credibility and boost transaction conversion rates^[4]. Meanwhile, merchants can accurately identify deficiencies in product workmanship, packaging design and after-sales services based on user negative feedback and long-term supplementary reviews, obtaining practical optimization directions for product iteration and service upgrading^[6].

For the Pinduoduo platform, a high-quality eWOM ecosystem improves overall platform credibility and enhances user stickiness and retention capacity. Massive authentic UGC review data also provides effective supervision clues for the platform to identify inferior merchants, standardize store operational behaviors and improve industrial governance systems^[2]. Nevertheless, in practical operation, some merchants adopt short-term speculative behaviors such as comment brushing, fake audiovisual material production and interactive data manipulation to disrupt the benign review ecology. Such behaviors undermine the authenticity and credibility of eWOM information, increase platform governance difficulties, and restrict the long-term healthy development of the social commerce industry.

3.2 Practical Dilemmas of Multi-dimensional Review Ecology

Driven by traffic-oriented commercial interests, Pinduoduo's originally benign multi-dimensional review system has exposed various operational dilemmas and defects. From the perspectives of Information Diagnosticity Theory and Social Proof Theory, prevalent eWOM anomalies significantly weaken the practical reference value of user evaluations and overall platform credibility. To elevate commodity star ratings and page exposure volume, numerous merchants induce consumers to release templated five-star positive comments through coupons, physical gifts and cash red envelope rebates. Some unscrupulous merchants even batch produce fake photos and short videos to generate massive false reviews unrelated to real consumption scenarios^[8]. Such homogeneous and empty fake evaluations lack effective information diagnosticity and cannot reflect true product quality and usage experience. Meanwhile, interactive indicators including likes and helpful tags can be artificially brushed, fabricating false high-reputation product trends to mislead consumers.

The platform's algorithm mechanism has obvious traffic bias. After algorithm weighting, massive fake high-praise reviews gain priority display rights, while authentic, detailed and objective high-quality reviews from real users are submerged in flooded content and difficult for consumers to access. The artificially fabricated group eWOM signals seriously mislead sinking market users with collectivist consumption tendencies and easily trigger irrational purchase behaviors^[10]. In addition, the platform suffers from unbalanced review dimension distribution. Most commodity pages are dominated by instant five-star comments, while in-depth detailed textual evaluations, authentic original audiovisual materials and long-

term supplementary reviews account for a relatively low proportion^[7]. Some video evaluations are not user-generated but uniformly uploaded by merchants with universal network materials, failing to reflect real product usage status and resulting in insufficient supply of high-value, long-term effective eWOM information.

Furthermore, the platform's review sorting algorithm over-reliance on interactive data such as likes and helpful tags leads to a prominent Matthew effect. Fake reviews with high artificial interaction volume continuously obtain algorithmic traffic preference, while newly released authentic and objective high-quality evaluations lack exposure opportunities, resulting in the burial of a large number of highly diagnostic eWOM resources. The eWOM chaos prevailing in Pinduoduo's high-sales health tea products fully verifies this industrial defect. The review areas of popular health tea commodities suffer from severe eWOM distortion. Massive graphic and video evaluations are highly homogeneous, which are templated positive comments induced by merchant petty favors, with fixed stereotyped descriptions of good taste, high cost performance and excellent conditioning effects, failing to reflect real raw material quality, taste experience and health-preserving efficacy. On the contrary, objective neutral and negative evaluations reflecting rough raw materials, bland taste and insignificant health effects are completely covered by false high-praise content due to low interactive data, making it hard for potential consumers to screen out real product information. The huge review volume of hot-selling commodities mixes authentic high-quality content with flooded fake reviews, easily causing user information overload and greatly increasing consumers' information screening costs. The unbalanced incentive mechanism between platforms and merchants further exacerbates the proliferation of templated positive reviews and the scarcity of authentic long-term eWOM content, continuously damaging the information compensation function of the multi-dimensional review system and undermining overall platform credibility.

