



iJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** VII **Month of publication:** July 2026

DOI: <https://doi.org/10.22214/ijraset.2026.84359>

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Human Vs AI Influencers: A Comparative Analysis of Consumer Engagement and Purchase Intention

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Abstract: *The advent of artificial intelligence has created a considerable transformation in the field of influencer marketing, with the introduction of AI-generated virtual influencers in substitute to human influencers. Even though the brands are utilizing both types of influencers, understanding consumers perception towards promoted products and services is limited. In the present scenario human influencers are highly preferred because of their genuine nature, trustworthiness and emotional connectivity with the audiences and so as the AI influencers for its innovation, consistency and strength to deliver controlled brand communication. This study aims to compare the influence of human and AI influencers on consumer engagement and willingness to purchase while exploring the role of factors such as authenticity, reliability, and consumer perception in shaping influencer preference. A descriptive and comparative analysis has been adopted using a quantitative approach, and the primary data is assembled through a structured questionnaire from active social media users. The compiled data will be thoroughly analysed by using proper statistical techniques to check the relationships and differences among the influencer types. The inference drawn from the study should reveal the key takeaways into changing consumer preference and support marketers in making an effective influencers strategy choice for digital marketing promotions in an increasingly AI-driven environment.*

Keywords: *Human Influencers, AI Influencers, Consumer Engagement, Purchase Intentions, Authenticity, Reliability, Consumer Perception.*

I. INTRODUCTION

In today's digital marketing field brands are highly preferring influencer marketing counted among the most influential strategies, enabling them to build an affiliation with consumers through social media platforms. For a long time, human influencers was a major contributor in developing consumer opinions/decisions through building trust, authenticity, and meaningful relationships with their followers. A significant transformation in technology has enabled AI to develop a new generation of virtual influencers with ability of creating content, interacting with audiences, and promoting products in a highly controlled and innovative manner. This kind of transformation has motivated businesses to explore AI influencers as an alternative marketing tool, also while facing challenges about their functional efficiency compared to human influencers.

The popularity of AI influencers across industries such as fashion, beauty, technology, and lifestyle, is gradually evolving the consumers' perception towards them. Factors such as authenticity, reliability, emotional connection, and trust continue to manipulate how consumers will link with influencer content and whether they intend to purchase the promoted products. Marketers consider that understanding these differences is crucial in order to develop effective influencer strategies. Hence, the study attempts to measure the impact of human as well as the AI influencers on consumer engagement and purchase intention, while identifying the major key factors that mold consumer preferences in the ever-changing digital marketing environment.

II. REVIEW OF LITERATURE

Sands et al. (2021) conclude that although AI influencers create novelty and attract consumer attention, human influencers continue to outperform them in genuineness and emotional bond. Thomas and Fowler (2022) found that AI influencers are thought of as innovative but lack the emotional trust associated with human influencers. Byun and Ahn (2022) observed that increasing the human-like appearance of virtual influencers improves engagement, yet consumers still prefer human influencers more trustworthy. Park and Sung (2023) reported that highly human-like AI influencers enhance interaction and attractiveness, but they lack the level

of credibility that human influencers possess. Similarly, Rizzo et al. (2023) observed that incorporating human traits and social interactions into AI influencer content significantly improves trust and engagement. Ekinci et al. (2024) emphasized that while AI influencers strengthen perceptions of innovation, human influencers develop stronger emotional trust and online engagement. Ju et al. (2024) further pointed authenticity as the primary determinant which influence consumer engagement regardless of influencer type. Huschens et al. (2025) found that AI-generated content can be perceived as competent and reliable, although consumers still prefer the authenticity associated with human-generated content. Likewise, Mishra (2025) suggested that AI influencers offer consistency and scalability, whereas human influencers construct stronger emotional relationships and trust. Yadav and Kumar (2026) demonstrated that emotional interaction and parasocial relationships significantly improve consumer engagement and purchase intention toward human-like AI influencers.

III. PROBLEM STATEMENT

The rapid growth of social media marketing has paved way for brands to adopt influencer marketing strategy as it is an important tool to grab consumers attention and influence their buying decisions. Traditionally, human influencers were essential in building consumer engagement through authenticity, trust, and emotional connection. However, the introduction of AI generated virtual influencers has layered a brand-new platform in the field of online marketing, generating curiosity among audience. Even after gaining popularity, it has been observed that there is a lack of understanding on consumers perception and response towards artificial influencers compared to human influencers with respect to consumer engagement and purchase intention. Majority of the current studies have focused on technological advancements and online recognition, on the other hand limited attention has been paid to emotional, psychological, and trust-related factors influencing consumer preference. Moreover, due to various concerns regarding authenticity and relatability consumers behaviour towards AI influencers may vary. Hence, the study aims to comparatively analyse the impact of human and AI influencers on audience engagement and purchase intention to understand consumer preferences in the evolving virtual marketing environment.

IV. NEED FOR THE STUDY

The increasing adoption of AI influencers has transformed the digital marketing domain making it essential to understand how consumers perceive and respond to them compared to traditional human influencers. While AI influencers offer innovation and consistency, there is less clarity whether they can build the same standard of consumer engagement and purchase intention in par with human influencers. There is a requirement for this study to examine how the factors such as authenticity, reliability, and emotional connection play a prominent purpose in molding consumer preferences and influencing buying decisions. The outcomes of the research will offer beneficial knowledge for marketers and businesses in selecting the highly effective strategies of influencer marketing in an increasingly AI-driven automated environment.

