

The Dissemination Effects of AI-Generated Advertising Content on Xiaohongshu: An Analysis Based on User Perceptions and Behavioral Intentions

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Abstract. Due to the rapid advancement of generative artificial intelligence technology, AIGC applications are becoming more prevalent in the marketing sector. More people are able to independently create AI-generated images and movies due to the widespread use of AI applications on the internet. Users continue to differ on this type of content. This study examines consumers' behavioral intentions and perceptions of the differences between AI-generated and conventional human-created advertisements using a scenario-simulation questionnaire survey on the Xiaohongshu platform. The findings demonstrate that although AI-generated advertisements are quite good at first capturing viewers' attention, they have significant shortcomings in terms of inspiring emotional resonance and social sharing intent. According to data analysis, "perceived unnaturalness" is the primary psychological mediating process that underlies this paradox in communication. According to this study, advertisements created by humans have a clear advantage when it comes to influencing user attitudes and behavior. This study gives strategic insights for brand marketing techniques as well as empirical support for comprehending the bounds of AIGC's social media dispersion.

Keywords: Xiaohongshu, effectiveness paradox, psychological mechanisms, AI-generated advertising, and communication effectiveness

1. Introduction

Recent years have witnessed a dramatic change in the content industry's ecosystem as a result of ground-breaking advances in generative artificial intelligence. In the marketing communication area, brands are increasingly utilizing AIGC technology to enhance both the creativity of visual expression and the efficacy of content generation [1]. Xiaohongshu, a lifestyle platform that emphasizes user-generated content, is a significant location for the use of AI-generated advertising. Due to their distinctive visual designs, users have quickly developed an interest in the commercial postings that have been tagged with "AI Art" or "AIGC," which have increased on the platform.

However, it is a challenging topic as to whether these technologically sophisticated content forms can truly gain users' psychological acceptance. Preliminary research indicates that while some AI-generated advertisements have very high click-through rates, their sharing rates are still very low. People "click but do not share." According to earlier research, audiences may feel disinterested or

suspicious of electronically generated material due to its inherently ordered and patterned character [2].

In light of this, the current study is to conduct a comprehensive empirical investigation in order to systematically assess the communication effectiveness of AI-generated advertising on Xiaohongshu. Additionally, it looks for the psychological mechanisms underlying user responses. By providing both theoretical knowledge and practical guidance, the goal is to help platforms and businesses enhance their AIGC-based marketing strategies.

2. Background

With its effective content production capacity and creative generation benefits, generative artificial intelligence (AIGC) technology is rapidly evolving. It has swiftly entered the marketing industry and grown to be a crucial tool for brands looking to cut expenses and boost productivity. As one of these social media platforms, Xiaohongshu has become a key position for brand marketing due to its ecological characteristics of real sharing and accurate user reach. "Planting grass" refers to recommending a product to someone and stimulating his desire to buy, and the process of stimulating a person's desire to buy is called "planting grass."

However, the following traits of "practice first, research lagging behind" are prevalent in the current implementation of AIGC in Xiaohongshu advertising scenarios: In order to take advantage of the communication opportunity, brands have attempted to use AI to create graphic and short video ads. However, there is currently no systematic empirical conclusion regarding the differences between AI-generated and traditional manual advertisements in terms of user perception, the benefits and drawbacks of their communication effects, and the fundamental mechanisms that influence users' behavioral intentions (like clicks, sharing, and purchases).

The demand for "real experience" of Xiaohongshu users is significantly higher than that of other platforms. Whether the "unnatural feeling" that may exist in AI-generated content will weaken the trust and emotional connection of advertisements and then restrict the communication effect has become a problem that needs to be answered urgently in the industry practice. In this context, focusing on the Xiaohongshu platform, exploring the communication effect of AI-generated advertisements from the perspective of user perception and behavioral intention can not only fill the gap in existing research but also provide scientific guidance for brand marketing practice, which has important theoretical and practical value.

3. Hypotheses for research

The bizarre and intensely saturated visual spectacles of AIGC ads usually make them stand out in the information-rich social media landscape. Users' curiosity can be successfully piqued by this novelty, increasing their propensity to click and explore. Novel visual aspects are a crucial predictor of advertisement click-through behavior, according to a study on online advertising [3]. In light of this, the study suggests:

H1: Users' intention to click on AI-generated ads on the Xiaohongshu platform is substantially higher than that of conventional human-generated ads.