4. Discussion

4.1 Theoretical Dialogue

This study's systematic analysis of multi-dimensional eWOM on Pinduoduo effectively complements and expands existing classical academic research findings^{[11][12]}. Information Diagnosticity Theory proposed by Mudambi and Schuff (2010) constructs a basic analytical framework for evaluating review information value and provides core theoretical support for this study's exploration of the differentiated information value of textual content, audiovisual materials and supplementary reviews^[11]. Different from previous fragmented studies focusing merely on textual quality^[4], this research incorporates user social feedback, audiovisual evidence and long-term supplementary evaluations into a unified analytical framework based on the unique attributes of social commerce scenarios, effectively expanding the application scope and research dimensions of Information Diagnosticity Theory.

Traditional studies based on Social Proof Theory mainly focus on the positive guiding effect of group attitudes on individual consumption decisions^[9]. On the basis of existing research conclusions, this study innovatively finds that commercial intervention in social commerce can lead to eWOM alienation. Artificially manipulated interactive data can generate false group endorsement signals, inducing consumers to make irrational purchase decisions. This negative functional mechanism is rarely discussed in traditional Western e-commerce research, effectively supplementing the scenario boundary of Social Proof Theory. Previous studies on Hofstede's Cultural Dimensions Theory mostly focus on cross-national consumption difference comparisons^[10]. Breaking the traditional cross-cultural research paradigm, this study targets the eWOM adoption logic of Chinese sinking market users under the dual influence of collectivism and high uncertainty avoidance, realizing localized innovative application and expansion of classical cross-cultural theories.

In addition, most prior eWOM studies separately explore the independent influence of single review elements^{[5][6]}, ignoring the collaborative linkage effect of multi-dimensional indicators. This study integrates five core review dimensions into a complete systematic framework and verifies that different eWOM elements do not function independently, but coordinate and complement each other to jointly affect consumers' cognitive judgment and final purchase decisions, supplementing the holistic analytical perspective in eWOM research. Meanwhile, this research confirms that mature conclusions summarized from Western e-commerce scenarios cannot be directly applied to localized Chinese social commerce scenarios^[12]. Unique platform operational mechanisms, domestic consumer cultural psychology and commercial traffic intervention logic will completely reshape the functional effect of eWOM information, providing innovative directions for subsequent localized

eWOM research.

4.2 Theoretical Contributions

This study's theoretical contributions are mainly reflected in two key aspects. First, this research constructs a targeted multi-dimensional eWOM analysis framework adapted to Chinese localized social commerce scenarios. Breaking the limitations of previous fragmented single-indicator research, it integrates five core review elements (emotional tendency, textual narration, audiovisual materials, supplementary reviews and social feedback) into a complete research system, systematically elaborating the collaborative functional value and internal operation logic of different elements and enriching speculative research achievements in the field of localized social commerce eWOM.

Second, this study realizes the adaptive integration of classical cultural theories and social commerce eWOM scenarios. It closely combines Hofstede's Cultural Dimensions Theory with typical social commerce eWOM characteristics such as supplementary reviews, interactive likes and real-shot evaluations, elaborating how localized collectivist values and uncertainty avoidance psychology subtly regulate consumers' acceptance, screening and utilization of different types of eWOM information. This finding refines the internal correlation mechanism between localized consumption culture and online word-of-mouth behavior, providing new theoretical support for interpreting Chinese consumers' unique eWOM dependence psychology.

4.3 Practical Implications

In terms of platform governance, Pinduoduo needs to upgrade its anti-cheating technical system to accurately identify and severely punish illegal behaviors such as fake comment brushing, interactive data manipulation and forged audiovisual evaluations, reduce the algorithm traffic weight of flooded false reviews, and comprehensively purify the platform's eWOM ecological environment^[2]. Meanwhile, the platform should optimize its review sorting algorithm, abandoning the single interaction-volume-oriented sorting mechanism. Multiple quality-based indicators, including textual detail richness, original shooting authentication and supplementary review duration, should be incorporated into the algorithm system to prioritize the display of authentic, high-quality and long-term user evaluations^[8]. In addition, it is necessary to optimize the user-end information screening function to help consumers quickly identify high-value eWOM content. The platform should also adjust its incentive orientation, weaken the single reward mechanism for full five-star reviews, tolerate objective neutral and negative evaluations, and encourage users to produce detailed, authentic and comprehensive consumption feedback, so as to alleviate users' blind conformity decision-making bias.

