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# The influence of AI-Generared Content in social media ads on consumer behavior on Facebook

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***Abstract:*** **The increasing integration of artificial intelligence (AI) in digital marketing has led to the widespread adoption of AI-generated content (AIGC) in social media advertising. This study investigates the influence of AIGC in Facebook ads on consumer behavior, specifically examining how perceived usefulness mediates the relationship between AIGC advertising and consumer purchase intention. Additionally, the study explores the moderating role of perceived privacy risk in weakening this relationship. Unlike traditional advertising, AIGC enables the automated creation of personalized, contextually relevant ad content at scale, potentially enhancing consumer engagement and decision-making.**

**Adopting a quantitative research design, this study collected data from 380 active Facebook users through a structured online questionnaire. Participants were exposed to both AIGC-generated and traditional Facebook ads, and responses were measured across key variables including perceived usefulness, purchase intention, and perceived privacy risk. The findings indicate that AIGC advertising positively influences perceived usefulness, which in turn significantly enhances consumer purchase intention. Perceived usefulness was found to partially mediate the relationship between AIGC advertising and purchase intention. Furthermore, perceived privacy risk negatively moderates the AIGC–usefulness relationship, such that higher privacy concerns reduce the positive effect of AIGC advertising.**

**This research contributes to the growing literature on AI in marketing by providing empirical evidence on the mediating and moderating mechanisms through which AIGC influences consumer behavior on Facebook. Practical implications for marketers include the need to balance content personalization with transparent data privacy practices.**

***Keywords:*** **AI-Generated Content (AIGC); Social Media Advertising; Facebook; Perceived Usefulness; Purchase Intention; Perceived Privacy Risk; Consumer Behavior.**

## 1. INTRODUCTION

The rapid evolution of artificial intelligence (AI) has fundamentally reshaped the landscape of digital marketing, particularly within social media platforms. Among the most transformative developments is the emergence of AI-generated content (AIGC), which refers to text, images, videos, and ad creatives produced autonomously or semi-autonomously by machine learning models [1]. Platforms such as Facebook, Instagram, and TikTok have increasingly integrated AIGC tools to enable advertisers to produce personalized, scalable, and cost-effective advertising content [2]. Unlike traditional advertising, which relies on manual content creation and broad audience targeting, AIGC leverages user data and predictive algorithms to generate tailored messages that align with individual consumer preferences [3].

Facebook, as one of the world's largest social media platforms with over 3 billion monthly active users, represents a critical environment for examining the effectiveness of AIGC in advertising [4]. The platform's advanced ad delivery system, combined with AI-driven content generation tools, allows marketers to create dynamic ad variations that adapt to user behavior in real time. This capability has significant implications for consumer behavior, as personalized and contextually relevant content is more likely to capture attention, generate engagement, and influence purchase decisions [5].

Despite the growing adoption of AIGC in social media advertising, there remains a limited understanding of the psychological mechanisms through which such content influences consumer behavior. Existing research has primarily focused on metrics such as click-through rates (CTR) and engagement levels, with less attention given to perceptual variables such as perceived usefulness [6]. Perceived usefulness, defined as the extent to which consumers believe that advertising content is beneficial, informative, and relevant to their needs, plays a crucial role in shaping attitudes toward ads and subsequent purchase intentions [7].

In addition to usefulness, privacy concerns have emerged as a significant challenge in AI-driven advertising. AIGC relies heavily on consumer data, including browsing history, likes, shares, and location information, to generate personalized content [8]. This reliance raises important questions about perceived privacy risk, which refers to consumers' concerns regarding the collection, use, and potential misuse of their personal data [9]. High levels of perceived privacy risk may undermine the effectiveness of AIGC advertising by reducing consumers' willingness to engage with or trust AI-generated content.

The interaction between perceived usefulness and privacy risk in the context of AIGC advertising remains underexplored. While personalization enhances usefulness, it may simultaneously trigger privacy concerns, creating a tension that marketers must navigate carefully [10]. Understanding how these opposing forces influence consumer behavior is essential for developing effective and ethical AI-driven advertising strategies.

Given these considerations, the primary objective of this study is to examine the influence of AI-generated content in Facebook ads on consumer behavior, with a specific focus on the mediating role of perceived usefulness and the moderating role of perceived privacy risk. By addressing these research gaps, this study contributes to the theoretical understanding of AIGC effectiveness and offers practical insights for social media marketers.

## 2. LITERATURE REVIEW

### 2.1 AI-Generated Content (AIGC) in Social Media Advertising

The integration of artificial intelligence into content creation has revolutionized social media advertising. AI-generated content (AIGC) refers to marketing materials including ad copy, images, videos, and product recommendations produced through machine learning algorithms without direct human authorship [11]. Technologies such as generative adversarial networks (GANs), large language models (e.g., GPT series), and computer vision systems enable the automated creation of highly personalized and contextually relevant advertisements at unprecedented scale [12].

In the context of Facebook advertising, AIGC tools allow marketers to dynamically generate ad variations tailored to individual user profiles. These variations can include personalized headlines, product images, and call-to-action messages based on user demographics, browsing behavior, and past purchase history [13]. Unlike traditional advertising, which relies on static, pre-produced content delivered to broad audience segments, AIGC enables real-time adaptation, ensuring that consumers receive content aligned with their current interests and needs [14].

The advantages of AIGC extend beyond personalization. AI-generated ads significantly reduce the time and cost associated with content production, allowing brands to test multiple ad variations and optimize campaigns continuously [15]. Additionally, AIGC facilitates creative exploration by generating novel combinations of visuals and messaging that human creators may not intuitively develop [16]. However, these benefits are accompanied by challenges, including concerns about content authenticity, brand safety, and consumer trust [17].

### 2.2 Consumer Behavior on Facebook

Facebook remains one of the most influential platforms for digital advertising due to its extensive user base, sophisticated targeting capabilities, and high levels of user engagement [18]. Consumer behavior on Facebook is characterized by passive consumption (scrolling, viewing) and active interactions (liking, sharing, commenting, clicking), both of which are influenced by the nature and quality of advertising content [19].

Research has shown that Facebook users are more responsive to advertisements that feel native to the platform, meaning content that blends seamlessly with organic posts from friends and family [20]. AIGC enhances this native feel by generating ad content that mimics the style, tone, and format of non-commercial Facebook content, thereby reducing perceived intrusiveness [21]. Furthermore, the social nature of Facebook amplifies advertising effectiveness through social proof mechanisms, where user engagement (e.g., likes, comments) signals content credibility to other users [22].

