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ARTIFICIAL INTELLIGENCE (AI) -BASED DIGITAL ADVERTISING ON TIKTOK ON INTEREST CONSUMER BUYING (Study of Undergraduate Students of the Faculty of Social and Political Sciences, Malikussaleh University)

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Abstract

This study aims to determine and analyze the effect of Artificial Intelligence (AI)-based digital advertising on TikTok on consumer purchase intention among undergraduate students of the Faculty of Social and Political Sciences, Malikussaleh University. The study employed a quantitative survey approach and simple linear regression analysis. The sample consisted of 100 students selected through purposive sampling with proportional allocation across six study programs. Primary data were collected using a Likert-scale questionnaire and processed with SPSS version 27. The results show that AI-based digital advertising on TikTok has a positive and significant effect on consumer purchase intention. This is proven by a calculated t-value of 11.761, which is greater than the critical t-value of 1.984, with a significance value of 0.000 < 0.05. The correlation coefficient of 0.765 indicates a strong relationship, while the coefficient of determination of 0.585 shows that digital advertising explains 58.5% of the variation in purchase intention. These findings confirm that advertisements that are easy to understand, innovative, persuasive, and entertaining can increase consumers' interest in seeking product information and developing purchase intention.

Keywords: Digital Advertising, Artificial Intelligence, TikTok, Consumer Purchase Intention

INTRODUCTION

The development of digital technology has transformed the way companies convey information and promote products to consumers. The increasing use of the internet has made social media no longer merely a means of communication and entertainment, but also a marketing platform that allows promotional messages to be delivered quickly, interactively, and measurably. In Indonesia, the number of internet users has reached 221.56 million, or approximately 79.50% of the population, thus offering increasingly broad opportunities for marketing activities through digital media (APJII, 2024).

Digital advertising is a marketing communication tool that utilizes the internet and digital applications to introduce products, convey information, and influence consumers. Compared to conventional advertising, digital advertising has the ability to reach a wider audience, segment more specifically, and open up direct interaction between advertisers and consumers (Nazara & Ginting, 2024).

One platform widely used for digital advertising is TikTok. This short-form video platform is supported by a For You Page recommendation system that allows content to be distributed according to user interests. TikTok also offers commerce and promotional features such as TikTok Shop, TikTok Affiliate, in-feed ads, top-view, and branded effects, making the platform a potential digital marketing medium (Pradana & Yulianto, 2023).

Source: Researcher Documentation (2025)

Figure 1. User Response to AI-Based Ads on TikTok

The development of Artificial Intelligence (AI) has also transformed the digital advertising production process. AI technology can be used to automatically generate text, images, sound, video, and visual effects, allowing businesses and creators to create promotional content more quickly and with more variety. In digital marketing, AI also helps analyze user patterns and tailor content to audience preferences (Ramadhani & Salisah, 2024).

The use of AI in advertising doesn't always elicit the same response. Some users find AI-based ads engaging because they present novel visuals and concepts. However, others question the authenticity of the product's appearance and its compatibility with the actual item. The responses in Figure 1 demonstrate both positive and negative, ranging from interest in learning how to create content to complaints about the discrepancy between the product and the video. A pre-survey of 40 TikTok users confirmed this phenomenon. All respondents had seen product or service advertisements on TikTok and had encountered ads perceived as being created using AI. 82.5% of respondents stated that TikTok ads influenced product trust, while 72.5% stated that they had driven purchase intention.

Previous research has shown that AI-based advertising personalization can increase promotional effectiveness and shape consumer responses (Ramadhani & Salisah, 2024). Other research has found that digital marketing content on TikTok has a positive effect on purchase intention (Maulana & Isyianto, 2025). However, studies specifically examining digital advertisements created using AI on the TikTok platform are still relatively limited. Therefore, this study analyzes the effect of AI-based digital advertisements on TikTok on the purchase intention of undergraduate students at the Faculty of Social and Political Sciences, Malikussaleh University.

