

Research on the Impact of Algorithmic Recommendation and Social Sharing on Consumption Decision-Making in Social E-Commerce —Based on Questionnaire Analysis of TikTok and Red Note Users

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Abstract. Against the background of the in-depth development of the digital economy, decentralized platforms such as TikTok and Red Note have become core fields of social commerce. Algorithmic recommendation and social sharing form a two-wheel drive model, which profoundly constructs users' consumption decision-making paths. Taking social commerce users as research objects, this study adopts a combination of literature research and empirical analysis to explore the synergistic influence mechanism of algorithmic recommendation and social sharing on consumption decision-making, as well as the differences in the degree of influence among different groups. The study finds that algorithms stimulate users' potential consumption demand through cost-effective screening and personalized reach, while social sharing completes consumption transformation by virtue of authentic content, reputation, and trust, forming a synergistic closed loop of "algorithm reach stimulation—social trust verification—transaction completion". Data show that users are most sensitive to the cost-performance ratio in algorithmic recommendation, while content authenticity and reputation are the core driving factors of social sharing, and different groups have significant differences in their dependence on the two mechanisms. This study explains the consumption decision-making mechanism of social commerce from the perspective of algorithms and social collaboration, providing a reference for platforms to optimize recommendation strategies and brand marketing.

Keywords: social commerce, algorithmic recommendation, social sharing, consumption decision, user behavior

1. Introduction

1.1. Research background

Under the in-depth development of the digital economy, decentralized social platforms such as TikTok and Red note have become core fields of social e-commerce, reconstructing the "consumer-product-context relationsh". At present, the two-wheel drive model of "algorithmic recommendation

+ social sharing" has risen [1, 2]. Algorithms accurately match content through interest tags, and KOL/KOC product promotion and social sharing form a communication closed loop. However, massive information causes traffic anxiety, and the uneven quality of algorithms and content intensifies the trust crisis. It is still necessary to clarify the synergistic mechanism to solve industry pain points.

1.2. Research significance

This study explores the synergistic impact of algorithmic recommendation and social sharing on users' purchase decisions on social commerce platforms such as TikTok and Red Note, as well as the differences in impact across different income groups, which has important theoretical and practical significance. Theoretically, this study clarifies the interaction mechanism between algorithms and social recommendation, explains the synergistic logic of "reach stimulation-trust transformation" between the two, and fills the research gap of the differences in the impact of platform recommendation methods on users of different income groups. Practically, it provides a reference for social commerce platforms to optimize algorithmic recommendation mechanisms and balance algorithm and social content distribution; it helps brands accurately target users of different income groups and formulate differentiated marketing communication strategies to improve effective conversion rates [3]. At the same time, it can also help consumers clarify the influencing factors of their own purchase decisions, enhance consumption rationality, avoid impulsive consumption, and promote the fair and healthy development of social commerce.

1.3. Research content

This study mainly discusses how algorithmic recommendations and social sharing jointly affect users' shopping decisions on social commerce platforms such as TikTok and Red Note, and whether people with different incomes and classes are affected differently by these two methods.

First, algorithmic recommendation means that platforms generate "interest portraits" through users' browsing, staying, liking, purchasing, and other behaviors. Algorithms push many contents that users may be interested in in advance, such as "Guess You Like" and "Similar Recommendations". This method is more likely to activate potential demand when users do not have a clear intention to buy. Second, social sharing refers to content such as friend recommendations, influencer promotion, and real user evaluations. Compared with algorithms, social information is more "trustworthy" because it comes from real people rather than machines. Many users refer to notes on Red Note, live sharing on TikTok, or suggestions from people around them before buying things, and social trust directly affects whether they finally place an order [4]. In social e-commerce, algorithms and society do not work separately, but strengthen each other. Algorithms push social content to more people, and social interactions (likes, comments, shares) in turn optimize algorithmic recommendations, allowing better content to continue to flow. This forms a closed loop of "algorithm promotion-social verification-rapid transaction" with a high conversion rate.

