

Research on the Influencing Factors of Young Users' Participation Intention in Lightweight Interactive Advertisements on Douyin

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Abstract:

As the commercialization process of short video platforms accelerates, lightweight interactive advertising (using vertical short videos as the carrier, including low-level interactions such as “comment to win a prize”) has become the mainstream advertising form. Most researchers have explored the influence of participation intention based on the individual characteristics of users or advertisements themselves, but there is still a gap in targeted research on youth groups. Therefore, this study focuses on Douyin users aged 18-25 years old and adopts a questionnaire survey method. The questionnaire focuses on the three core variables of reward value, interaction cost, and social attributes, setting scale items to collect data. Through descriptive statistics and correlation analysis, this study explores the factors affecting the willingness of young people to participate in lightweight interactive advertising. The study found that reward value is the core driving force of decision-making, there is a dynamic relationship between interaction cost and willingness to participate, and social attribute induction can effectively enhance participation motivation. The research clarifies the influencing paths on the participation intention of young Douyin users and provides a theoretical basis for optimizing interactive advertising design.

Keywords: Interactive advertising; participation intention; advertising effectiveness.

1. Introduction

Lightweight interactive advertising has attracted many users, especially the active participation of the

younger generation, because it fits the rhythm of life in the fragmented era. These advertisements ingeniously incorporate low-level interactive elements such as raffles in the comment area and coupon re-

demption through likes, making them highly interactive and with outstanding marketing effects. They have gradually become one of the important profit-making methods for short video platforms. Exploring the logical chain of how mainstream users judge “whether to participate in the interaction” after seeing this type of advertisement can, on the one hand, fill the gap in targeted research on youth groups and improve the theoretical system of advertising participation willingness; on the other hand, it can provide practical guidance for advertisers to optimize advertising design and increase interaction rate. This study uses the Douyin platform as a sample and collects data by distributing questionnaires. It focuses on the action paths of the three major factors of reward, cost, and sociality. Descriptive statistics and correlation analysis were conducted based on SPSS to quantify the results and reveal the deviation in participation intentions caused by different influencing factors among young users.

2. Literature Review

2.1 Research on Factors Influencing Advertising Participation Intention

Zhang Zhipeng and Zhang Liyi confirmed the significant impact of demographic attributes and psychological attributes (such as perception of advertising disclosure) on participation intention, providing theoretical support for this study’s focus on the 18-25 age group of young people [1].

Liu Wenxia and Li Bin focused on the characteristics of information sources and discovered that factors such as activity have a positive driving effect on the act of sharing [2]. Liao Bingyi et al., based on acquaintance social networks, revealed the role of trust and source authority in promoting advertising sharing [3]. This provides a theoretical framework for setting the core variables of this study.

Kim & Kim discovered that the consistency between the advertising content and the product quality, as well as the sponsor’s popularity, also affects advertising effectiveness, which provides a new direction for subsequent research [4]. Abdel Fattah & Khaled concluded that “marketing

platforms have a significant impact on participation decisions”, which reinforces the rationality of choosing Douyin as a specific platform for research [5].

Overall, the above studies have constructed a system of influencing factors of advertising participation intention from the perspectives of audience, rewards, social interaction, and platform, but there are limitations: first, there is a lack of targeted conclusions for different platforms; second, there is insufficient research on youth groups.

2.2 Research on Factors Affecting Advertising Avoidance

The study of the advertising avoidance phenomenon provides a supplementary perspective for understanding the logic of user “non-participation” and helps to reveal the user decision-making mechanism more comprehensively. Sun Baoying and Deng Ran took advertisements on Xiaohongshu as their research sample, identified multidimensional avoidance factors such as perceived target barriers and advertisement clutter [6]. The “negative participation behavior analysis framework” they proposed provides a theoretical basis for designing the “interaction step complexity” item in this research.

Liao Bingyi et al. proposed a three-dimensional avoidance model of cognition, emotion, and behavior for APP splash screen advertisements [7]. The “emotional avoidance” dimension provides theoretical support for analyzing “social exposure”.

In a literature review on advertising avoidance, Vi Truc Ho pointed out that the intrinsic value of advertising, customer perception and duration are key influencing factors. His conclusion that “advertising value is negatively correlated with avoidance behavior” can be reversely deduced, which echoes the H1 hypothesis of this research [8]. L Kelly et al.’s research identified the relationship between emotional factors and avoidance [9]. Debasis Pradhan et al.’s research on Generation Z’s avoidance of advertising due to “brands’ sense of control over influencers” shows that interactive design needs to balance inducement and user autonomy [10]. They provide bases for this research to design social inducement variables based on user emotional experience.