LITERATURE REVIEW

Digital Advertising

Digital advertising is a form of marketing communication that utilizes the internet and digital applications to promote goods or services. Digital advertising is measurable, targetable, and allows for two-way interaction between brands and consumers (Shiratina et al., 2020). In this study, digital advertising is understood as promotional content on TikTok created using AI. The effectiveness of digital advertising is measured through four characteristics: simple, unexpected, persuasive, and entertaining (Hakim, 2006). Simple indicates that the advertising message is easy to understand. Unexpected describes a new or unexpected element that attracts attention. Persuasive indicates the ad's ability to persuade consumers, while entertaining describes the ad's ability to provide a pleasant experience.

Artificial Intelligence in Digital Marketing

Artificial Intelligence is a technology designed to mimic human thinking through data analysis, pattern recognition, and automated decision-making (Nugroho et al., 2024). In marketing, AI is used to automate content production, understand consumer preferences, and help deliver more relevant advertising. The use of AI on TikTok can produce creative and realistic visuals, but transparency is also needed to prevent consumers from misjudging the product's condition.

Consumer Purchase Interest

Purchase intention is a consumer's psychological tendency to make a purchase before the actual decision is made. This intention is formed through experience, needs, perceptions of quality, and the information received. Purchase intention can be measured through transactional, referential, preferential, and exploratory intentions (Ferdinand, 2014). Transactional interest indicates a tendency to purchase a product. Referential interest indicates a willingness to recommend the product to others. Preferential interest reflects a tendency to make the product a primary choice, while exploratory interest is demonstrated by a desire to seek further information about the product.

TikTok as a Digital Marketing Medium

TikTok is a short-form video-based social media platform that allows users to create, share, and discover content tailored to their preferences. Its visual, audio, interactive, and algorithmic nature makes it effective for promotions. The TikTok Shop and affiliate program also connect promotional content directly with the purchasing process.

Source: Processed Data (2025)

Figure 2. Conceptual Framework of the Research

Based on this conceptual framework, the research hypothesis states that Artificial Intelligence -based digital advertising on TikTok has a positive and significant effect on consumer purchasing interest.

RESEARCH METHODS

The research was conducted on undergraduate students at the Faculty of Social and Political Sciences, Malikussaleh University. The research used a quantitative associative approach with a survey method to examine the influence of AI-based digital advertising on TikTok on consumer purchasing intention.

1. Population and Sample

The study population consisted of 5,115 students from the Business Administration, Public Administration, Communication Science, Political Science, Anthropology, and Sociology study programs. The sample size was calculated using the Slovin formula at a 10% margin of error, resulting in 98.08 respondents, rounded up to 100. The sample was allocated proportionally to each study program. The respondent selection technique used purposive sampling with the following criteria: active undergraduate students of the Faculty of Social and Political Sciences, Malikussaleh University, at least 18 years old, active TikTok users, have seen product or service advertisements on TikTok, and have seen advertising content created using AI assistance.

2. Data Collection Techniques

Data were collected through questionnaires distributed in person and online. The questionnaires contained 12 statements for digital advertising variables and 8 statements for purchase intention variables. Observations of promotional content and documentation of TikTok user responses served as supporting data.

3. Data Measurement Scale

A five-point Likert scale was used to measure respondents' level of agreement with each statement. The weighting of the responses is presented in Table 1.

Table 1. Likert Scale

NO	QUESTION	SCORE
1	Strongly agree	5
2	Agree	4
3	Neutral	3
4	Don't agree	2
5	Strongly Disagree	1

4. Data Analysis Method

Data analysis included validity test, reliability test, normality test, heteroscedasticity test, simple linear regression, t-test, correlation coefficient, and determination coefficient. Data processing was performed using SPSS version 27. The simple linear regression equation is formulated as follows:

$$\mathbf{Y = a + bX}$$

Information:
Y = Dependent variable (Purchasing Interest)
a = Constant (value of Y when X = 0)

b = Regression coefficient (the magnitude of the change in Y caused by X)
X = Independent variable (Digital Advertising)

DATA TYPE

Primary data was obtained directly from 100 respondents' responses to a questionnaire. Secondary data was gathered from books, journal articles, institutional documents, statistical reports, and online sources related to digital advertising, Artificial Intelligence, TikTok, and consumer purchasing intentions.

