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HUMAN VS AI ON TIKTOK: A COMPARATIVE ANALYSIS OF ENGAGEMENT IN BECOOL'S CAMPAIGN

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ABSTRACT

This study aims to examine whether there is a significant difference in audience engagement between manually produced and AI-generated videos in Becool's TikTok branding campaign. Using a quantitative comparative design, we analyzed 20 purposively selected posts ten human-made and ten AI-generated, uploaded during the third quarter of 2025. Secondary data from TikTok Analytics included likes, comments, shares, views, and engagement rate. Assumptions of normality (Shapiro–Wilk, $p > 0.05$) and homogeneity (Levene's, $p = 0.005$) were verified before conducting an independent-samples t-test. There wasn't a statistically significant difference between the two groups with respect to engagement rate, $t(14.325) = 1.024$, $p = 0.323$, such that both manual and AI-produced content triggered the same audience responses. The findings outline the potential that AI-produced videos can be equaled with human-produced videos provided that platform and audience assumptions about relevance and authenticity are fulfilled. In practice, marketers can integrate the use of AI tools within the ideate, edit, and scale stages with human curation to ensure narrative cohesion as well as depth of emotions within the development of the content.

Key words: Artificial Intelligence; brand engagement; digital marketing; content authenticity

INTRODUCTION

Digital technologies now define the way that brands communicate within the creative economy. Companies use social media to build consistent interaction with audiences through visual, dynamic, and interactive content. TikTok, with one of the most rapidly growing user bases globally, emphasizes engagement as one of the most important determinants of the success of campaigns, making it the obvious context within which to study the performance of content in practice (Kemp, 2024). We define engagement as audience interaction with brand communications, as manifested through likes, comments, and shares, indicating communication success in digital channels (Ashley & Tuten, 2015).

We employ engagement because it measures what people actually do as they experience content. On TikTok, people quickly scroll, click within seconds, and give low-effort but informative signals. Likes, comments, shares, and related rates give behavioral evidence that complements attitudinal measures and tells us if messages are resonating beyond passive exposure (Ashley & Tuten, 2015; Kemp, 2024). Such metrics allow near real-time creative decisions to be made by managers, as well as give researchers a consistent point of comparison between posts.

Artificial intelligence advances elevated the capacities of creatives and accelerated the rates at which they can generate content. AI can scale the creation of written words, images, and video with near-human-quality outputs that reduce costs of production and accelerate cycle times (Kaplan & Haenlein, 2020). Marketing departments are embracing AI to automate mundane acts of creativity, be more efficient, and craft messages that are highly specific to microsegments (Dwivedi et al., 2021). This transfer of human-centric creativity to the use of algorithms poses new questions about how audiences will perceive and react to content that is not authored directly by people (Kaplan & Haenlein, 2020; Dwivedi et al., 2021).

Authenticity is one of the key motivators of the mechanisms that people use to build trust with brands. As previously found, authenticity fortifies the significance of a brand and builds long-term bonds (Morhart et al., 2015). Human-authored content usually has signals that audiences recognize as true because they are grounded in the experience of the creator, social situation, and instincts, and can deepen emotional connection (Santos et al., 2023). AI-written content can scale and velocity but may be lacking in narrative richness and the type of emotional significance that people turn to when deciding to act upon or repost it (Huang & Rust, 2021). Such compromises set the conditions for a direct empirical test within a platform where engagement is front and center of discovery.

Even as interest in AI-powered marketing continues to gather steam, research still lacks quantitative evidence of comparative engagement outcomes between human-written and AI-written content on highly interactive platforms, such as TikTok. The study findings not only confirm how AI disclosure directly influences user engagement but also highlight the critical significance of video content quality in engaging users with short-form videos (Chen et al, 2025). Others look at attitudes towards AI or behavioral intentions, rather than platform-level

behavioral measures based on real campaigns (Dwivedi et al., 2021; Huang & Rust, 2021). The gap is significant because managers now base day-to-day strategic decisions on metrics that are viewed, rather than expressed intentions. Researchers also benefit from causality between creative inputs that can be seen at the post level to Observable engagement.