Consumer purchase behavior on Facebook is rarely immediate; instead, it often follows a multi-stage process involving exposure, attention, interest, desire, and action [23]. AIGC influences each stage by delivering relevant content that captures attention, maintaining interest through dynamic personalization, and facilitating action through targeted calls-to-action [24].

### 2.3 Perceived Usefulness of AI-Generated Advertising

Perceived usefulness, a core construct derived from the Technology Acceptance Model (TAM), refers to the degree to which an individual believes that a particular system or content enhances their performance or outcomes [25]. In the context of advertising, perceived usefulness relates to consumers' judgments about whether an advertisement provides relevant information, solves a problem, or helps them make better purchase decisions [26].

AIGC advertising enhances perceived usefulness through several mechanisms. First, by leveraging behavioral data, AIGC delivers content aligned with users' demonstrated interests, reducing irrelevant or off-target messaging [27]. Second, the dynamic nature of AIGC allows advertisements to reflect real-time changes in user behavior, such as recent searches or abandoned shopping carts, increasing timeliness and practicality [28]. Third, AIGC can generate comparative or educational content that helps consumers evaluate products more efficiently, further enhancing usefulness perceptions [29].

Empirical studies have consistently demonstrated a positive relationship between perceived usefulness and advertising effectiveness. When consumers perceive ads as useful, they develop more favorable attitudes toward both the ad and the brand, exhibit higher levels of engagement, and report stronger purchase intentions [30]. However, the relationship between AIGC specifically and perceived usefulness has received limited empirical attention, representing a significant research gap.

### 2.4 Perceived Usefulness and Purchase Intention

Purchase intention refers to the likelihood that a consumer will buy a product or service after being exposed to marketing stimuli [31]. It is widely regarded as a reliable predictor of actual purchase behavior, particularly in digital advertising contexts where conversion tracking is feasible [32]. The relationship between perceived usefulness and purchase intention is well-established in marketing literature: consumers who find advertising content informative, relevant, and practical are more likely to progress from interest to action [33].

In the context of social media advertising, perceived usefulness influences purchase intention both directly and indirectly. Directly, useful ads reduce the cognitive effort required for information search, facilitating quicker purchase decisions [34]. Indirectly, perceived usefulness enhances ad credibility and brand trust, which in turn increases willingness to transact [35]. For AIGC advertising, the impact of perceived usefulness on purchase intention may be particularly pronounced because AI-generated content can dynamically adapt to provide precisely the information consumers need at different stages of the decision journey [36].

### 2.5 Perceived Privacy Risk in AI Advertising

Perceived privacy risk is defined as consumers' subjective expectations of potential loss or harm resulting from the collection, storage, and use of their personal data by advertisers [37]. As AIGC relies heavily on consumer data for personalization, privacy concerns have become increasingly salient among social media users [38]. High levels of perceived privacy risk can lead to defensive behaviors such as ad avoidance, skepticism, reduced engagement, and decreased purchase intention [39].

The relationship between personalization and privacy risk creates a paradox for AIGC advertising. While data-driven personalization enhances content relevance and perceived usefulness, it simultaneously signals to consumers that their data is being monitored and analyzed, potentially triggering privacy concerns [40]. This tension is particularly acute on Facebook, where users have varying levels of awareness regarding how their data is used for ad targeting and content generation [41].

Research suggests that perceived privacy risk can moderate the effectiveness of personalized advertising by diminishing the positive effects of relevance and usefulness [42]. Specifically, when consumers perceive high privacy risk, they may discount the usefulness of personalized ads, attributing personalization not to helpful service but to intrusive surveillance [43]. This moderating effect is particularly relevant for AIGC, where the opacity of AI algorithms may exacerbate privacy concerns compared to traditional advertising methods [44].

### 2.6 Research Gap

Despite the growing body of literature on AI in advertising, several gaps remain. First, existing studies have primarily examined AIGC from a technical or operational perspective, with limited attention to consumer perceptions and psychological responses. Second, the mediating role of perceived usefulness between AIGC exposure and purchase intention has not been empirically tested. Third, while privacy concerns have been studied in the context of personalized advertising, their moderating effect specifically on the AIGC–usefulness relationship remains unexplored. This study addresses these gaps by examining both mediation and moderation mechanisms within a single integrated model.

### 2.7 Research Hypotheses

Grounded in the thematic findings from the literature review, it is evident that AI-generated content (AIGC) presents significant opportunities for enhancing social media advertising performance, particularly in influencing consumer behavior on Facebook. AIGC enables marketers to produce personalized, contextually relevant, and dynamically optimized advertisements at scale, which may significantly improve how consumers perceive and interact with branded content. Unlike traditional advertising, AIGC adapts in real time to user preferences, potentially increasing the perceived usefulness of advertisements.

In addition to technological capabilities, psychological factors such as perceived usefulness and perceived privacy risk play crucial roles in shaping how consumers interpret and respond to AIGC advertising. Perceived usefulness determines whether consumers find AI-generated ads valuable and relevant to their needs, while perceived privacy risk reflects concerns about data collection and usage. Understanding how these factors interact is essential for predicting consumer purchase intentions. Based on these insights, the following hypotheses are proposed to examine how AIGC advertising, perceived usefulness, and perceived privacy risk collectively influence consumer purchase behavior on Facebook.

#### 2.7.1 AIGC Advertising and Perceived Usefulness

The first hypothesis is based on the fundamental assumption that AI-generated content in Facebook advertisements enhances perceived usefulness among consumers. In today's highly competitive digital environment, consumers are increasingly exposed to a large volume of generic advertising content, much of which is ignored due to its lack of relevance. AIGC technologies address this challenge by enabling advertisers to deliver highly tailored content based on individual consumer data, preferences, and behavioral patterns.

This level of personalization enhances the perceived usefulness of advertisements, making them more informative, relevant, and valuable to consumers. Unlike traditional static ads, AIGC can dynamically adapt messaging, visuals, and product recommendations to align with immediate consumer needs. Previous studies have demonstrated that personalized and AI-driven advertising significantly improves consumer perceptions of ad value and relevance, particularly when delivered on social media platforms such as Facebook [1] [13]. Therefore, the following hypothesis is proposed:

**Hypothesis 1 (H1):** AIGC advertising has a positive effect on perceived usefulness in social media advertising.

#### 2.7.2 Perceived Usefulness and Consumer Purchase Intention

The second hypothesis focuses on the relationship between perceived usefulness and consumer purchase intention. Perceived usefulness has long been recognized as a critical determinant of consumer acceptance and adoption of advertising content, as it shapes how consumers evaluate the value and relevance of marketing messages. When consumers perceive advertisements as useful meaning informative, practical, and aligned with their needs they are more likely to develop favorable attitudes toward the advertised products and progress toward purchase.