RESULTS AND DISCUSSION

Respondent Data Description

Respondent characteristics were used to provide an overview of the sample composition based on gender, age, and study program. The results of the data processing are presented in Table 2.

Table 2. Respondent Data Identity

No	Respondent Characteristics	Frequency	Percentage
1.	**Gender**		
	Man	14	14.0%
	Woman	86	86.0%
2.	**Age**		
	18 – 22 Years	96	96.0%
	23 – 28 Years	4	4.0%
3.	**Study program**		
	Business Administration	12	12.0%
	Public Administration	31	31.0%
	Communication Studies	31	31.0%
	Political Science	7	7.0%
	Anthropology	4	4.0%
	Sociology	15	15.0%

The majority of respondents were female (86%). In terms of age, 96% were between 18 and 22 years old. The largest number of respondents came from the Public Administration and Communication Studies study programs, with 31% each. This composition followed a proportional sample allocation based on the number of students in each study program.

Validity Test

The validity test was conducted by comparing the calculated r-value with the r-table value of 0.197 at a significance level of 0.05. All items in the Digital Advertising variable (X) had calculated r-values greater than the r-table and significance values below 0.05, thus being declared valid.

Table 3. Results of the Digital Advertising Validity Test (X)

Item	Pearson Correlation	Sig.	Information
X.1	0.664	0,000	Valid
X.2	0.746	0,000	Valid
X.3	0.668	0,000	Valid
X.4	0.628	0,000	Valid
X.5	0.679	0,000	Valid
X.6	0.662	0,000	Valid
X.7	0.781	0,000	Valid
X.8	0.692	0,000	Valid

Item	Pearson Correlation	Sig.	Information
X.9	0.720	0,000	Valid
X.10	0.708	0,000	Valid
X.11	0.740	0,000	Valid
X.12	0.721	0,000	Valid

The results of testing the Consumer Purchase Interest (Y) variable also showed that all items met validity criteria. The correlation value for each item was above 0.197, and the overall significance value was less than 0.05.

Table 4. Results of the Validity Test of Consumer Purchase Interest (Y)

Item	Pearson Correlation	Sig.	Information
Y.1	0.742	0,000	Valid
Y.2	0.830	0,000	Valid
Y.3	0.813	0,000	Valid
Y.4	0.820	0,000	Valid
Y.5	0.774	0,000	Valid
Y.6	0.805	0,000	Valid
Y.7	0.844	0,000	Valid
Y.8	0.746	0,000	Valid

Reliability Test

An instrument is considered reliable if the Cronbach's Alpha value is greater than 0.60. Test results indicate that both variables have a high level of consistency and are suitable for further analysis.

Table 5. Reliability Test Results

Variables	Cronbach's Alpha	Information
Digital Advertising	0.905	Reliable
Consumer Purchase Interest	0.917	Reliable

Classical Assumption Test

The normality test using the One-Sample Kolmogorov-Smirnov test yielded an Asymp. Sig. value of 0.099, which is greater than 0.05. Thus, the model residuals are normally distributed.

Table 6. Kolmogorov-Smirnov Test Results

N	Test Statistics	Asymp. Sig. (2-tailed)	Standard Deviation
100	0.081	0.099	4.26577352

The heteroscedasticity test using the Glejser method showed a significance value of 0.268. This value is greater than 0.05, thus the model is declared free from heteroscedasticity symptoms.

Table 7. Glejser Test Results

Variables	Significant Value	Information
Digital Advertising (X)	0.268	Free of Heteroscedasticity

Hypothesis Testing

t-test

A partial test was used to determine the effect of AI-based digital advertising variables on consumer purchasing interest. The results of the regression coefficient test are presented in Table 8.

