

## **EXPLORING THE IMPACT OF POST-ROLL ADVERTISING ON CLICK-THROUGH RATE AMONG TIKTOK USERS @DOSENKECANTIKAN**

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### **ABSTRACT**

This study aims to analyze the effect of post-roll advertising on click-through rate (CTR) on short-form video platform TikTok. A quantitative correlational survey design was employed to examine the relationship between post-roll ad exposure (X) and CTR (Y). A total of 107 respondents were selected through purposive sampling from followers of the TikTok account @dosenkecantikan. Data were collected using an online questionnaire measured on a five-point Likert scale and analyzed using simple linear regression with SPSS 26.0. The results revealed a significant positive effect of post-roll advertising on CTR ( $\beta = 1.080$ ;  $p < 0.001$ ), with  $R^2 = 0.850$ , indicating that 85% of CTR variation is explained by post-roll ad effectiveness. These findings suggest that ad placement at the end of video content effectively sustains user attention and drives engagement through clicks. Theoretically, the results reinforce the mere exposure effect and the importance of media context in digital advertising effectiveness. Future studies are recommended to include moderating variables such as ad creativity, content relevance, and emotional appeal to account for the remaining unexplained variance.

**Key words:** post-roll advertising; click-through rate; TikTok; digital marketing; media context

### **INTRODUCTION**

Digital advertising has become one of the most widely applied strategies in online marketing, allowing businesses to reach large audiences and stimulate consumer responses. Video platforms such as YouTube, Instagram, and other streaming services frequently integrate advertising formats such as pre-roll, mid-roll, and post-roll into their content to sustain revenue models and provide free access to users (Adhikari et al., 2023).

Much research has focused on pre-roll and mid-roll placements, which interrupt content before or during viewing and are thought to elicit higher user attention. For example, Kim & Han (2018) studied YouTube pre-roll ads and found significant effects on CTR and view-through rates depending on ad length, format, and screen type (Dindar, 2018). Also, broader literature reviews such as *In-app Advertising: A Systematic Literature Review* (2024) show that many studies emphasize ad format, user behavior, and platform features in mobile/in-app contexts (Maddodi & Upadhyaya, 2024).

However, despite extensive research on digital video advertising, key gaps persist. Empirically, most studies emphasize pre-roll and mid-roll formats, while systematic analyses of post-roll effectiveness, especially on click-through rates (CTR), remain scarce. Post-roll is often merged into a broader “in-stream” category, obscuring its specific impact (Newton et al., 2025). Theoretically, although advertising and media-context frameworks show how the media environment influences ad memory and effectiveness, they have not been sufficiently extended to explain how placement timing (before, during, or after content) interacts with selective attention, ad fatigue, or exposure patterns. Methodologically, few studies consider moderators such as video duration, viewer commitment, or content type (narrative vs. informational), factors likely to shape post-roll performance (Saha et al., 2021).

Despite that, empirical studies specifically examining post-roll ads relative to click-through rates (CTR) are scarce. The existing work often omits post-roll or combines it with other placements, making isolation difficult. Additionally, predictive modeling studies such as “Predicting Online Video Advertising Effects with Multimodal Deep Learning” focus on video/text/metadata features to predict CTR but do not systematically compare post-roll vs. mid-roll or pre-roll placements (Ikeda et al., 2020).

Theoretically, although media context has been shown to affect advertising memory and effectiveness (e.g., *Impact of Media Context on Advertising Memory*, 2018 (Kwon et al., 2019)), research on how ad placement timing (pre-, mid-, or post-content) interacts with user attention, ad fatigue, or selective exposure remains limited. Few studies include moderators such as video duration, viewer commitment, or content type (narrative vs informational) when assessing CTR outcomes for video ads, especially post-roll (Monesa & Simanjuntak, 2024).

Therefore, this study analyzes the effect of post-roll ad placement on click-through rate (CTR) in online video platforms, considering moderating variables like video duration, viewing motivation, and content type. It addresses an empirical gap (CTR studies on post-roll), a theoretical gap (applying media context and attention theories to placement timing), and a research gap (neglected moderators), contributing to both academic insights and practical advertising strategies.