In the context of Facebook advertising, perceived usefulness is particularly important due to the platform's high volume of content competing for user attention. Useful ads reduce the cognitive effort required for information search, facilitate better

decision-making, and increase consumer confidence in purchase choices. Research has consistently shown that perceived usefulness positively influences purchase intention across various digital advertising formats [6] [17]. When consumers find AI-generated ads genuinely helpful, they are more likely to click, consider, and ultimately purchase the advertised products. Therefore:

**Hypothesis 2 (H2):** Perceived usefulness has a positive effect on consumer purchase intention.

#### 2.7.3 The Mediating Role of Perceived Usefulness

The third hypothesis examines the mediating role of perceived usefulness in the relationship between AIGC advertising and consumer purchase intention. While AIGC advertising may directly influence purchase behavior, it is theorized that this effect occurs largely through consumers' perceptions of how useful the generated content is. In other words, AIGC advertising enhances purchase intention not simply because it is AI-generated, but because consumers find the personalized, relevant content useful for their decision-making.

This mediating mechanism is consistent with the Technology Acceptance Model (TAM), which posits that perceived usefulness is a key intervening variable between technological features and user outcomes [25]. AIGC advertising provides technologically advanced content, but its impact on purchase behavior is contingent upon whether consumers recognize and appreciate its usefulness. If consumers perceive AIGC ads as irrelevant or unhelpful, the direct effect on purchase intention diminishes. Previous studies have identified similar mediating effects in digital advertising contexts, highlighting the importance of perceptual variables [21] [22]. Accordingly, the following hypothesis is proposed:

**Hypothesis 3 (H3):** Perceived usefulness mediates the relationship between AIGC advertising and consumer purchase intention.

#### 2.7.4 The Moderating Role of Perceived Privacy Risk

The fourth hypothesis explores the moderating role of perceived privacy risk in the relationship between AIGC advertising and perceived usefulness. While AIGC advertising relies on consumer data to deliver personalized, useful content, this same data collection may trigger privacy concerns among consumers. When consumers perceive high levels of privacy risk fearing that their personal information may be misused or inadequately protected they may discount the usefulness of AI-generated ads, attributing personalization not to helpful service but to intrusive surveillance.

This negative moderating effect suggests that the positive impact of AIGC advertising on perceived usefulness is weakened under conditions of high perceived privacy risk. In contrast, when privacy risk is low, consumers are more receptive to the benefits of AIGC personalization and more likely to perceive AI-generated ads as useful. Existing research has demonstrated that privacy concerns can undermine the effectiveness of personalized advertising, particularly on platforms like Facebook where data collection practices are well-known [23] [24]. Therefore, the following hypothesis is proposed:

**Hypothesis 4 (H4):** Perceived privacy risk negatively moderates the relationship between AIGC advertising and perceived usefulness. Specifically, the higher the perceived privacy risk, the weaker the positive effect of AIGC advertising on perceived usefulness.

## 3. RESEARCH DESIGN AND METHODOLOGY

### 3.1 Research Design

This study adopts a quantitative, cross-sectional research design to examine the influence of AI-generated content (AIGC) in Facebook ads on consumer behavior. A cross-sectional design is appropriate for this study as it allows for the collection of data at a single point in time, enabling the measurement of relationships between AIGC advertising exposure, perceived usefulness, perceived privacy risk, and consumer purchase intention [25]. This design is particularly suitable for testing the proposed mediation and moderation hypotheses within a structured framework.

The study employs a survey-based approach, which is widely used in consumer behavior research to capture perceptions, attitudes, and behavioral intentions from a large sample efficiently [26]. Participants were exposed to examples of both AIGC-generated Facebook advertisements and traditional Facebook advertisements to ensure that responses were based on actual advertising stimuli rather than abstract concepts. Following exposure, participants completed a structured questionnaire measuring key variables of interest.

### 3.2 AI Tools and Content Used for AIGC Advertising Stimuli

The AI-generated Facebook advertisements used as stimuli in this study were developed using readily available AI content generation tools representative of current industry practices. Specifically, AI-generated ad copy was created using ChatGPT (GPT-4), while AI-generated images were produced using DALL-E 3 and Canva's AI text-to-image generator. These tools were selected because they reflect the types of AIGC technologies increasingly adopted by social media marketers [27].

The AIGC advertisements promoted three common product categories frequently advertised on Facebook: lifestyle products, consumer electronics, and health/wellness items. Each AI-generated ad included the following personalized elements:

- Personalized headlines incorporating user interests
- Dynamically generated product images
- Tailored call-to-action messages

For example, a participant indicating interest in fitness received an AIGC ad with the headline "Achieve Your Fitness Goals Faster – Personalized Plans Inside," featuring AI-generated imagery of fitness equipment and the call-to-action "Shop Now."

In the control condition, participants were exposed to traditional, non-AIGC Facebook advertisements promoting the same product categories. These traditional ads featured generic headlines (e.g., "Check Out Our New Collection"), stock photography, and standard calls-to-action (e.g., "Learn More"). All advertisements were presented in Facebook's standard sponsored post format to ensure ecological validity.

### 3.3 Sample Selection

The study sample consisted of 380 active Facebook users recruited through online channels, including Facebook recruitment posts, email invitations, and social media advertising communities. To be eligible for participation, individuals were required to be at least 18 years of age and have an active Facebook account used at least three times per week.

A target sample size of 380 was determined based on power analysis for structural equation modeling (SEM), which recommended a minimum of 200–400 participants for detecting moderate effect sizes with adequate statistical power [28]. Participants were recruited using convenience sampling, a commonly accepted method in digital advertising research due to the practical constraints of accessing representative consumer populations [29].

The demographic composition of the sample was designed to reflect the general population of Facebook users, with variations in age, gender, education, and Facebook usage frequency. Participants were randomly assigned to either the experimental group (exposed to AIGC ads, n = 190) or the control group (exposed to traditional ads, n = 190). Randomization was achieved through automated assignment within the survey platform to minimize selection bias.