In summary, algorithms are responsible for "reach" and "stimulating interest", and social interaction is responsible for "trust" and "conversion". The combination of the two determines the user's purchase path, and group differences determine which method has a greater impact. The significance of the research is to help platforms, brands, and consumers understand the decision-making logic and make more fair, rational, and suitable content and consumption choices for different groups.

1.4. Research methods

This study takes decentralized social commerce platforms such as TikTok and Red Note as the research field, and adopts a combination of literature research and empirical analysis. First, by sorting out relevant domestic and foreign literature on social commerce, algorithmic recommendation, social fission, and user consumption decision-making, core concepts are defined, existing research results and deficiencies are summarized, and the theoretical analysis framework of this study is constructed. Second, platform users of different incomes and educational levels are selected as research objects, and consumption decisions affected by algorithmic recommendation and social fission are collected through questionnaire surveys to quantify the weight perception of different groups on the two factors. Finally, data statistical analysis tools are used to sort out and analyze the survey data, verify the dynamic change law of decision-making weights of different groups, and provide empirical support for putting forward optimization strategies such as algorithm transparency and content governance [5, 6].

1.5. Research questions

RQ1: How do algorithmic recommendations affect consumption decision-making?

RQ2: How social sharing affect consumption decision-making?

RQ3: Whether there are differences among different groups?

2. Empirical analysis of the impact of algorithms and social sharing on consumption

2.1. Definition of core concepts

To clarify the research boundary and analytical logic, this paper first defines the four core concepts: social commerce, algorithmic recommendation, social sharing, and consumption decision-making. Social commerce is a new e-commerce model relying on decentralized platforms such as TikTok and Red Note, integrating social interaction, content sharing, and commodity transactions. Algorithmic recommendation is a technical mechanism that constructs user profiles based on behavioral data to achieve personalized outreach and stimulate potential consumption demands. Social sharing is an information transmission behavior based on real interpersonal trust, which completes trust construction and purchase conversion through recommendations from relatives and friends, influencer promotion, and word-of-mouth reviews. Consumption decision-making refers to the complete behavioral process of users from interest arousal, trust verification, to final purchase under the combined effect of the two.

2.1.1. Social e-commerce

Social commerce is a new commerce model that deeply integrates social interaction, content sharing, word-of-mouth communication, and commodity transactions relying on decentralized platforms such as TikTok and Red Note. It realizes efficient product promotion and consumption transformation through user networks and content product promotion, reconstructing the connection logic of "consumer-product-context relationship" in traditional commerce.

2.1.2. Algorithmic recommendation

Algorithmic recommendation is a way for platforms to construct user interest portraits based on user behavior data, such as browsing, liking, staying, and purchasing, and actively push highly matched products and content to users in the form of personalized recommendations, Guess You Like, homepage recommendations, etc. Its core function is to efficiently reach users and stimulate potential consumption demand.

2.1.3. Social sharing

Social sharing refers to information-dissemination behaviors such as recommendations from relatives and friends, KOL/KOC product promotion, real user evaluations, and product word-of-mouth evaluations. Based on real interpersonal trust, it provides reliable consumption references for users, reduces decision-making risks, and undertakes the key functions of trust construction and purchase conversion.

2.2. Questionnaire design and sample overview

This study takes users of mainstream social commerce platforms such as TikTok and Red Note as research objects, designs questionnaires around platform usage habits, algorithmic recommendation perception, social sharing influence, consumption behavior, and attitude, and collects 100 valid samples. The samples cover users of different incomes, occupations, usage durations, and shopping frequencies, and the data is authentic and representative, which can objectively reflect the behavioral characteristics and decision-making rules of social commerce users.

2.3. Analysis of users' basic usage of social e-commerce platforms

The survey shows that the social commerce platforms used daily by respondents present an obvious echelon differentiation. TikTok and Red Note constitute the first echelon, which are the content commerce platforms with the highest user penetration rate; Pinduoduo and Taobao follow closely. In contrast, the usage rates of Kuai Shou and Weibo are significantly lower. It is worth noting that the average number of platforms used per capita is 3.11, indicating that consumers have formed a mature habit of cross-platform price comparison, and a single platform is difficult to monopolize users, as Table 1 shows as follows.