But attracting attention is simply the first stage of distribution; a stronger emotional bond and social identification are needed to encourage people to participate in social sharing. The marketing industry's extension of the "uncanny valley" theory states that when something seems nearly human but not quite so, it may cause the spectator to feel negatively [4].

Even if AI-generated content is not an anthropomorphic robot, users may experience "perceived unnaturalness" due to its small logical and emotional errors [5]. Users may be unwilling to link the information to their own social image due to this feeling of inauthenticity, which can damage the content's emotional warmth and credibility [4]. Thus, this research suggests:

H2: Compared to traditional human-generated ads, consumers' intention to share AI-generated ads on the Xiaohongshu platform is much lower.

H3: The association between sharing intention and the type of advertisement (AI-generated versus human-generated) is mediated by perceived unnaturalness.

4. Method of research

4.1. Participants and design

An online survey platform was used to conduct a between-subjects experiment. The AI-generated ad condition or the conventional human-created ad condition were randomly assigned to 455 active Xiaohongshu users who had interacted with the platform within the previous month. 85% of the sample was between the ages of 19 and 30, closely matching the demographics of Xiaohongshu's core user base, which is composed of 62% females and 38% males.

4.2. Procedure and stimuli

A single image advertising a "portable coffee cup" served as the experimental stimulus, and both groups saw the same image; only the textual source cue was altered:

AIGC condition (n = 150): "Artificial intelligence technology was used to create this advertisement."

Human condition (n = 150): "A group of experienced designers worked together to create this advertisement."

Following exposure, participants filled out identical measures measuring their perception of unnaturalness, click-through intention, sharing intention, and attitude regarding the advertisement. Seven-point Likert scales (1 being strongly disagree and 7 being strongly agree) were used for all items.

4.3. Actions

The single item "I am likely to click for more details," which sensitively taps latent click propensity and demonstrates strong face validity, was used to capture click-through intention.

Two items were used to measure sharing intention, spanning the main sharing situations and improving construct validity (e.g., "I would be willing to share this advertisement on social media").

Three items were used to measure perceived unnaturalness (e.g., "The content of this advertisement feels somewhat fake"), allowing the cognitive basis for negative emotions to be identified.

To increase the accuracy of the results, brand familiarity and product involvement were added as control variables to eliminate any potential confounding effects on the main outcomes.

5. Findings and interpretation

5.1. Fundamental data

According to the data structure, women make up a larger percentage (62.01%), and 74.02% of the population is in the core age range of 9 to 30 years old, which is consistent with the Xiaohongshu user profile. Users' interest in product categories and knowledge with advertising-related brands both score more than five points, which is at the medium and upper level of basic cognition. This gives advertising a solid base and has some evaluation value.

The average perception of "AI generation" in the AIGC group was 6.21 points, whereas that in the human creation group was only 3.47 points. The cognitive difference between the two groups was evident, and the manipulation check was extremely significant ($t=18.76$, $p<0.001$).

The control variables did not differ significantly between the groups; aside from the influence of basic cognition, brand familiarity ($p=0.756$) and category interest ($p=0.632$) did not differ.

Attitude toward advertising: In the three measures of "advertising is good" ($p=0.046$), "attractive" ($p=0.034$), and "likable" ($p=0.003$), the human creation group scored significantly higher than the AIGC group; the difference in "likability" was particularly significant.

Behavioral intention: Compared to the AIGC group, the human creation group's readiness to share ($p=0.014$), willingness to suggest ($p=0.004$), and willingness to click ($p=0.009$) were all much higher; the differences between the two groups were very significant.

In the three indicators of "the content is a bit fake" ($p<0.001$), "it seems unnatural" ($p=0.001$), and "mechanical generation sense" ($p<0.001$), which turned out to be the main elements influencing user experience, the AIGC group scored much higher than the human creation group.

5.2. Analysis of reliability

The scale sample in the questionnaire is tested for credibility and dependability using reliability analysis. The most popular way to gauge reliability is via Cronbach's coefficient. With the exception of demographic factors, all survey questions underwent reliability analysis. Between 0.7 and 0.8, Cronbach's α coefficient is qualified; between 0.8 and 0.9, it is better; and above 0.9, it is very good. Table 1 displays the findings. Because the Cronbach's α coefficient is higher than 0.7 (0.940), the questionnaire reliability is considered certified.

Table 1. Reliability statistics

Table 1: Reliability Statistics	Based on Standardized Items	Number of Items
940	941	12

5.3. Analysis of validity

To ascertain whether the observed variables for each latent variable have stable consistency and structural integrity, a measurement scale's validity is examined. It is among the most widely used metrics for assessing the validity of scales. Generally speaking, two requirements must be fulfilled while doing validity analysis: first, the Kaiser-Meyer-Olkin (KMO) measure must be more than 0.7; second, the results of Bartlett's test of sphericity must have a significance level below 0.05. Strong correlations between the observable variables are indicated when these two requirements are met.