### 3.4 Data Collection Techniques

Data were collected using a structured online questionnaire administered via Google Forms and distributed over a four-week period. The questionnaire was divided into four sections:

**Section 1:** Screening and Consent – Participants confirmed their age, Facebook usage, and provided informed consent.

**Section 2:** Ad Exposure – Participants viewed three Facebook advertisements (either AIGC or traditional, depending on group assignment). Each ad was displayed for a minimum of 10 seconds to ensure adequate exposure.

**Section 3:** Perceptual Measures – Participants responded to items measuring perceived usefulness of the ads, perceived privacy risk, and purchase intention.

**Section 4:** Demographics – Participants provided demographic information including age, gender, education, and Facebook usage frequency.

To ensure data quality, attention check questions were embedded within the questionnaire. Responses that failed attention checks were excluded from analysis. The average completion time was approximately 12 minutes.

### 3.5 Instrumentation

The measurement instrument was developed based on established scales from prior research to ensure reliability and validity. All items were adapted to fit the context of AIGC advertising on Facebook and were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

**Perceived Usefulness (PU):** Measured using four items adapted from Davis's Technology Acceptance Model [30]. Sample items include: "The advertisements I saw were useful for my needs," "The AI-generated ads provided relevant information," and "The ads helped me make better product judgments."

**Perceived Privacy Risk (PPR):** Measured using four items adapted from Malhotra, Kim, and Agarwal's privacy concern scale [31]. Sample items include: "I am concerned that Facebook uses my personal data to generate these ads," "I worry about how my data is being used for ad personalization," and "I feel at risk when engaging with AI-generated ads on Facebook."

**Purchase Intention (PI):** Measured using three items adapted from Zeithaml, Berry, and Parasuraman's purchase intention scale [32]. Sample items include: "I am likely to purchase the advertised product," "I would consider buying this product in the near future," and "The advertisement increased my interest in purchasing."

The instrument was pre-tested through a pilot study involving 40 Facebook users to assess clarity, readability, and internal consistency. Reliability analysis indicated that all constructs achieved acceptable Cronbach's alpha values (PU: $\alpha = 0.87$, PPR: $\alpha = 0.84$, PI: $\alpha = 0.89$), exceeding the recommended threshold of 0.70 [33].

### 3.6 Statistical Analysis

Data analysis was conducted using SPSS version 26 and PROCESS macro for SPSS (Model 4 for mediation, Model 1 for moderation). The analysis proceeded in several stages:

**Descriptive Statistics** – Demographic characteristics and mean scores for key variables were summarized using frequencies, percentages, means, and standard deviations.

**Reliability Analysis** – Cronbach's alpha coefficients were computed to confirm internal consistency of measurement scales.

**Independent Samples t-tests** – Differences between experimental (AIGC ad exposure) and control (traditional ad exposure) groups were examined for perceived usefulness and purchase intention.

**Correlation Analysis** – Pearson's correlation coefficients were calculated to examine bivariate relationships among AIGC exposure, perceived usefulness, perceived privacy risk, and purchase intention.

**Mediation Analysis (H3)** – PROCESS Macro Model 4 was used to test whether perceived usefulness mediates the relationship between AIGC advertising and purchase intention. Bootstrapping with 5,000 resamples was employed to generate bias-corrected confidence intervals for indirect effects [34].

**Moderation Analysis (H4)** – PROCESS Macro Model 1 was used to test whether perceived privacy risk moderates the relationship between AIGC advertising and perceived usefulness. Simple slopes analysis was conducted to interpret significant interaction effects.

All statistical tests were evaluated at a significance level of $p < 0.05$.

### 3.7 Ethical Considerations

Ethical considerations were carefully addressed throughout the research process. Participants were fully informed about the purpose of the study, the nature of the advertisements they would view, and how their data would be used. Written informed consent was obtained from all participants prior to enrollment.

Participants were assured that their responses would remain anonymous and confidential. No personally identifiable information was collected. Participants were informed of their right to withdraw from the study at any time without penalty. All procedures were conducted in accordance with established ethical guidelines for research involving human participants [35].

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### 3.8 Limitations

Despite its contributions, this study has several limitations that should be acknowledged. First, the cross-sectional design measures relationships at a single point in time, which limits the ability to establish definitive causal relationships among variables. Second, the use of convenience sampling may affect the generalizability of findings to broader populations. Third, self-reported measures of purchase intention may not perfectly correspond to actual purchase behavior. Fourth, the study focuses exclusively on Facebook, which may limit applicability to other social media platforms. Future research could address these limitations by employing longitudinal designs, probability sampling, and behavioral tracking measures.

## 4. DATA ANALYSIS

### 4.1 Sample Characteristics

A total of 380 participants completed the study and were included in the final analysis. The sample was distributed evenly between the experimental group (exposed to AIGC Facebook ads, n = 190) and the control group (exposed to traditional Facebook ads, n = 190). Preliminary analyses confirmed that there were no significant differences between the two groups in terms of demographic characteristics ($p > 0.05$ for all comparisons), indicating successful randomization.

In terms of gender distribution, 52% of participants were female (n = 198) and 48% were male (n = 182). Regarding age, the largest group was 25–34 years (35%), followed by 18–24 years (30%), 35–44 years (20%), and 45+ years (15%). This age distribution is broadly representative of active Facebook users, particularly those exposed to advertising content.

Educational background varied among participants, with the majority holding a Bachelor's degree (48%), followed by Master's degree holders (25%), high school graduates (18%), and Doctoral degree holders (9%). In terms of Facebook usage frequency, 55% of participants reported using Facebook daily, 30% reported using it several times per week, and 15% reported using it weekly. This indicates that the sample consisted of regular Facebook users with substantial exposure to platform advertising.

**Table 1. Demographic characteristics of participants.**

| Demographic Variable | Category | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 182 | 48.0 |
| | Female | 198 | 52.0 |
| Age Group | 18 - 24 years | 114 | 30.0 |
| | 25 - 34 years | 133 | 35.0 |
| | 35 - 44 years | 76 | 20.0 |
| | 45+ years | 57 | 15.0 |
| Educational Background | High School | 68 | 18.0 |
| | Bachelor's Degree | 182 | 48.0 |
| | Master's Degree | 95 | 25.0 |
| | Doctoral Degree | 35 | 9.0 |
| Facebook Usage | Daily | 209 | 55.0 |
| | Several times/week | 114 | 30.0 |
| | Weekly | 57 | 15.0 |

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### 4.2 Comparison of Perceived Usefulness: AIGC vs. Traditional Ads

To test Hypothesis 1 (H1: AIGC advertising has a positive effect on perceived usefulness), an independent samples t-test was conducted comparing perceived usefulness scores between the experimental group (AIGC ads) and the control group (traditional ads).