Table 1. Statistics on the frequency of daily use of social commerce platforms

Social commerce platform	Number of cases	percentage	Case percentage
TikTok	67	21.5%	67.0%
Red note	71	22.8%	71.0%
Taobao shopping	61	19.6%	61.0%
Kuai Shou	29	9.3%	29.0%
Pinduoduo	65	20.9%	65.0%
Weibo	18	5.8%	18.0%
Total	311	100.0%	311.0%

2.4. Analysis of the impact of algorithmic recommendation on user consumption behavior

The survey shows that "high cost-performance ratio of recommended products" is the primary algorithm feature affecting users' shopping decisions, significantly higher than "accurately matching personal preferences". This indicates that in the social commerce scenario, consumers' price sensitivity takes precedence over personalized needs, and the core value of algorithmic recommendation is to help users efficiently screen cost-effective products rather than simply meeting interest preferences. In addition, recommendation frequency control and display form innovation also constitute important experience factors, reflecting users' vigilance against the "intrusiveness" of algorithms and acceptance of content-based presentation methods. It is worth noting that a small number of respondents said that algorithmic recommendations have no obvious impact on them, suggesting that platforms need to retain non-algorithmic traditional shopping paths to meet diversified decision-making habits, as Table 2 shows:

Table 2. Algorithm recommendation characteristics that affect shopping decisions, frequency statistics

Social e-commerce platform	Number of cases	percentage	Case percentage
Accurately match personal preferences	59	25.2%	59.0%
Recommended products are cost-effective	74	31.6%	74.0%
The frequency of recommendations is moderate, not offensive	46	19.7%	46.0%
Novel product display form (short video/graphic text)	42	17.9%	42.0%
There is no significant effect	12	5.1%	12.0%
Other	1	0.4%	1.0%
Total	234	100.0%	234.0%

The most important algorithm recommendation feature is that the recommended products are cost-effective, which is significantly higher than the accurate matching of personal preferences, indicating that user price sensitivity takes precedence over personalized needs in social commerce scenarios, and the core value of the algorithm is to efficiently screen cost-effective products. In addition, moderate recommendation frequency and novel display form are also important influencing factors. A small number of users said that the algorithm has no obvious impact, suggesting that the platform should retain non-algorithmic shopping paths to meet multiple decision-making habits. The overall trust level of users in algorithm-recommended products is above average, with 40.0% relatively trusting, 4.0% fully trusting, and a total of 44.0% positive trust. 39.0% have average trust, and 17.0% have a distrustful attitude, indicating that algorithm recommendations have trust shortcomings and need to be supplemented and strengthened with the help of social sharing, as Table 3 shows.

Table 3. Distribution of trust in products recommended by social commerce algorithms

	N	%
Complete distrust	1	1.0%
Not very trusting	16	16.0%
Generally	39	39.0%
Trust more	40	40.0%
Complete trust	4	4.0%

2.5. Analysis of the impact of social sharing on user consumption decisions

The survey shows that "shared content is true and valuable" is the primary social factor affecting shopping decisions, followed by "good product reputation and high evaluations". This indicates that in the social commerce scenario, content quality and social identity constitute the "two pillars" of user trust. Consumers attach importance to both the authenticity of information sources and the verification of group evaluations. It is worth noting that "credibility of sharers" is significantly lower than the quality of the content itself, reflecting that users' decision-making tends to be rational, no longer blindly following influencers or acquaintances, but paying more attention to the practical value of the content itself, as Table 4 shows:

Table 4. The core factors affecting accepting social sharing and purchasing goods are statistics on frequency

Social e-commerce platform	Number of cases	percentage	Case percentage
The credibility of the sharer (relatives, friends, and bloggers).	38	15.3%	38.0%
The sharing content is authentic and reference	76	30.6%	76.0%
The product has a good reputation and high evaluation	74	29.8%	74.0%
Share the side offers/benefits	49	19.8%	49.0%
Follow the trend of herd mentality	10	4.0%	10.0%
Other	1	0.4%	1.0%
Total	248	100.0%	248.0%

Social sharing effectively makes up for the lack of trust in algorithm recommendations with real interpersonal endorsement and group reputation, reduces information asymmetry through real evaluation, user experience, and word-of-mouth evaluation, and helps users complete the key conversion from "interested" to "willing to buy". The algorithm is responsible for reaching and stimulating interest, and the social network is responsible for strengthening trust and final transactions, forming a synergistic and complementary closed loop of conversion.