For platform merchants, it is necessary to abandon short-term profit-oriented speculative behaviors of brushing fake eWOM data. Merchants should focus on improving product quality and after-sales service levels to optimize user consumption experience, guide real buyers to publish objective and detailed evaluations through compliant ways, and encourage users to release long-term supplementary reviews to accumulate high-quality sustainable eWOM resources^[7]. Additionally, merchants should rationally view neutral and negative evaluations. Objective two-sided evaluations with both advantages and defects are more credible in consumers' cognition. Merchants can accurately locate operational deficiencies based on negative user feedback and carry out targeted product iteration and service optimization to realize long-term stable store operation^[6].

For individual consumers, it is essential to improve online consumption media literacy. Users should abandon the one-sided evaluation habit of judging commodity quality merely through star ratings and interaction volumes, and comprehensively refer to multi-dimensional information including detailed textual descriptions, original audiovisual materials and long-term supplementary reviews. Rational screening of false eWOM content can effectively avoid blind conformity consumption errors and improve the scientificity and accuracy of online shopping decisions^[3].

4.4 Research Limitations

This study adopts a pure conceptual speculative research method, conducting theoretical deduction based on literature sorting and platform scenario observation, without using empirical research methods such as questionnaire surveys and text data mining. Accordingly, the research conclusions and theoretical inferences need to be further verified and supplemented by subsequent quantitative empirical studies. Secondly, this research only takes Pinduoduo, a single social commerce platform with typical sinking market characteristics, as the research object, resulting in limited conclusion applicability. Whether the

research findings can be extended to traditional comprehensive e-commerce, content-based e-commerce and overseas social commerce platforms requires further multi-scenario and multi-platform comparative analysis.

Furthermore, this study mainly analyzes the influencing effects of two macro cultural variables (collectivism and uncertainty avoidance), without incorporating micro individual factors such as product categories, consumer personal shopping experience and product involvement degree, failing to fully cover all influencing factors of user eWOM adoption behavior. Subsequent research can expand research dimensions by introducing multiple mediating and moderating variables, adopt empirical methods to quantify the functional weight of different review dimensions, and carry out comparative studies across different product categories and platforms, so as to further improve the theoretical system of localized social commerce eWOM research.

5. Conclusion

Local social commerce represented by Pinduoduo has constructed a unique multi-dimensional eWOM system that differs from traditional e-commerce platforms, whose functional value far exceeds basic product scoring services. The five core review elements coordinate and complement each other, which can not only alleviate the inherent information asymmetry in online transactions and improve eWOM information diagnosticity, but also build an open interactive field for consumers to exchange consumption experiences and transmit authentic product attitudes. Meanwhile, the functional logic of multi-dimensional eWOM is highly compatible with China's localized collectivist consumption culture and high uncertainty avoidance psychology, accurately matching the online shopping decision-making demands of sinking market users.

Nevertheless, affected by commercial profit intervention, algorithmic traffic bias and unreasonable platform incentive mechanisms, prevalent problems including fake eWOM proliferation, unbalanced review dimension distribution, insufficient exposure of high-quality evaluations and user information overload continue to damage the platform's benign eWOM ecology and weaken the core functional value of multi-dimensional reviews. Giving full play to the positive empowerment effect of multi-dimensional eWOM in social commerce requires joint efforts from platforms, merchants and consumers to standardize eWOM dissemination order and purify the online consumption ecology. This study completes theoretical sorting, mechanism analysis and dilemma discussion of localized social commerce multi-dimensional eWOM through conceptual speculation, and relevant research viewpoints need further empirical verification and optimization in future in-depth studies.

Funding

No

Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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