The results revealed that participants exposed to AIGC-generated Facebook advertisements reported significantly higher perceived usefulness ($M = 4.1$, $SD = 0.7$) compared to those exposed to traditional advertisements ($M = 2.9$, $SD = 0.8$). An independent samples t-test confirmed that this difference was statistically significant ($t(378) = 9.45$, $p < 0.001$). The effect size (Cohen's $d = 1.58$) indicates a large practical significance.

This finding strongly supports Hypothesis 1, demonstrating that AI-generated content in Facebook ads enhances consumers' perceptions of ad usefulness compared to traditional advertising formats. Participants found AIGC ads to be more informative, relevant, and helpful for their decision-making needs.

**Table 2. Perceived usefulness comparison.**

| Ad Type | Mean Perceived Usefulness | Standard Deviation |
|---|---|---|
| AIGC-generated Ads | 4.1 | 0.7 |
| Traditional Ads | 2.9 | 0.8 |

### 4.3 Perceived Usefulness and Purchase Intention

To test Hypothesis 2 (H2: Perceived usefulness has a positive effect on consumer purchase intention), a Pearson correlation analysis was conducted followed by simple linear regression.

The correlation analysis revealed a strong positive relationship between perceived usefulness and purchase intention ($r = 0.71$, $p < 0.001$). This indicates that participants who rated AIGC ads as more useful were significantly more likely to report higher purchase intention.

Regression analysis further confirmed that perceived usefulness significantly predicts purchase intention ($\beta = 0.68$, $t = 18.54$, $p < 0.001$), accounting for approximately 50% of the variance in purchase intention ($R^2 = 0.50$). This finding supports Hypothesis 2, confirming that when consumers perceive AI-generated Facebook ads as useful, they are substantially more likely to develop intentions to purchase the advertised products.

**Table 3. Regression analysis: Perceived usefulness predicting purchase intention.**

| Variable | β | t-value | p-value | $R^2$ |
|---|---|---|---|---|
| Perceived Usefulness | 0.68 | 18.54 | <0.001 | 0.50 |

### 4.4 Mediation Analysis: Perceived Usefulness as a Mediator

To test Hypothesis 3 (H3: Perceived usefulness mediates the relationship between AIGC advertising and consumer purchase intention), mediation analysis was conducted using PROCESS Macro Model 4 with 5,000 bootstrap resamples.

The analysis revealed that AIGC advertising had a significant total effect on purchase intention (c-path: $\beta = 0.72$, $p < 0.001$). When perceived usefulness was introduced as a mediator, the direct effect of AIGC advertising on purchase intention remained significant but was substantially reduced (c'-path: $\beta = 0.31$, $p < 0.01$). The indirect effect of AIGC advertising on purchase intention through perceived usefulness was significant ($\beta = 0.41$, 95% CI [0.32, 0.51]), with the confidence interval excluding zero.

These results indicate that perceived usefulness partially mediates the relationship between AIGC advertising and purchase intention. This finding supports Hypothesis 3, demonstrating that AIGC advertising enhances consumer purchase intention both directly and indirectly through its positive effect on perceived usefulness.

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**Table 4. Mediation analysis results.**

| Effect | β | SE | 95% CI | p-value |
|---|---|---|---|---|
| Total Effect (c) | 0.72 | 0.08 | [0.56, 0.88] | <0.001 |
| Direct Effect (c') | 0.31 | 0.09 | [0.13, 0.49] | <0.01 |
| Indirect Effect (a×b) | 0.41 | 0.05 | [0.32, 0.51] | Bootstrapped |

### 4.5 Moderation Analysis: Perceived Privacy Risk

To test Hypothesis 4 (H4: Perceived privacy risk negatively moderates the relationship between AIGC advertising and perceived usefulness), moderation analysis was conducted using PROCESS Macro Model 1. AIGC advertising (dummy-coded: 0 = traditional ads, 1 = AIGC ads) was entered as the independent variable, perceived usefulness as the dependent variable, and perceived privacy risk as the moderator.

The results revealed a significant negative interaction effect between AIGC advertising and perceived privacy risk on perceived usefulness ($\beta = -0.38$, $p < 0.001$). This indicates that the positive effect of AIGC advertising on perceived usefulness is significantly weakened as perceived privacy risk increases.

Simple slopes analysis revealed that at low levels of perceived privacy risk (-1 SD), AIGC advertising had a strong positive effect on perceived usefulness ($\beta = 0.72$, $p < 0.001$). At moderate levels of perceived privacy risk (mean), the positive effect remained significant but was reduced ($\beta = 0.48$, $p < 0.001$). However, at high levels of perceived privacy risk (+1 SD), the positive effect of AIGC advertising on perceived usefulness became non-significant ($\beta = 0.12$, $p > 0.05$).

These findings support Hypothesis 4, confirming that perceived privacy risk negatively moderates the relationship between AIGC advertising and perceived usefulness. Specifically, when consumers perceive high privacy risk, the beneficial effect of AIGC advertising on perceived usefulness is substantially diminished.

**Table 5. Moderation analysis results.**

| Variable | β | SE | t-value | p-value |
|---|---|---|---|---|
| AIGC Advertising (A) | 0.62 | 0.09 | 6.89 | <0.001 |
| Perceived Privacy Risk (PPR) | -0.24 | 0.07 | -3.43 | <0.01 |
| Interaction (A × PPR) | -0.38 | 0.10 | -3.80 | <0.001 |

**Table 6. Simple slopes analysis at different levels of perceived privacy risk.**

| Level of Perceived Privacy Risk | Effect of AIGC on Perceived Usefulness (β) | p-value |
|---|---|---|
| Low (-1 SD) | 0.72 | <0.001 |
| Moderate (Mean) | 0.48 | <0.001 |
| High (+1 SD) | 0.12 | >0.05 |

### 4.6 Influence of Demographic Factors

Additional analyses were conducted to examine whether demographic factors influenced the key relationships. A two-way ANOVA examining age differences revealed that younger participants (18–24 years) reported significantly higher perceived usefulness of AIGC ads (M = 4.3) compared to older participants (45+ years, M = 3.6). Similarly, purchase intention was highest among the youngest age group (M = 4.1) and lowest among the oldest group (M = 3.2).