## METHOD

**Research Design.** This study used a quantitative correlational survey design to examine the relationship between post-roll advertising and click-through rate (CTR) among TikTok users. A quantitative method was selected because it enables the measurement of variable relationships and hypothesis testing through statistical procedures (Frade et al., 2021) (Lee et al., 2022). Specifically, simple linear regression was applied, which is appropriate for analyzing the causal effect of a single independent variable, post-roll advertising (X), on a single dependent variable, CTR (Y). This design is widely used in marketing and advertising research to assess behavioral responses to digital ad formats (Ikeda et al., 2020).

**Population and Sample.** The research population consisted of the followers of the TikTok account @dosenkecantikan, which has approximately 1.2 million followers. Due to the large size of the population, a non-probability purposive sampling technique was employed to select respondents who met the inclusion criteria: being a follower of @dosenkecantikan, having previously been exposed to post-roll advertisements on the account's content, and voluntarily agreeing to participate in the study. Following Green's (1991) guideline, which recommends that the minimum number of respondents for a simple linear regression analysis should be  $N \geq 50 + 8m$ , with  $m$  representing the number of independent variables, the minimum required sample was 58 respondents. To ensure greater validity and robustness of the analysis, the sample size was set at 100 respondents, which was deemed adequate given the one-month data collection period (Hair & Alamer, 2022).

**Variables and Operationalization.** The independent variable, post-roll advertising, was operationalized using three dimensions adapted from Li & Lo (2015): frequency of exposure, advertisement duration, and format (skippable vs. non-skippable). Each dimension was translated into measurable indicators to develop the questionnaire items. The dependent variable, click-through rate (CTR), was operationalized through three dimensions derived from Richardson et al. (2007): intention to click, frequency of clicking, and advertisement engagement. These dimensions were intended to capture respondents' behavioral responses after viewing post-roll ads. All indicators were formulated into structured questionnaire items measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Lee et al., 2022).

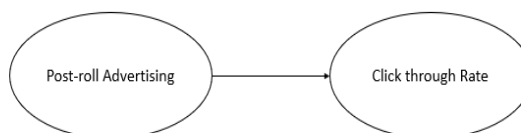
**Research Instrument and Data Collection.** Data were collected using a structured online questionnaire administered via Google Forms. The instrument consisted of two scales: the Post-roll Advertisement Exposure Scale (five items) and the Click-Through Intention Scale (five items), which were pretested with 30 respondents to evaluate their psychometric properties. Reliability analysis yielded Cronbach's alpha (Ritter, 2010) coefficients above 0.70, indicating acceptable internal consistency. The questionnaire link was disseminated through Instagram Stories and X. Participants first provided informed consent and completed demographic questions, including age, gender, and intensity of TikTok usage. Only respondents who confirmed prior exposure to post-roll advertisements were included in the final sample. Data collection was conducted over a two-week period.

**Data Analysis.** The data analysis process comprised three stages. Initially (Winkelmann, 2008), descriptive statistics were employed to summarize respondents' demographic characteristics. Subsequently, assumption tests, including normality and linearity, were conducted to ensure the appropriateness of the data for regression analysis. Finally, a simple linear regression analysis was performed using the equation

$$Y = a + bX$$

Where  $Y$  represents click-through rate,  $X$  represents post-roll advertising,  $a$  is the constant, and  $b$  is the regression coefficient. The analysis was conducted using SPSS version 26.0 with a significance level set at  $\alpha = 0.05$ .

**Research Paradigm and Hypothesis.** This study adopts a research paradigm that assumes a direct relationship between post-roll advertising and click-through rate.



**Figure 1. Research Model**

Accordingly, the following hypotheses were formulated :

H0 : states that post-roll advertising does not significantly influence CTR among followers of @dosenkecantikan, while the alternative hypothesis

H1 : asserts that post-roll advertising significantly affects CTR among the same population.

## RESULTS AND DISCUSSION

**Descriptive Statistics.** The study involved a total of 107 TikTok users who participated voluntarily in the online survey. Respondents were analyzed based on demographic characteristics and TikTok usage intensity to understand their exposure and interaction potential with post-roll advertising.