3. Research Methods

3.1 Research Hypothesis

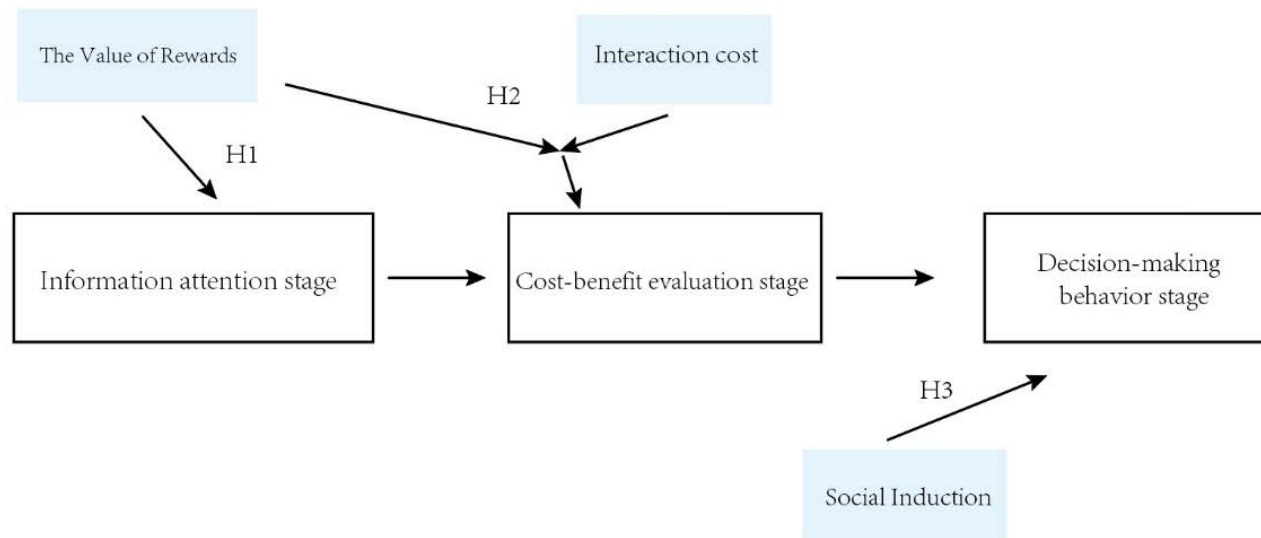


Fig. 1 Decision-making logic model of young users for lightweight interactive advertising

According to existing literature, the user's age attribute has a significant impact on the participation intention [1]. Therefore, the core age group (18-24 years old) of Douyin users were selected as research subjects [11]. Based on the existing research conclusions, a decision-making logic model of young users for light interactive advertising is summarized. The user's decision-making process can be divided into three stages, as shown in Figure 1: information attention stage, cost-benefit evaluation stage, and decision-making behavior stage.

In the information attention stage, the reward value stimulates attention by increasing users' motivation and interest. In the cost-benefit evaluation stage, interaction costs affect users' perception of the effort and time required, which in turn affects users' evaluation of potential benefits. In the decision-making behavior stage, social induction influences the user's final decision through social identity and group pressure.

After summarizing the existing conclusions on user participation willingness, it is believed that reward value, interaction cost, and social induction may be significant influencing factors of participation willingness, and the following assumptions are made:

H1: Reward value dominates young users' lightweight interactive participation decision-making.

H2: There is a dynamic mechanism between interaction cost and participation intention.

H3: Social attributes strengthen the emotional motivation for interactive participation.

3.2 Questionnaire

3.2.1 Questionnaire design

Given that user participation intention is a subjective concept, and the variables cannot be effectively controlled, this study adopted the questionnaire survey method.

The questionnaire used reward value, interaction cost, and social induction as independent variables, and willingness to participate as the dependent variable. The questionnaire used a 5-point Likert scoring method (1 = very unwilling, 5 = very willing) and set up multi-level scenarios (such as interaction steps divided into 1-5 steps) to quantify participation intentions. At the same time, by creating a virtual advertising environment, irrelevant variables were excluded from interference. It not only ensures the focus on core variables, but also guides respondents to more accurately map their willingness to participate.