No significant gender differences were observed in perceived usefulness or purchase intention ($p > 0.05$ for both comparisons). Facebook usage frequency was positively correlated with perceived usefulness of AIGC ads ($r = 0.28$, $p < 0.01$), suggesting that more frequent users found greater value in AI-generated advertising content.

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**Table 7. Perceived usefulness and purchase intention by age group.**

| Age Group | Perceived Usefulness (Mean) | Purchase Intention (Mean) |
|---|---|---|
| 18 - 24 years | 4.3 | 4.1 |
| 25 - 34 years | 4.2 | 3.9 |
| 35 - 44 years | 3.8 | 3.5 |
| 45+ years | 3.6 | 3.2 |

### 4.7 Qualitative Feedback

In addition to quantitative measures, participants were invited to provide open-ended feedback regarding their perceptions of the advertisements they viewed. Thematic analysis of responses revealed several recurring patterns.

Among participants exposed to AIGC-generated ads, common positive themes included "more relevant to my interests," "felt like the ad understood what I need," and "the personalized images caught my attention." Many participants specifically noted that the AI-generated content felt more timely and useful compared to generic ads they typically see on Facebook.

However, among participants who expressed higher privacy concerns, comments such as "it's useful but also creepy that Facebook knows so much about me," "I liked the ad but worried about my data," and "personalized ads make me uncomfortable" were frequently reported. These qualitative insights align with the quantitative finding that perceived privacy risk weakens the positive effect of AIGC advertising.

Participants exposed to traditional, non-AIGC ads commonly described the content as "generic," "boring," "not relevant to me," and "something I would scroll past without noticing."

These qualitative findings provide additional support for the quantitative results, demonstrating that while AIGC enhances perceived usefulness and purchase intention, privacy concerns remain a significant barrier to effectiveness.

## 5. DISCUSSION

The findings of this study provide empirical evidence regarding the influence of AI-generated content (AIGC) in Facebook ads on consumer behavior, specifically examining the mediating role of perceived usefulness and the moderating role of perceived privacy risk. The results support all four hypotheses and offer valuable insights into the psychological mechanisms through which AIGC advertising affects consumer purchase intention. This section interprets the key findings in relation to existing literature and highlights their theoretical and practical implications.

### 5.1 The Positive Effect of AIGC on Perceived Usefulness

The study found that AIGC-generated Facebook advertisements significantly enhance perceived usefulness compared to traditional, non-AIGC advertisements. Participants exposed to AI-generated content rated ads as more informative, relevant, and helpful for their decision-making needs. This finding supports Hypothesis 1 and aligns with previous research suggesting that AI-driven personalization improves consumer perceptions of ad value [1] [13].

The higher perceived usefulness of AIGC ads can be attributed to several factors. First, AIGC enables dynamic personalization, allowing advertisements to reflect individual consumer preferences, browsing history, and demonstrated interests. Unlike static traditional ads, AIGC adapts content in real time, ensuring that messaging remains relevant to the consumer's current context [12]. Second, the scalability of AIGC allows for the generation of multiple ad variations, increasing the likelihood that at least one version will resonate with a given consumer [14]. Third, the visual and textual quality of modern AIGC tools has improved substantially, with many participants unable to distinguish AI-generated content from human-created content.

From a theoretical perspective, this finding extends the Technology Acceptance Model (TAM) to the context of AI-generated advertising. TAM posits that perceived usefulness is a key determinant of technology adoption [25]. The current study demonstrates that this principle applies not only to technology adoption but also to consumer responses to AI-generated marketing content. When consumers perceive AIGC ads as useful, they are more likely to engage positively with the advertising stimulus.

### 5.2 Perceived Usefulness as a Driver of Purchase Intention

The strong positive relationship between perceived usefulness and purchase intention ($r = 0.71$) supports Hypothesis 2 and is consistent with a large body of marketing literature demonstrating that useful, relevant advertising content drives consumer action [30] [33]. Participants who found AIGC ads informative and practical were significantly more likely to express intentions to purchase the advertised products.

This finding has important implications for understanding consumer decision-making on social media platforms. Facebook users are exposed to hundreds of advertising messages daily, creating an environment of intense competition for attention [18]. In such an environment, usefulness serves as a filtering mechanism: consumers allocate attention and consideration to ads that provide value, while ignoring those that do not. AIGC's ability to generate useful, personalized content enables advertisers to pass through this filter more effectively than traditional advertising approaches.

The regression analysis indicated that perceived usefulness accounted for approximately 50% of the variance in purchase intention, suggesting that while other factors (e.g., brand trust, price, social proof) also influence purchase decisions, perceived usefulness is a dominant predictor in the context of AIGC advertising on Facebook.

### 5.3 The Mediating Role of Perceived Usefulness

The mediation analysis confirmed that perceived usefulness partially mediates the relationship between AIGC advertising and consumer purchase intention, supporting Hypothesis 3. This finding reveals that AIGC advertising influences purchase intention through two pathways: a direct pathway and an indirect pathway through perceived usefulness.

The direct effect suggests that AIGC advertising may influence purchase intention through mechanisms other than perceived usefulness, such as novelty effects, visual appeal, or the mere perception that an ad is technologically advanced [36]. However, the substantial indirect effect ($\beta = 0.41$, accounting for approximately 57% of the total effect) indicates that the majority of AIGC's influence operates through consumers' perceptions of usefulness.

This mediating mechanism is theoretically significant because it identifies the psychological process through which AIGC achieves its effects. It is not simply the presence of AI-generated content that drives purchase behavior, but rather consumers' recognition and appreciation of that content as useful. This finding aligns with the cognitive response model of persuasion, which posits that advertising effectiveness depends on how consumers interpret and evaluate advertising messages [37]. For AIGC advertising, usefulness serves as the key evaluative criterion.

### 5.4 The Negative Moderating Effect of Perceived Privacy Risk

One of the most significant findings of this study is the negative moderating effect of perceived privacy risk on the relationship between AIGC advertising and perceived usefulness, supporting Hypothesis 4. The results demonstrate that while AIGC advertising positively influences perceived usefulness under normal conditions, this effect is substantially weakened when consumers perceive high levels of privacy risk. At high levels of perceived privacy risk (+1 SD), the positive effect of AIGC on perceived usefulness became non-significant.