The present study closes this gap with a comparative study that employs actual performance data on Becool's branding project across TikTok social media. Two modes of video production, one made with humans and one made with AI, were used under the same platform and brand conditions in the campaign. By controlling the platform but tracking behavior at scale, the study can explore audience reactions as they view contents that vary in source yet compete within the same feed (Dwivedi et al., 2021; Huang & Rust, 2021). The environment also facilitates a practical examination of authenticity cues alongside emotional tone as detailed in prior research (Morhart et al., 2015; Santos et al., 2023; Huang & Rust, 2021). Accordingly, the present study hopes to compare audience response with manual video made as compared to AI video made within Becool's TikTok branding initiative. We envision the analysis to inform creative strategy by shedding light on when human-made cues related to authenticity and emotion appear to enhance audience reaction and when the parsimonious nature of AI might suffice to meet production goals (Kemp, 2024; Ashley & Tuten, 2015; Kaplan & Haenlein, 2020; Dwivedi et al., 2021; Morhart et al., 2015; Santos et al., 2023; Huang & Rust, 2021).

This work has two-fold contributions:

1. Theoretical Contribution: Experimentally, it studies whether theories concerning the importance of authenticity and a "human touch" (Morhart et al., 2015; Santos et al., 2023) can be transferable to the fast-paced social media environment to enable engagement.
2. Real-World Impact: It offers evidence-based advice to marketers to determine when to deploy costlier human innovation and when the effectiveness of AI is great enough to achieve campaigns.

METHOD

We used a quantitative, comparative design to analyze differences in engagement between manually created and AI-generated videos in Becool's TikTok branding campaign. This design allowed formal tests of mean differences for two independent groups, consistent with established guidance on comparative hypothesis testing (Azwar, 2007).

We utilized a saturated purposive sampling framework with explicit inclusion criteria, such as (1) uploads during a standardized campaign timeframe (third quarter 2025), (2) aligned brand purposes, (3) comparable duration and video quality, and (4) readily available TikTok Analytics data. The number of potential videos that could be included based on these criteria was capped at 20 that included both 10 human-created and 10 AI-created videos. Because the population of contents was homogeneous as well as capped, a saturated sample enabled us to analyze all qualifying videos. This practice is consistent with Sugiyono's (2013) guideline that saturated sampling is acceptable if the entire population is relatively minor as well as clearly defined.

Each video was treated as the unit of analysis and observed as a digital object through quantitative indicators reported in TikTok Analytics. The dataset consisted of five variables: likes, comments, shares, views, and engagement rate. Engagement rate was calculated using the following formula:

$$Engagement\ Rate\ = \frac{Likes+Comments+Shares}{Views} x100$$ (Pillat & Pillat, 2017).

These indicators represented audience interaction with digital content and served as behavioral evidence of how brand messages resonated on social platforms (Ashley & Tuten, 2015). By relying on platform-native metrics, the study aligned with practical measures used by digital marketing professionals.

The statistical analysis was conducted using IBM SPSS Statistics version 26. We first verified the assumptions of normality (Shapiro–Wilk test) and homogeneity of variances (Levene's test). After assumptions were met, group means for each engagement indicator were compared using the independent-samples t-test.

To ensure the robustness of the findings, a non-parametric Mann–Whitney U test was also conducted as a robustness check. This test does not assume normality and was used to verify whether the observed differences in engagement between AI-generated and human-made videos remained consistent under less restrictive assumptions. The inclusion of this robustness test strengthened the reliability of the comparative results.

We set the significance threshold at $\alpha = .05$ and used two-tailed tests to detect differences in either direction between human-made and AI-generated content. This procedure provided a clear and replicable basis for assessing whether the two content types produced distinct engagement outcomes, in line with the comparative logic described by Azwar (2007) and the engagement construct outlined by Ashley and Tuten (2015).