Table 8. Partial Test Results (t)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	-1,548	2,179	-	-0.711	0.479
Digital Advertising	0.636	0.054	0.765	11,761	0,000

Based on the test results, the regression equation Y = -1.548 + 0.636X was obtained. The regression coefficient of 0.636 indicates a positive influence. The calculated t-value of 11.761 is greater than the t-table of 1.984 and the significance value of 0.000 is less than 0.05. Therefore, H0 is rejected and Ha is accepted. Thus, AI-based digital advertising on TikTok has a positive and significant influence on consumer purchasing interest.

Correlation Coefficient (R) and Determination (R^2) Test

Table 9. Results of Correlation and Determination Tests

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	0.765	0.585	0.581	4,28748

A correlation coefficient of 0.765 indicates a strong relationship between AI-based digital advertising and purchase intention. An R-squared value of 0.585 indicates that 58.5% of the variation in consumer purchase intention can be explained by digital advertising, while the remaining 41.5% is influenced by other factors not included in the study.

Discussion

Research results demonstrate that AI-based digital advertising on TikTok has a positive and significant impact on student purchase intention. These findings suggest that improvements in ad delivery quality tend to be followed by increased consumer interest in the promoted product. Descriptively, the digital advertising variable obtained an average score of 3.30. The statement with the highest score was that AI-based ads often present new ideas or concepts, with an average score of 3.58. This indicates that unexpectedness or novelty is the characteristic most perceived by respondents. Conversely, the statement that AI-based ads directly increase purchase intention obtained the lowest score of 2.97. These findings indicate that advertising creativity can attract attention, but does not always directly result in a purchase.

The purchase intention variable obtained an average score of 2.94. The highest score was 3.31 for the desire to seek further information about a product after viewing an AI-based advertisement. Meanwhile, the lowest score, 2.49, was for the tendency to choose a product advertised using AI over a product advertised without AI. Thus, AI-based advertisements are more effective at driving exploratory interest than forming primary preferences. These findings align with the concept of purchase intention, which explains that consumers don't always make a purchase immediately after being exposed to an advertisement. Consumers may first seek information, compare products, assess the seller's credibility, and consider the appropriateness of the advertisement's appearance and the product's condition. In the context of AI, transparency is crucial, as overly realistic or modified visuals can potentially create a gap between expectations and the actual product.

The research findings also support Darmawati and Febriyanti's (2025) findings that digital advertising has a positive and significant impact on purchase intention. Furthermore, research by Maulana and Isyianto (2025) shows that digital marketing content on TikTok can increase consumer engagement. Thus, the effectiveness of AI technology is determined not only by visual sophistication but also by the clarity of information, the relevance of the message, the honesty of the product display, and the advertising's ability to build trust.

CONCLUSION

This study examines the influence of Artificial Intelligence -based digital advertising on TikTok on consumer purchase intention among undergraduate students of the Faculty of Social and Political Sciences, Malikussaleh University. The results indicate that AI-based digital advertising has a positive and significant effect on consumer purchase intention. The relationship between the two variables is categorized as strong with an R value of 0.765. Digital advertising explains 58.5% of the variation in purchase intention, while the remaining 41.5% is influenced by other factors outside the study. AI-based advertising is most strongly perceived through the novelty and creativity of the content. Regarding purchase intention, the highest response occurs in the form of a desire to seek more information. This suggests that AI can be an initial trigger for consumer interest, but its use is not yet a primary reason for product selection. The credibility of the information and the appropriateness of the product's appearance remain important considerations.

SUGGESTION

Business owners and TikTok Affiliate creators are advised to use AI to increase creativity and efficiency in content production without compromising the integrity of information. Visuals should accurately represent the actual product, along with explanations of benefits, price, size, ingredients, and how to use. Transparency in AI use is also crucial to maintain consumer trust. Future researchers are advised to add variables such as consumer trust, product quality, price, electronic word of mouth, or brand image. Research could also compare consumer responses to AI-based and non-AI-based advertising on different platforms to more comprehensively explain the mechanisms that shape purchase intention.

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