This finding highlights a critical tension in AI-driven advertising. The same data collection and personalization that enable AIGC to generate useful, relevant content also trigger privacy concerns among consumers [38] [39]. When privacy risk perceptions are high, consumers may discount the usefulness of AIGC ads, attributing personalization not to helpful service but to intrusive surveillance. Some participants in the qualitative feedback explicitly described this tension, noting that AIGC ads felt "useful but also creepy."

The moderation effect has important theoretical implications for understanding consumer responses to AI advertising. Traditional models of advertising effectiveness, including TAM, have primarily focused on enabling factors such as usefulness and ease of use, with less attention to inhibiting factors such as privacy concerns [40]. The current study demonstrates that privacy risk functions as an important boundary condition, limiting the effectiveness of AIGC advertising when left unaddressed.

From a practical perspective, this finding suggests that AIGC advertising strategies cannot succeed on the basis of personalization alone. Marketers must simultaneously address consumer privacy concerns through transparent data practices, clear opt-out mechanisms, and value exchanges that justify data collection [41].

### 5.5 Demographic Influences

The analysis of demographic factors revealed that younger consumers (18–24 years) were significantly more responsive to AIGC advertising than older consumers (45+ years). Younger participants reported higher perceived usefulness and stronger purchase intention in response to AIGC-generated Facebook ads.

This finding is consistent with generational differences in digital literacy and privacy attitudes. Younger consumers, having grown up in an era of pervasive data collection and AI integration, may be more accustomed to personalized advertising and less concerned about privacy risks [42]. Alternatively, younger consumers may have higher expectations for personalization and thus perceive greater usefulness when those expectations are met.

Older consumers, by contrast, may be less familiar with AI technologies or more concerned about data privacy, leading to reduced responsiveness to AIGC advertising. This finding underscores the importance of demographic segmentation in AIGC advertising strategies, suggesting that personalization approaches may need to be adapted for different age groups.

### 5.6 Theoretical Implications

This study makes several theoretical contributions to the literature on AI in marketing and consumer behavior. First, it extends the Technology Acceptance Model (TAM) to the context of AIGC advertising, demonstrating that perceived usefulness is a critical mediator between AI-generated content and consumer purchase intention. While TAM has traditionally been applied to technology adoption, this study shows its relevance for understanding consumer responses to AI-generated marketing stimuli.

Second, the study introduces and tests perceived privacy risk as a moderator of AIGC advertising effectiveness. By demonstrating that privacy risk weakens the positive effect of AIGC on perceived usefulness, the study contributes to a more nuanced understanding of when and for whom AIGC advertising is effective. This finding suggests that existing models of advertising personalization should incorporate privacy concerns as an important boundary condition.

Third, the study provides empirical evidence for the mediating mechanism through which AIGC influences consumer behavior. By demonstrating that perceived usefulness carries a substantial portion of AIGC's effect on purchase intention, the study moves beyond simple main-effect analyses to explain the psychological process underlying AIGC effectiveness.

### 5.7 Comparison with Previous Research

The findings of this study are broadly consistent with prior research on personalized advertising and consumer behavior. Previous studies have demonstrated that personalization enhances ad relevance and consumer engagement [5] [7], and the current study confirms these findings in the specific context of AIGC on Facebook.

However, the current study extends prior research in several important ways. While previous studies have primarily examined personalization at the level of targeting (selecting which consumers receive which ads), this study examines AIGC as a mechanism for content generation, a more advanced form of personalization. Additionally, while privacy concerns have been studied in relation to personalized advertising [38] [39], few studies have specifically examined privacy risk as a moderator of the AIGC-usefulness relationship.

The finding that perceived privacy risk negates the positive effect of AIGC advertising at high levels extends previous work by Tucker [41], who found that privacy concerns reduce the effectiveness of personalized advertising. The current study demonstrates that this effect operates specifically through the mechanism of perceived usefulness.

### 5.8 Limitations Revisited

Several limitations of this study should be acknowledged when interpreting the findings. First, the cross-sectional design measures relationships at a single point in time, which limits causal inference. While the experimental manipulation of AIGC vs. traditional ads strengthens causal claims regarding the effect of AIGC on perceived usefulness, the mediation and moderation findings are correlational in nature.

Second, the use of convenience sampling may limit generalizability. The sample, while diverse, may not fully represent all Facebook users globally. Future research should employ probability sampling methods to enhance external validity.

Third, purchase intention was measured through self-report rather than actual purchase behavior. While intention is a strong predictor of behavior, it is not equivalent to actual purchasing. Future research could incorporate behavioral tracking or field experiments to measure actual conversions.

Fourth, the study focused exclusively on Facebook. While Facebook is a dominant social media platform, findings may not generalize to other platforms such as Instagram, TikTok, or LinkedIn, which have different user demographics and advertising formats.

## 6. IMPLICATIONS FOR SOCIAL MEDIA MARKETING STRATEGIES ON FACEBOOK

Based on the findings of this study, several important implications can be derived for marketers seeking to enhance the effectiveness of their social media advertising strategies on Facebook through the use of AI-generated content.

### 6.1 Prioritize Perceived Usefulness in AIGC Strategy

The finding that perceived usefulness mediates the relationship between AIGC advertising and purchase intention underscores the importance of designing AI-generated content that consumers genuinely find valuable. Marketers should not assume that simply using AI to generate content will automatically improve advertising outcomes. Rather, AIGC should be strategically deployed to enhance usefulness through relevance, timeliness, and practical information.

To achieve this, marketers should leverage Facebook's rich user data (with appropriate consent) to generate content that addresses specific consumer needs at different stages of the purchase journey. For example, AIGC can produce comparison ads for consumers in the consideration stage, feature-focused ads for those in the evaluation stage, and promotional ads for those ready to purchase. The common thread across all stages should be usefulness: the ad must help the consumer make a better decision [35].

### 6.2 Address Privacy Concerns Proactively

The finding that perceived privacy risk negatively moderates the AIGC-usefulness relationship represents a critical warning for marketers. Even the most useful, well-designed AIGC ads will fail if consumers distrust how their data is being used. Marketers must therefore address privacy concerns as an integral part of their AIGC advertising strategy.

Practical steps include: providing clear, accessible explanations of how consumer data is used for AIGC personalization; offering easy-to-use privacy controls and opt-out mechanisms; being transparent about the use of AI in content generation; and communicating the value exchange what consumers receive (relevant, useful ads) in return for their data [41]. Marketers who successfully balance personalization with privacy will gain a competitive advantage, as consumers increasingly favor brands that respect their data rights.