2.6. Differences among different income and occupational groups

One-way ANOVA shows that the monthly income level has no significant impact on algorithmic recommendation-related behaviors and attitudes. There is no statistically significant difference in algorithm purchase behavior, trust degree, click intention, and demand matching perception among different income groups, indicating that social e-commerce algorithmic recommendation has achieved universal penetration across income classes. Different occupational identities have no significant differences in algorithmic recommendation-related behaviors and attitudes, indicating that algorithm penetration is universal and not significantly disturbed by occupation type.

3. Discussion and analysis

3.1. Practical significance of platform usage characteristics

The survey results show that Red note and TikTok have become the most widely used social e-commerce platforms, and users generally use multiple platforms for browsing, price comparison, and purchase. This result reflects that the current social e-commerce has presented a pattern of coexistence of multiple platforms and cross-platform user flow. Users no longer rely on a single

commerce channel, but obtain content, compare prices, and refer to word-of-mouth among different platforms, indicating that "content promotion—multi-platform price comparison—decision purchase" has become the mainstream consumption path.

3.2. Influence mechanism of algorithmic recommendation

From the empirical results, algorithmic recommendation has achieved high coverage, medium accuracy, and stable conversion promotion in social e-commerce. Most users can frequently contact algorithmically recommended content, and more than 80% of users have purchase behavior as a result. However, the proportion of users who think the recommended content "fully meets their needs" is extremely low, and the trust degree is generally at a medium level, reflecting that algorithms still have problems such as excessive homogenization, insufficient recommendation accuracy, and weak trust construction [7].

3.3. Trust strengthening role of social sharing

Social sharing effectively makes up for the lack of trust in algorithmic recommendations through real interpersonal endorsement and group word-of-mouth, reduces information asymmetry through real evaluations, usage experience, and word-of-mouth evaluations, and helps users complete the key transformation from "being interested" to "willing to buy". Algorithms are responsible for reach and interest stimulation, and social interaction is responsible for trust strengthening and final transaction, forming a synergistic and complementary conversion closed loop between the two [8].

3.4. Implications of demographic differences

This analysis finds that users of different incomes and occupations show no significant differences in acceptance, purchase behavior, and trust perception of algorithmic recommendations. This result indicates that algorithmic recommendations have strong universality and cross-group penetration, not restricted by economic status and occupation type, and have become a popular and inclusive information distribution method.

3.5. Synergistic mechanism of algorithm and social sharing

Algorithmic recommendation and social sharing are not independent of each other, but form a mutually empowering and cyclically reinforcing relationship [9, 10]. On the one hand, algorithms expand the reach of social content; on the other hand, social interaction data optimize the algorithm model. The consumption decision-making link can be summarized as: accurate algorithm promotion → social trust verification → final purchase transaction.

4. Conclusion

Taking social commerce users as research objects, this study explores the impact of algorithmic recommendation and social sharing on user consumption behavior through empirical data analysis, and mainly draws the following conclusions:

First, users have formed social commerce usage habits of multi-platform use, high-frequency browsing, and normalized consumption. Content-based platforms such as Red Note and TikTok occupy a dominant position.

Second, algorithmic recommendations have a universal and stable promoting effect on user consumption behavior, but there is still room for improvement in demand matching accuracy and user trust. Users pay more attention to the product cost-performance ratio in algorithm scenarios.

Third, social sharing undertakes the core functions of trust building and final conversion in consumption decisions. Content authenticity and reputation credibility are the key factors affecting users' decisions.

Fourth, income level and occupation type have no significant impact on users' behaviors and attitudes in algorithmic recommendation scenarios, indicating that algorithmic recommendations have strong universality.

Fifth, algorithmic recommendation and social sharing present a synergistic, complementary, and cyclically reinforcing relationship in consumption decision-making, forming a complete closed loop of "algorithm promotion—social verification—consumption conversion".

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