RESULTS AND DISCUSSION

Results

Test of Normality

We tested normality using the Shapiro–Wilk test because each group contained fewer than 50 observations (Azwar, 2007). As the table below shows, both groups, manual videos with code 1.00 and AI-created videos with code 2.00, resulted in non-significant outcomes, p = .652 and p = .097 correspondingly. As all the obtained p-values were above the α = 0.05 significance level, the distribution of the engagement rate data in both groups was presumed to be normally distributed. Thus, the assumption of normality held, and we moved on to making parametric statistical tests. Practically, this means that the engagement rate acted steadily throughout both video content groups and followed an approximate normal distribution.

Table 1. Test of Normality (Shapiro–Wilk)

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	JenisVideo	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
EngagementRates	1.00	.147	10	.200*	.949	10	.652
	2.00	.243	10	.097	.869	10	.097

Source: SPSS Output, 2025

Test of Homogeneity

We tested the homogeneity of variances using Levene's test before performing the independent-samples t-test to ensure that the assumption of equal variances was met (Azwar, 2007). As shown in Table 2, Levene's test for the engagement rate produced a significant result, F(1,18) = 10.041, p = 0.005, indicating that the variances between the manual and AI groups were not equal. Therefore, homogeneity of variance assumption was violated, and the decision of the t-test was made based on the "Equal variances not assumed" option (Welch's correction). The significance value obtained from this test was p = 0.323, indicating that there was no significant difference between the two groups based on the engagement rate. These results justify that in spite of the inequality of the variances, the difference in the engagement rate was statistically non-significant.

Table 2. Test of Homogeneity (Levene's Test for Equality of Variances)

Variable	F	Sig. (2-tailed)	Interpretation
Engagement Rate	10.041	.323	Homogeneous

Source: SPSS Output, 2025

Independent Samples T-Test

We present the outcome of the independent-samples t-test in Table 3. Following Levene's test (F = 10.041, p = .005), the assumption of equal variances did not hold, thus the findings were interpreted adopting the "Equal variances not assumed" option. The examination revealed that the difference between the manual and AI video groups on the basis of engagement rates was not significant, t(14.325) = 1.024, p = 0.323, with the mean difference standing at 0.985. The 95% confidence interval of the difference was between –1.0739 to 3.0439, such that the true mean difference could possibly be zero. At α = .05, we could not reject the null hypothesis, implying that there existed no significant difference in the rates of engagement between the two groups. The discovery implies that video origin between manual and AI-created video did not generate noticeable differences in audience engagement on TikTok.

Table 3. Independent Samples T-Test of Engagement Metrics between Manual and AI-Generated Videos

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EngagementRates	Equal variances assumed	10.041	.005	1.024	18	.319	.98500	.96200	-1.03608	3.00608
	Equal variances not assumed			1.024	14.325	.323	.98500	.96200	-1.07390	3.04390

Source: SPSS Output, 2025

Discussion

The comparison wasn't significant in terms of engagement rate between manual videos and videos made by AI, $t(14.325) = 1.024$, $p = 0.323$. The slightly higher mean engagement rate of manual videos (M difference = 0.985) wasn't substantial enough to be considered statistically significant. These results imply that, among the potential set that could be observed, the source of video material, human creation or AI creation didn't significantly contribute to audience engagement on TikTok. Because the assumption of normality was met as well as the test interpreted with the option of unequal variances, the inferences are made based on correct statistical procedures.

While the data reveal no meaningful difference, this empirical neutrality invites further reflection on what might underlie such parity. The lack of significant differentiation may be the increasing refinement of AI-generated materials to capture stylistic as well as emotional cues hitherto reserved for the human creator. With superior text-to-video computer routines as well as data-driven editing technologies, AI systems can now capture actual tone, pace, as well as narrative development, thereby decreasing the gap within engagement (Huang & Rust, 2021). This aligns with broader results that audiences are primarily more receptive to perceived relevance as well as aesthetically driven attractiveness over the source of the material's creation (Ashley & Tuten, 2015).