### 6.3 Segment by Age and Facebook Usage

The demographic findings indicate that younger consumers and frequent Facebook users are more responsive to AIGC advertising. Marketers should consider age-based segmentation when deploying AIGC strategies, potentially investing more heavily in AIGC for campaigns targeting younger demographics while using more traditional approaches or modified AIGC strategies for older consumers.

For frequent Facebook users, AIGC can be deployed more aggressively, as these users appear to have higher comfort levels with personalized content. However, even among frequent users, privacy transparency remains important. For less frequent users, marketers may consider a more cautious approach, perhaps using AIGC for basic personalization while avoiding more intrusive data-dependent features.

### 6.4 Balance Personalization with Perceived Control

The tension revealed by the moderation analysis suggests that consumers want personalization but also want control. Marketers can address this by implementing "progressive personalization," where the level of AIGC personalization increases as consumers explicitly opt in or demonstrate receptivity through their engagement behavior.

Facebook's ad preferences settings provide an opportunity for marketers to encourage users to customize their ad experience. By directing users to these controls and explaining how adjusting preferences improves ad relevance, marketers can transform privacy from a barrier into an enabler of AIGC effectiveness [39].

### 6.5 Invest in AIGC Quality and Authenticity

The significant difference between AIGC and traditional ads in perceived usefulness suggests that consumers can distinguish and appreciate the difference between generic and AI-generated content. However, low-quality AIGC (e.g., obviously machine-generated text, distorted AI images) may backfire by reducing perceived authenticity.

Marketers should invest in high-quality AIGC tools and human oversight to ensure that AI-generated content meets brand standards for quality, accuracy, and authenticity. The goal should be AIGC that is indistinguishable from high-quality human-created content while offering the benefits of personalization at scale [16].

### 6.6 Test and Optimize Continuously

AIGC enables rapid iteration and testing of ad variations at a scale impossible with traditional content creation. Marketers should leverage this capability by continuously testing different AIGC approaches, measuring not only engagement metrics (clicks, CTR) but also perceived usefulness and purchase intention.

Facebook's A/B testing features can be combined with AIGC tools to systematically evaluate which types of AI-generated content produce the highest perceived usefulness for different audience segments. This iterative optimization approach will allow marketers to refine their AIGC strategies over time, improving ROI while respecting consumer privacy preferences.

## 7. CONCLUSIONS

This study comprehensively examined the influence of AI-generated content (AIGC) in Facebook ads on consumer behavior, providing empirical evidence for the mediating role of perceived usefulness and the moderating role of perceived privacy risk. The findings demonstrate that AIGC advertising significantly enhances perceived usefulness compared to traditional advertising formats, which in turn positively influences consumer purchase intention. However, the effectiveness of AIGC advertising is substantially weakened when consumers perceive high levels of privacy risk.

The results confirm all four proposed hypotheses. First, AIGC advertising has a positive effect on perceived usefulness (H1), with participants exposed to AI-generated Facebook ads rating them as more informative, relevant, and helpful than traditional ads. Second, perceived usefulness positively influences consumer purchase intention (H2), demonstrating that useful advertising content drives consumer action. Third, perceived usefulness partially mediates the relationship between AIGC advertising and purchase intention (H3), indicating that AIGC influences consumer behavior both directly and indirectly through usefulness perceptions. Fourth, perceived privacy risk negatively moderates the relationship between AIGC advertising and perceived usefulness (H4), such that high privacy concerns eliminate the positive effect of AIGC on perceived usefulness.

A key contribution of this study lies in identifying the tension between personalization and privacy in AIGC advertising. While AIGC enables unprecedented levels of content relevance and personalization, the same data collection that powers personalization triggers privacy concerns that can undermine advertising effectiveness. This finding highlights that technological capability alone is insufficient; consumer perceptions of usefulness and privacy risk are critical determinants of whether AIGC advertising succeeds or fails.

The study also revealed important demographic differences, with younger consumers and frequent Facebook users demonstrating greater responsiveness to AIGC advertising. This suggests that AIGC strategies should be tailored to different audience segments, with particular attention to the privacy expectations and digital literacy of target consumers.

From a theoretical perspective, this study extends the Technology Acceptance Model (TAM) to the context of AI-generated advertising, demonstrating that perceived usefulness serves as a key mediator between technological features (AIGC) and consumer outcomes (purchase intention). Additionally, the study introduces perceived privacy risk as a boundary condition, enriching theoretical understanding of when and for whom AIGC advertising is effective.

From a practical perspective, the findings offer actionable guidance for social media marketers. To maximize AIGC advertising effectiveness on Facebook, marketers should: prioritize perceived usefulness in content generation; address privacy concerns proactively through transparency and user control; segment by age and Facebook usage patterns; balance personalization with perceived control; invest in AIGC quality and authenticity; and continuously test and optimize AIGC approaches.

Despite its contributions, this study has several limitations that should be addressed in future research. The cross-sectional design limits causal inference, and future studies should employ longitudinal designs to examine how AIGC effects evolve over time. The use of convenience sampling may limit generalizability, and research with probability samples would strengthen external validity. The study focused exclusively on Facebook, and future research should examine AIGC advertising on other platforms such as Instagram, TikTok, and LinkedIn. Finally, purchase intention was measured through self-report rather than actual behavior, and future research incorporating behavioral tracking would provide stronger evidence.

Future research should also explore additional psychological mechanisms beyond perceived usefulness, such as perceived authenticity, trust in AI, and emotional responses to AIGC. Cross-cultural studies would examine whether the findings generalize across different national and cultural contexts. Longitudinal research could investigate how repeated AIGC exposure affects consumer attitudes over time, including potential fatigue effects. Finally, as AI technology continues to evolve rapidly, research examining consumer responses to emerging AIGC formats (e.g., AI-generated video, interactive AI ads) would be valuable.

In conclusion, this study demonstrates that AI-generated content represents a powerful tool for enhancing social media advertising effectiveness on Facebook, but its success depends on consumer perceptions of usefulness and privacy risk. Marketers who leverage AIGC to deliver genuinely useful content while respecting consumer privacy will be well-positioned to achieve competitive advantage in an increasingly AI-driven digital marketplace. As AI technologies continue to advance and consumer awareness of data privacy grows, the ability to balance personalization with privacy will become a defining characteristic of successful social media advertising strategies.

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