**Table 1. Respondent Profile and TikTok Usage Intensity (n = 107)**

Variable	Category	Frequency (n)	Percentage (%)
<b>Gender</b>	Female	67	62.6%
	Male	40	37.4%
<b>Age Group</b>	18–24 years old	60	56.1%
	25–34 years old	32	29.9%
	35–44 years old	15	14.0%
<b>TikTok Usage Intensity</b>	Very Rarely (1)	1	0.9%
	Rarely (2)	1	0.9%
	Neutral (3)	36	33.6%
	Often (4)	41	38.3%
	Very Often (5)	28	26.2%

Source : Research’s processed questionnaire data (2025)

The data indicate that the majority of respondents were female (62.6%) and aged 18–24 years (56.1%), representing the dominant demographic of TikTok users young adults who are digitally active and familiar with interactive media platforms. This age group aligns with Generation Z, known for their strong engagement with short-form video content.

In terms of usage intensity, most respondents reported using TikTok often (38.3%) or very often (26.2%), with only 1.8% indicating low activity. This shows that TikTok has become an essential part of their daily social media habits, providing high exposure opportunities to digital advertisements, especially post-roll ads appearing at the end of videos.

Overall, the respondent profile demonstrates that the sample consists primarily of young, active, and media-savvy users, making them an ideal audience for post-roll advertising. Their high engagement level suggests that they are more likely to encounter, pay attention to, and interact with ad content factors that are crucial for analyzing the influence of post-roll advertising on click-through rate (CTR) behavior.

Table 2 presents the descriptive statistics for the research variables. The mean score of Post-roll Advertising ( $M = 3.89$ ,  $SD = 1.23$ ) indicates that respondents generally agreed that they often noticed and were exposed to post-roll ads on TikTok. Meanwhile, the mean score of Click-Through Rate (CTR) ( $M = 3.72$ ,  $SD = 1.29$ ) shows a moderate to high level of click intention and engagement.

**Table 2. Descriptive Statistics of Research Variables**

Variable	N	Mean	SD	Minimum	Maximum
Post-roll Advertising	107	3.89	1.23	1	5
Click-Through Rate (CTR)	107	3.72	1.29	1	5

Source : SPSS Output (2025)

These findings align with Liu and Thompkins (2018), who reported that repeated exposure and relevance of online ads positively influence users’ engagement and response behavior (Liu-thompkins, 2018). Table 3 shows the reliability coefficients for both variables. The Cronbach’s alpha values are 0.944 for Post-roll Advertising and 0.976 for CTR, indicating excellent internal consistency. Therefore, the questionnaire items were reliable and consistent for measuring both constructs.

**Table 3. Reliability Statistics**

Variable	Cronbach’s Alpha	N of Items	Interpretation
Post-roll Advertising	0.944	9	Highly Reliable
Click-Through Rate	0.976	9	Highly Reliable

Source: SPSS Output (2025)

This reading is consistent with literature showing that exposure to digital advertising with sufficient intensity and relevance has a higher chance of eliciting a user response (e.g., engagement, clicks) (Liu-thompkins, 2018). The results of the simple linear regression are summarized in Table 4. The correlation coefficient is  $R = 0.922$ , showing a very strong relationship between post-roll advertising and CTR. The coefficient of determination,  $R^2 = 0.850$ , indicates that 85 % of the variance in CTR is explained by post-roll advertising, while the remaining 15 % is attributed to other factors.

**Table 4. Regression Results of Post-roll Advertising on CTR**

Variable	B	SE	Beta	t	p
Constant	-4.248	1.601	—	-2.653	0.009
Post-roll Advertising	1.080	0.044	0.922	24.406	< 0.001
<b>Model Fit</b>	R = 0.922	R <sup>2</sup> = 0.850	F(1, 105) = 595.650	p < 0.001	

p < 0.05, p < 0.001 Source: SPSS Output (2025)

The regression equation is:

$$CTR = -4.248 + 1.080(\text{Post-roll Advertising})$$

This positive coefficient ( $\beta = 1.080$ ,  $p < 0.001$ ) confirms that for every one-unit increase in perceived effectiveness of post-roll advertising, CTR increases by approximately 1.08 points. Based on the results of the simple linear regression analysis ( $\beta = 1.080$ ,  $p < 0.001$ ), the significance value is below the  $\alpha = 0.05$  threshold. Therefore, H1 is accepted and H0 is rejected, indicating that post-roll advertising has a significant positive effect on click-through rate (CTR) among TikTok users.