Table 2 displays the test results. The survey data's KMO value is 0.972, which is higher than the cutoff of 0.70. With a significance threshold of 0.000 ($p<.01$), the approximate chi-square value for

Bartlett's test of sphericity is 2289.065. As a result, the scale's validity structure is verified to be adequate.

Table 2. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		972
Bartlett's Test of Sphericity	Approx. Chi-Square	2289.065
	Degrees of Freedom	66
	Significance	.000

5.4. Analysis of correlation

One statistical technique used to look into the connections between two or more variables is correlation analysis. Its purpose is to reveal these variables' associated characteristics. The correlations, degree of closeness, and direction of linkages among the variables were verified in this study using SPSS 26. The degree of connection between two variables increases with the correlation coefficient's absolute value approaching 1. According to this study, there is little to no association between the two variables if the correlation coefficient is less than 0.3. A moderate correlation is indicated by a coefficient between 0.3 and 0.6, and a high correlation is shown by a coefficient greater than 0.6. The two variables show a positive correlation when the correlation coefficient is positive; a negative correlation is shown by a negative correlation. Table 3 indicates that there is a significant positive correlation between willingness to share and the independent variable ($r = 0.742$, $p < 0.05$), attitude toward advertising ($r = 0.749$, $p < 0.05$), and perceived unnaturalness ($r = 0.745$, $p < 0.05$).

Table 3. Correlation analysis results

		Independent Variable	Attitude toward Advertisement	Willingness to Share	Perceived Unnaturalness	Click Intention
Independent Variable	Pearson Correlation	1	.804**	.742**	.795**	.617**
	Sig. (2-tailed)		.000	.000	.000	.000
	N (Number of Cases)	308	308	308	308	308
Attitude toward Advertisement	Pearson Correlation	.804**	1	.749**	.829**	.659**
	Sig. (2-tailed)	.000		.000	.000	.000
	N (Number of Cases)	308	308	308	308	308
Willingness to Share	Pearson Correlation	.742**	.749**	1	.745**	.580**
	Sig. (2-tailed)	.000	.000		.000	.000
	N (Number of Cases)	308	308	308	308	308

Table 3. (continued)

Perceived Unnaturalness	Pearson Correlation	.795**	.829**	.745**	1	.673**
	Sig. (2-tailed)	.000	.000	.000		.000
	N (Number of Cases)	308	308	308	308	308
Click Intention	Pearson Correlation	.617**	.659**	.580**	.673**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N (Number of Cases)	308	308	308	308	308

Correlation is significant at the 0.01 level (2-tailed)

5.5. Testing for results

The two user groups' click-through intentions were compared using an independent samples t-test. Although users in the AIGC group seemed to have a somewhat higher click-through intention than those in the human-created group, the difference was not statistically significant. This would imply that while AI-generated ads have some potential to draw user clicks, their benefit is yet unstable. As a result, hypothesis H1 was not entirely validated.

According to the results of the t-test, users in the AIGC group had a much lower intention to share than those in the human-created group. This result validates a significant flaw in AI ads that drives user sharing behavior, supporting Hypothesis H2.

Additionally, perceived unnaturalness was found to be significantly positively impacted by the type of commercial, with AI advertisements eliciting a larger sensation of unnaturalness. Perceived unnaturalness had a significant negative influence on sharing intention, even after adjusting for advertisement type. Perceived unnaturalness serves as a partial mediator, as seen by the considerable direct influence of advertisement type on sharing intention. These results validate Hypothesis H3 by fully exposing the psychological pathway of "AI advertisement → High perceived unnaturalness → Low sharing intention."

6. Discussion

Using empirical data, this study examines the intricate communication consequences of AI-generated ads on the Xiaohongshu platform. The primary conclusions are as follows: First, users' desire to click on AI-generated ads shows a slight upward trend, but the benefit is negligible. This could indicate that customers' initial amazement at AI ads is gradually waning and that the "novelty effect" dividend phase of technology is coming to an end [5]. Second, the study's most important conclusion is that AI-generated ads have a much lower sharing willingness than traditional ads, creating a glaring "effect paradox." This supports the academic community's worry that technology could impede in-depth communication [6]. Ultimately, this investigation was successful in identifying the internal psychological mechanism—the sense of unnaturalness—that caused this paradox. The lack of authenticity and emotional expression in AI content is easily noticed by users, and this unfavorable psychological impression of "unnaturalness" ultimately serves as a major deterrent for people to share on social media.