The questionnaire further deconstructs the three core independent variables. In terms of reward value (H1), it is measured through two dimensions: "actual value of the prize" and "potential value enhancement" to capture the role of material incentives in promoting participation decisions. For the interaction cost (H2), the focus is placed on two key dimensions of "the complexity of interaction steps" and "the scope of social exposure". Interaction cost is operationalized as quantifiable time investment and social pressure. Social induction (H3) is divided into three types: friend relationships, acquaintance networks, and social network diffusion.

The questionnaire structure followed the “screening-verification” logic, as shown in Table 1. First, through the basic questions (Questions 1-4), target research users are screened, with an interspersed predictive verification of potential influencing factors (Question 5). Subsequently, through the matrix questions, the impact of the three core variables on participation willingness is verified layer by

layer: reward value questions (6-7) test the “benefit-driven” hypothesis, interaction cost questions (8-9) verify the “cost-benefit dynamic balance” relationship, and social induction questions (10) analyze the “reinforcement effect of social relationships on participation willingness”. Ultimately, this forms a closed-loop verification of the decision logic model.

Table 1. Questionnaire structure

Theme	Question number	Content
Sample basic information	1	Age
	2	Gender
	3	Average daily usage time of Douyin
	4	Ad engagement frequency
Potential influencing factors	5	Factors affecting willingness to participate
H1(Reward value)	6	Actual value of prize
	7	Potential value enhancement
H2(Interaction cost)	8	Complexity of interaction steps
	9	Scope of social exposure
H3(Social induction)	10	Friend relationships
	11	Acquaintance networks
	12	Social network diffusion

3.2.2 Collecting data

This study designed and distributed questionnaires using Wenjuanxing (an online survey platform), which were pushed through multiple platforms such as WeChat, QQ, Douyin, and Yunduoduo, covering major cities across the country. Respondents from first-tier and second-tier cities accounted for 72%, reflecting the user situation at different city levels.

A total of 116 questionnaires were collected. After conducting validity checks (excluding samples that had not learned about Douyin’s lightweight interactive advertisement), 110 valid questionnaires were retained, resulting in

an effective recovery rate of 94.82%.

As shown in Table 2, among the valid samples, the 18–25-year-old youth group accounted for 100%, which is in line with the research object positioning. Male respondents accounted for 58.18%, so the gender distribution was balance. In terms of the average daily use time of Douyin, the respondents who used it for 2-3 hours were the most, accounting for 38.18%, indicating that most of the samples have a certain degree of familiarity in Douyin. 46.36% of the respondents “frequently participated” in light interactive advertising, and the samples had sufficient practical experience with the research topic.

Table 2. Sample distribution

Question	Answer	Frequency	Percentage(%)
Age	18-20	53	48.18
	21-23	35	31.82
	24-25	22	20
Gender	Female	46	41.82
	Male	64	58.18

Average daily usage time of Douyin	1-2h	34	30.91
	2-3h	42	38.18
	≤ 1h	11	10
	> 3h	23	20.91
Ad engagement frequency	Occasionally	37	33.64
	Often	51	46.36
	Very often	22	20

3.2.3 Data analysis tools

This research used SPSS for data analysis. This tool has mature descriptive and inferential statistical functions, which can accurately quantify the strength of association between variables. Moreover, this tool is widely used in similar studies, ensuring the comparability of the results. Since the questionnaire measures the participation willingness caused by the same influencing factor at different levels, to more accurately reflect the overall effect of the influencing factor, the participation willingness scores corresponding to each level are averaged and used as the participation willingness score after the influencing factor has acted.

SPSS is used to achieve three main goals:

1. Calculate the average score of each item and preliminarily determine the user's sensitivity to each factor.
2. Conduct descriptive statistical analysis and reliability analysis to find out the rules of each factor affecting user participation willingness. At the same time, use Cron-

bach's α coefficient to test the reliability of the scale items of each core variable.

3. Conduct Pearson correlation analysis to verify the three hypotheses. Calculate the correlation between the mean of each core variable dimension and participation intention. If the correlation coefficient r is significant, the hypothesis is established.

4. Research Results

4.1 Descriptive Statistical Analysis

4.1.1 Subjective judgment results

Question 5 of the questionnaire asked the respondents to make subjective judgments on the effects of various factors on participation willingness. The preliminary conclusions drawn can help verify the relevant conclusions of this paper. The answers are shown in Figure 2.