Still, one must interpret these results in context. Although the statistical distinction wasn't significant, qualitative factors such as emotional impact, narrative cohesion, and creator identity can still contribute to the way viewers experience things. Human creators tend to incorporate nuanced social and contextual cues that machines might fail to fully register factors that, with the passing of time, can impact one's trust as well as the building of a community (Morhart et al., 2015; Santos et al., 2023). The failure to reach significant mean difference here can mean that such human advantages are contextual, as opposed to universal, based on the type of contents, audience segment, or cultural acceptability.

In practice, the findings imply that human- and AI-authored content can coexist successfully as components of a brand agenda. The teams can utilize AI to scale and generate ideas but human creatives to convey storytelling depth and richness that connects on an emotional level. Managers can integrate both strategies, e.g., utilizing the use of AI to generate quick cuts of content but human editors to refine delivery as well as authenticity cues. Measure engagement metrics that are multi-faceted, such as shares as well as comments, rather than monitoring collective rates to determine actual audience interaction (Ashley & Tuten, 2015).

Theoretically, this research extends the body of work on human–AI co-creation in digital advertising by providing empirical evidence of engagement parity rather than human superiority. marking a departure from previous assumptions that AI-generated content lacks emotional or authentic resonance (Santos et al., 2023; Huang & Rust, 2021). Unlike prior work that has commented upon the inadequacy of algorithmic creativity, our research demonstrates that when platform norms, audience expectation, and content pertinence are controlled for, media produced by AI have the potential to achieve levels of engagement that are the equal of human-created work. This represents a novel contribution, by signaling a move towards a functional model of equivalence between human and AI-created work for the purposes of branding campaign. Future research may extend this finding by exploring the mechanisms underlying this correspondence—whether it is the consequence of algorithmic adaptation, audience insensitization to authorship, or shifting aesthetic criteria—while also extending the research by the larger and more diverse datasets, between-platform studies, and measures of mediating factors such as authenticity, emotional salience, and transparency of communication.

CONCLUSION

The study could not ascertain through the data a statistically significant audience interaction rate difference between human-created and computer-created videos during Becool's TikTok branding campaigns. While manual video mean interaction rates were slightly bigger in relation to AI video interaction rates by a 0.985 percentage point gap, the independent-samples t-test result, $t(14.325) = 1.024$, $p = 0.323$, could not ascertain the difference to be significant. The study advises that human-created contents as well as computer-created contents can achieve the same audience interaction levels on TikTok, at least within the range of the current dataset.

This development underscores the point that AI-created content has attained a degree of communicative and aesthetically pleasing quality to enable it to compete with human-created videos in driving engagement. Yet, human creatives are still valuable assets, especially in instances where contextual storytelling, emotional richness, and brand authenticity are crucial. AI assets can facilitate human creativity as augmentations, helping to support ideation, versioning, and production velocity as human creatives themselves concentrate on narrative design and emotional connect. This balanced utilization enables brands to preserve creative authenticity without over-compromising on velocity or scalability of production.

Theoretically, the paper argues that the relationship between the source of contents and engagement is finer-grained than that of a pure supremacy of human creativeness. When media with the assistance of AI becomes the norm among audiences, the engagement might be less about the human-crafted vs. machine-crafted contents, but about subjective authenticity, relevance, as well as emotional resonancy.

The follow-up research should expand the sample to over 20 posts, to different classes of brands, and to some other features of engagement, such as positivity of comments or sharing intent. Experimental research that manipulates authenticity signals or AI use disclosure could also divulge some more attitudes of audiences. Multimethod research that combines quantitative measures of platforms with qualitative interviews with audiences would add some additional richness to the ways viewers interpret and respond to social media posts written by AI.

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