For example, AI creates product display images and core selling point frameworks for beauty ads, while humans add concrete and personalized content like "the real makeup holding state after 3 hours on the face" and "small tips for mixed oily skin in summer." AI technology is used to quickly generate the first draft of advertisements with high visual impact and strong topicality (such as popular titles, creative composition, and combination of hot elements), fully utilizing its advantage of "initial attention attraction" [7]. The details are optimized through manual intervention.

Because Xiaohongshu users have a high threshold for "real sharing," AI advertising must steer clear of homogeneous and templated expressions. By using more first-person viewpoints, adding realistic details (such scene-based actions and actual user pain spots), and minimizing hard-advertising preaching, brands may help AI understand the narrative logic of high-quality native content on the platform [8]. In order to bring the advertising material closer to the platform atmosphere of "real user shots and real experience," and to lower the psychological threshold of "perceived unnaturalness," it is important to refrain from over-beautifying the image or overstating its effectiveness.

AI advertising's ability to draw attention makes it applicable to situations with a lot of information, like "new product exposure, activity notification, and core selling point transmission" [9]. In situations that call for an emotional connection, like "deep planting and user trust building," the primary content is still real evaluations and blogger experience content that is manually created. For instance, when a brand launches a new skincare product, AI can be used to quickly generate multiple versions of short graphic advertisements that highlight key information like "ingredients, efficacy, and price" to achieve wide reach.

According to research, AI advertising has a disadvantage in terms of emotional resonance, so brands should refrain from using it in situations where users must empathize, like "brand story delivery, emotional marketing, and social responsibility promotion." For instance, holiday marketing ads with the theme of "family affection and companionship" or content that brands convey with the concept of "environmental protection and public welfare," are better suited for enhancing users' emotional identities through the manual creation of real-life narratives and actual cases.

The issue of AI advertisements' low social sharing willingness can be addressed by using interactive themes, voting, solicitations, and other features to pique viewers' interest and encourage participation. Topics like "Which style do you prefer?" and "How would you like to wear this item?" can be used in AI-generated clothing advertisements, for instance, to encourage users to leave messages for discussion. Alternatively, a solicitation campaign that asks users to "show off your same style of clothing" can be started to increase the social dissemination of content and turn one-way communication into two-way interaction.

Encourage users to create real-life usage experiences (UGC content) and incorporate high-quality UGC into future marketing content once "wide reach" with AI advertisements has been attained. For instance, a brand gathers real-life dressing feedback from users after showcasing new apparel through AI adverts. These are then manually vetted and re-distributed. This creates a closed cycle of "AI exposure → UGC precipitation → secondary dissemination" [10] that not only makes use of the efficiency advantages of AI but also compensates for the lack of trust and emotional connection of AI adverts with real UGC.

7. Conclusion

According to this study, advertisements created by humans have a clear advantage when it comes to influencing user attitudes and behavior. In addition to finding these ads to be "visually appealing" and "reliable in quality," users also engage in deeper cognitive processes at the emotional resonance

level, such as believing the ad "aligns with the brand's values" and "understands consumer needs." These subtle scenes and authentic emotional cues forge strong emotional bonds that are crucial in boosting ad acceptance.

Human-generated ads outperform AIGC commercials in terms of users' inclination to share, click, and suggest. In human-created organizations, value-transmitting shares driven by endorsement and recognition are typical sharing behaviors. Sharing like this broadens the message's audience, reduces the cost of decision-making for others, and creates a foundation for user retention and brand revenue. Conversely, AIGC advertisements are hindered by a feeling of "mechanical generation" and perceived "artificiality." Rigorous copywriting and visual homogeneity are the causes of the latter, while unrealistic aspects like illogical surroundings or rigid facial expressions are the causes of the former. These issues make it difficult for AIGC ads to meet the needs of Xiaohongshu consumers for "personalized and warm" content, which undermines trust and could even result in negative brand associations.

Despite these findings, there are still problems with the existing research. The sample focuses on a single product category and ignores attributes related to AIGC quality levels. Future studies should strengthen the dimensional analysis of "perceived unnaturalness," compare AI-generated advertisements across multiple quality tiers, and expand to other domains like food and attractiveness. Ultimately, this research agenda will help organizations achieve effective synergy and appreciate the complementarity between AI-generated content and human innovation in real marketing operations.

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