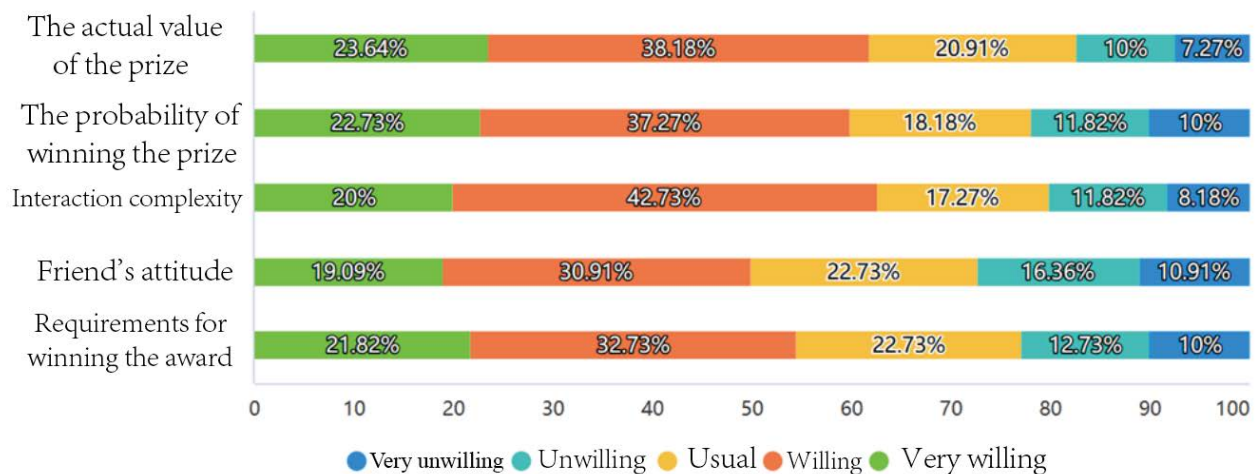


Fig. 2 Responses to Question 5

From the overall trend, the average scores of each factor were in the range of 3.31 - 3.61, which indicated that the

participants have a certain degree of attention to all the factors.

4.1.2 Reward value dimension

Table 3. Reward value dimension data

Research Factors	Mean	Standard Deviation
Actual value of reward	3.491	0.986
Reward potential increase	3.434	1.05

As shown in Table 3, the mean value of the impact of the actual value of the reward is 3.491, slightly higher than the midpoint of the scale (3 points), indicating that young users tend to have a positive perception of it and believe that the actual value of advertising rewards has a positive impact on their participation decisions. The standard deviation is 0.986, which is a small value, indicating that users generally show this influence trend, and there are only differences in the degree of influence.

The mean value of the potential improvement impact of rewards is 3.434, which is also higher than the midpoint of the scale, but slightly lower than the “actual value of

rewards”. This shows that potential benefits still have a certain driving effect on participation willingness, but young users are more inclined to “certain actual rewards” rather than “uncertain potential benefits” when making decisions. The standard deviation is 1.05, indicating that users have slightly different perceptions of “potential improvement”. This may be because some users are skeptical about uncertain benefits (for example, they believe that “probability improvement” lacks transparency), while other users value its incentive effect, resulting in relatively obvious evaluation differences.

4.1.3 Interaction cost dimension

Table 4. Interaction cost dimension data

Research Factors	Mean	Standard Deviation
Interaction Step Complexity	3.36	1.092
Social exposure	3.295	1.034

As shown in Table 4, the average impact of the complexity of interaction steps is 3.36, indicating that most young users’ attention to the tediousness of the interaction steps has a greater impact on their willingness to participate. The standard deviation is 1.092, indicating that there are obvious differences in user perceptions. This may be related to the user’s usage habits: for example, users who participate in high-frequency interactions over a long period of time may have a higher tolerance for multi-step operations.

The average value of social exposure impact is 3.295, which is also higher than the midpoint of the scale, but slightly lower than the “complexity of interaction steps”. This indicates that users will take the “psychological pressure caused by social exposure” into consideration when

making participation decisions, but the overall level of attention is slightly lower than the complexity of the steps themselves. The difference in their mean values (0.065) indicates that in the evaluation of interaction costs, users are slightly more sensitive to “actual operation steps” than to “hidden costs brought by social exposure”, but users will comprehensively weigh the operation costs and social costs and adjust their participation decisions. The standard deviation is 1.034, indicating that the differences in user perceptions are relatively small. Most users have a low acceptance of “full public social exposure”, and there are differences only in intermediate scenarios such as “limited social exposure”.