**Scientific Findings and Interpretation.** The study revealed a significant and positive effect of post-roll advertising on click-through rate (CTR) among TikTok users. This finding confirms the mere exposure effect which posits that repeated exposure to a stimulus increases familiarity and promotes favorable attitudes and behaviors. Users who are repeatedly exposed to post-roll advertisements are therefore more likely to engage with and click on these ads. The result also aligns with Ikeda et al. who found that timing and repetition of digital video advertisements improve recall, attention, and user engagement. This suggests that when post-roll ads are placed strategically immediately after content ends, while attention remains high they can effectively encourage user interaction.

The regression analysis supports this interpretation, showing a very strong relationship ( $R = 0.922$ ) and high explanatory power ( $R^2 = 0.85$ ), meaning that 85% of CTR variation is explained by post-roll advertising attributes such as frequency, duration, and format. This high level of explained variance indicates that the characteristics of post-roll ads are dominant predictors of user clicking behavior. These findings are consistent with Tellis (Schmidt & Eisend, 2018), who reported that advertising repetition exerts a strong but non-linear influence on consumer responses, peaking at an optimal level before diminishing returns occur. In this study, such optimal conditions may have been achieved through appropriate ad timing and exposure, leading to higher engagement among TikTok users.

The positive trend between post-roll advertising and CTR can be further explained by behavioral and cognitive factors. First, post-roll ads appear when viewer attention remains focused after watching the main content, creating a favorable context for message retention. Second, post-roll ads in this study appear to have been of optimal duration, long enough to communicate the message but short enough to avoid viewer fatigue. Third, moderate frequency of exposure ensures that viewers recognize the ad without feeling bored or annoyed, consistent with Lewis (Lewis, 2013), who emphasized that excessive repetition can cause advertising wear-out. Together, these factors create a psychological balance that maximizes ad effectiveness without triggering irritation or avoidance.

Despite the model's strong predictive power, approximately 15% of CTR variance remains unexplained, suggesting that other factors contribute to user engagement. These may include creative design, ad content quality, message relevance, emotional appeal, brand familiarity, audience targeting, and platform algorithms. These unexamined elements could interact with ad exposure variables and act as moderators that influence how viewers respond to post-roll advertisements. Future research could therefore extend this model by incorporating moderating or mediating variables, such as consumer involvement or ad attitude, to obtain a more comprehensive understanding of digital advertising behavior.

Comparatively, the findings of this study are consistent with prior research in digital advertising. found that ad-placement timing (pre-roll, mid-roll, or post-roll) significantly affects brand recognition, where mid-roll ads generally outperform other formats; however, in short-form platforms like TikTok, post-roll placement remains effective because audience attention persists until the end of the video. Saha et al. also demonstrated that the timing of in-stream ads substantially shapes user perception and click behavior, reinforcing that ad placement after content can optimize engagement (Saha et al., 2021). Similarly.

The study provides strong empirical evidence that post-roll advertising plays a significant role in increasing click-through rate among TikTok users. The positive relationship is supported by behavioral theories and prior empirical research, showing that timing, frequency, duration, and placement are crucial components that determine digital advertising success. Approximately 85% of user engagement can be attributed to these factors, while the remaining influence is likely due to creative and contextual elements. These findings extend existing knowledge in digital marketing by demonstrating that strategically designed post-roll ads timed effectively and repeated optimally can sustain user attention and drive engagement on short-form video platforms such as TikTok.