4.1.4 Social induction dimension

Table 5. Social induction dimension data

Research Factors (Types)	Mean	Standard Deviation
No social induction	3.336	1.258
Friendship Induction	3.318	1.248
Acquaintance network induction	3.491	1.194
Social network diffusion induction	3.382	1.204

As shown in Table 5, the average value of friend relationship induction is 3.318, which is slightly lower than that of no social induction, indicating that it has no obvious effect on improving participation intention, and may even reduce the participation tendency of some users due to slight social pressure. The average value of acquaintance network induction is 3.491, which is the highest and significantly higher than that without social induction, indicating that the group effect of acquaintance network can effectively enhance the willingness to participate. The average value of social network diffusion induction is 3.382,

which is slightly higher than that of no social induction. It has a certain positive impact on participation intention.

The standard deviation of friend relationship induction is 1.248, reflecting that users have obvious differences in their acceptance of friend induction. The standard deviation of acquaintance network induction is 1.194, which is the smallest, and the standard deviation of social network diffusion induction is 1.204, indicating that users have little cognitive differences and relatively unified evaluations.

4.2 Correlation Test Analysis

Table 6. Correlation test analysis data

	Mean	Standard Deviation	Total participation intention	Reward value	Interaction cost	Social induction
Total participation intention	3.393	0.684	1			
Reward value	3.462	0.819	0.829**	1		
Interaction cost	3.327	0.831	0.846**	0.460**	1	
Social induction	3.397	1.066	0.595**	0.413**	0.322**	1
* p<0.05 ** p<0.01						

As shown in Table 6, the correlation coefficient between reward value and total participation intention is 0.829 ($p<0.01$), which is a very strong positive correlation. Combined with the fact that its average value of 3.462 is higher than the midpoint of the scale, it can be concluded that reward value is the core factor driving participation decisions, which is highly consistent with the H1 hypothesis. The correlation coefficient between interaction cost and total participation intention is 0.846 ($p<0.01$), which is a very strong positive correlation with a slightly higher intensity, which verifies the “dynamic mechanism” in the H2 hypothesis. The correlation coefficient between social induction and total participation intention is 0.595 ($p<0.01$), which is a moderately positive correlation, indicating that it has a positive impact on participation intention, verifying the reinforcing effect of social attributes on

participation motivation in the H3 hypothesis.

The intercorrelations between the variables show that the reward value is moderately positively correlated with the interaction cost (0.460), indicating that users’ expectations of rewards will adjust with changes in interaction costs, confirming the key role of cost-benefit evaluation. Reward value is moderately positively correlated with social induction (0.413), reflecting the synergistic effect of the two. For example, “sharing to get additional rewards” can strengthen the impact of both at the same time.

4.3 Reliability Analysis

To test the internal consistency and reliability of the scale items in this study, Cronbach’s α coefficient was used to conduct a reliability test on the scale items of the core variables. The results are shown in Table 7.

Table 7. Cronbach reliability analysis results

Dimension	Number of questions	Cronbach’s alpha coefficient
Reward value	9	0.855
Interaction cost	10	0.851
Social induction	4	0.902

The Cronbach’s α coefficients of the reward value dimension (9 items), interaction cost dimension (10 items), and social induction dimension (4 items) were 0.855, 0.851, and 0.902. All of these values were significantly higher

than 0.8, indicating that the overall reliability of the scale is good and it can provide effective data support.

For the optimized design of Douyin’s lightweight interactive advertisement, it is suggested to highlight determin-

istic reward information; dynamically adjust the reward intensity according to the interaction cost, adopt the “basic steps + optional advanced” design, default to “only visible to yourself” and support switching to “visible to close friends”; strengthen the acquaintance network group effect through push mechanisms such as “dynamic reminders of friends’ participation”.

5. Conclusion

The research results show that the willingness of 18–25-year-old Douyin users to participate in lightly interactive advertisements is significantly affected by reward value, interaction cost and social induction. The participation decision of young users is the result of the combined effect of reward drive, cost trade-off and social influence. Reward value is the core driving factor, and users prefer deterministic actual rewards; there is a dynamic balance mechanism between interaction cost and willingness to participate, and the influence of step complexity is greater than social exposure; the positive effect of acquaintance network induction is the most significant, while the effect of friend relationship induction is limited.

This study enriches the theoretical system of youth groups’ willingness to participate in advertising, provides a reference perspective for advertising effectiveness research, and provides targeted basis for advertisers to optimize lightweight interactive advertising design.

Future research can enhance the timeliness of conclusions by combining social media behavior data or using experimental methods. It can also be expanded to long-video platforms or different age groups to further improve the research framework for interactive advertising effects.

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