## CONCLUSION

The findings of this study demonstrate that post-roll advertising has a significant positive effect on click-through rate (CTR) among TikTok users. The hypothesis testing results indicate that H1 is accepted and H0 is rejected, confirming the proposed relationship between post-roll ad exposure and user engagement behavior. This supports the theoretical assumption that ad placement timing, particularly at the end of short-form content, can effectively capture user attention and drive interaction. The strong predictive power of post-roll advertising highlights its strategic value for digital marketers seeking to optimize engagement outcomes. While 85% of CTR variance is explained by the model, the remaining 15% suggests the influence of other factors such as ad creativity, content relevance, or emotional appeal. Future research could extend this study by incorporating moderating or mediating variables to develop a more comprehensive model of digital advertising effectiveness.

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## REFERENCES

- Adhikari, S. P., Paudel, A., Sharma, A., Thapa, B., Khanal, N., Shastri, N., Rai, S., & Adhikari, R. (2023). *Research Article*. 22–40. <https://onlinelibrary.wiley.com/doi/10.1155/2023/8541621>,
- Dindar, M. (2018). Do people play MMORPGs for extrinsic or intrinsic rewards? *Telematics and Informatics*, 35(7), 1877–1886. <https://doi.org/10.1016/j.tele.2018.06.001>
- Ikeda, J., Seshime, H., Wang, X., & Yamasaki, T. (2020). Predicting online video advertising effects with multimodal deep learning. *Proceedings - International Conference on Pattern Recognition*, 2995–3002. <https://doi.org/10.1109/ICPR48806.2021.9412666>
- Kwon, E. S., King, K. W., Nyilasy, G., & Reid, L. N. (2019). Impact of media context on advertising memory a meta-analysis of advertising effectiveness. *Journal of Advertising Research*, 59(1), 99–128. <https://doi.org/10.2501/JAR-2018-016>
- Lee, M. H., Kim, S. J., Yoon, S. H., & Park, S. (2022). An Integrative Approach to Determinants of Pre-Roll Ad Acceptance and Their Relative Impact: Evidence from Big Data. *Journal of Advertising*, 51(1), 76–84. <https://doi.org/10.1080/00913367.2021.1932643>
- Lewis, R. A. (2013). *Worn-Out or Just Getting Started? The Impact of Frequency in Online Display Advertising*. 1–26.
- Li, H., & Lo, H. Y. (2015). Do You Recognize Its Brand? The Effectiveness of Online In-Stream Video Advertisements. *Journal of Advertising*, 44(3), 208–218. <https://doi.org/10.1080/00913367.2014.956376>
- Liu-thompkins, Y. (2018). *A Decade of Online Advertising Research: What We Learned and What We Need to Know*. December.
- Maddodi, C. B., & Upadhyaya, P. (2024). In-app advertising: a systematic literature review and implications for future research. *Spanish Journal of Marketing - ESIC*, 28(3), 334–355. <https://doi.org/10.1108/SJME-05-2022-0120>
- Monesa, F., & Simanjuntak, E. R. (2024). The Impact of Soft-Sell Appeal in TikTok on the Attitude towards the Ads. *WSEAS Transactions on Business and Economics*, 21, 1890–1900. <https://doi.org/10.37394/23207.2024.21.154>
- Newton, J., Newton, F. J., Wong, J., & Tsarenko, Y. (2025). Effect of pre-roll ad choice on brand attitude and attitude toward the viewing experience. *European Journal of Marketing*, 59(4), 999–1024. <https://doi.org/10.1108/EJM-03-2022-0191>
- Richardson, M., Dominowska, E., & Ragno, R. (2007). Predicting clicks: Estimating the click-through rate for new ads. *16th International World Wide Web Conference, WWW2007*, 521–530. <https://doi.org/10.1145/1242572.1242643>
- Saha, K., Liu, Y., & Vincent, N. (2021). Adverting matters: Examining user ad consumption for effective ad allocations on social media. *Conference on Human Factors in Computing Systems - Proceedings*, 1–25. <https://doi.org/10.1145/3411764.3445394>
- Schmidt, S., & Eisend, M. (2018). *Advertising Repetition: A Meta-Analysis on Effective Frequency in Advertising Repetition: A Meta-Analysis on Effective Frequency in Advertising*. April 2015. <https://doi.org/10.1080/00913367.2015.1018460>
- Winkelmann, R. (2008). Econometric analysis of count data. In *Econometric Analysis of Count Data*. <https://doi.org/10.1007/978-3-540-78389-3>