V. RESEARCH GAP

Even after a significant surge in research on influencer marketing, most of the studies remain focused on how human influencers mold consumer behavior, engagement, and buying choice. The advent of AI influencers has led the researchers to examine the function it performs in internet marketing; regardless, the understanding of the ability of AI influencers to make emotional connection with consumers compared to human influencers is limited. Even though the innovations have drastically increased, the limited empirical evidence is unable to explain why consumers tends to prefer human influencers over AI-generated virtual characters, while studies reveal that trust, authenticity, and emotional link are determining factors influencing audience engagement and purchase action. Besides, majority of the studies have focused more on technological advancements and social media performance instead of investigating the psychological and emotional factors which drive consumer choices. Hence, there is a need for a detailed comparative study using primary data to better understand the reasons why human influencers may be perceived as more engaging and influential than AI influencers in affecting consumer engagement and purchase intention.

VI. OBJECTIVES

- 1) To identify the factors influencing consumer preference towards human influencers over AI influencers in digital marketing.
- 2) To compare the impact of human influencers and AI influencers on consumer engagement across social media platforms.
- 3) To examine the influence of human and AI influencers on consumers' purchase intention towards promoted products and services.

VII. HYPOTHESIS

1) Hypothesis 1

H₀₁ – There is no significant difference between human influencers and AI influencers in influencing consumer engagement on social media platforms.

H₁₁ – There is a significant difference between human influencers and AI influencers in influencing consumer engagement on social media platforms.

2) Hypothesis 2

H₀₂ – Human influencers and AI influencers do not significantly differ in influencing consumers' purchase intention towards promoted products and services.

H₁₂ – Human influencers and AI influencers significantly differ in influencing consumers' purchase intention towards promoted products and services.

VIII. LIMITATIONS

- 1) Limited Sample: The study was performed with a sample of only 90 respondents and most of them are students of the age 18 – 25 years, which may limit the generalization of the findings.
- 2) Geographical Scope: The research was confined to a specific geographical area; therefore, the results may not represent the perceptions of consumers from other regions.
- 3) Scope of the Study: The study focused only on consumer engagement and purchase intention, without taking into consideration of various other factors such as brand loyalty, product category, or influencer expertise that may also affect consumer behaviour.

IX. RESEARCH METHODOLOGY:

A. Research Design

Descriptive and comparative research design is being adopted in the current study to examine the differences between human influencers and virtual influencers regarding the consumer engagement and purchase intention. A quantitative approach is being utilized to gather and assess information from social media platform users. The main aim of the study is to understand consumer perceptions, preferences, and behavioral responses related to different types of influencers and ascertain the parameters that influence their engagement and purchasing decisions.

B. Data Source

The research is being conducted based on first-hand and secondary data sources. The aim is to accumulate first-hand data directly from respondents with the assistance of a structured questionnaire designed to measure consumer engagement, authenticity, reliability, and purchase intention. Secondary data will be gathered from research articles, academic journals, books, conference papers, industry reports, and credible online sources related to influencer marketing, artificial intelligence, and consumer behavior. The combined data from primary and secondary sources allows an in-depth comprehension of the research problem.

C. Sample Design

The population which is targeted for the study comprises of social networking platform users who are active interactors with the content offered by influencers on various digitalized platforms. The participants selected for this study were considered an appropriate sample for achieving the research objectives due to their maximum exposure to both human and AI influencers. For the selection of participants for the study a convenience sampling method is used based on their accessibility and willingness to respond. The proposed study sample for the research is assumed to be approximately 90 respondents, which is at the satisfactory level for conducting meaningful statistical analysis and drawing reliable conclusions.

D. Tools Used For Data Collection

To facilitate data collection a structured questionnaire is used as the primary tool and it constitutes questions related to demography, multiple-choice, close-ended, Likert-scale statements, and a few open-ended questions. These variety questions were formulated with a purpose of gathering respondents' opinions and experiences with reference to human and AI influencers. The questionnaire acts as a supportive tool for the researcher in order to systematically collect data related to engagement levels, perceived authenticity, reliability, and purchase intention.

E. Techniques Adopted To Test Hypotheses

The information gathered for the study was assessed with the help of suitable statistical techniques to address the research objectives and test the hypotheses. Percentage-wise analysis has been used to outline the respondents' demographic profile and present the distribution of responses. With the help of Likert scale method to acquire data which was later analysed by using mean and measure of dispersion with an objective to examine respondents' perceptions regarding consumer engagement, purchase intention, authenticity, and other key variables. With the assistance of SPSS software an independent t-test was conducted for testing the proposed hypotheses and make a proper comparison between the responses of participants who preferred human influencers with those who preferred AI influencers. These statistical techniques offered a systematic analysis of the data and enabled the study to draw meaningful conclusions regarding the comparative influence of human and artificial influencers on consumer engagement and buying intention.

X. DATA ANALYSIS AND INTERPRETATION

Table 1: Respondents' Demographic Profile

Variable	Category	Frequency	Percentage %
Age Group	18 – 25	84	93.33
	26 – 35	6	6.67
Gender	Male	50	55.56
	Female	40	45.44
Occupation	Students	72	80
	Employed	16	17.78
	Self-Employed	2	2.22

Analysis

The above table presents the respondents' demographic profile who contributed in the study. The outcome points out that the greater part of respondents (93.33%) belongs to the age bracket around 18 – 25 years, while only 6 respondents (6.67%) fall within the 26 – 35 years category. This depicts that the study majorly highlights young adults who are increasingly active in using social media platforms and are frequently exposed to influencer marketing. Pointing-out to the gender, male respondents (55.56%) slightly outnumber female respondents (44.44%), indicating a fairly balanced representation of both genders. Regarding occupation, students constitute the largest proportion of the sample, followed by employed individuals, whereas self-employed respondents account for only 2.22%. Overall, the sample primarily consists of young students who are greatly engaged with electronic platforms and influencer content.

Table 2: Mean and Standard Deviation Analysis of Consumer Engagement

Question	Mean	Std. Deviation	Interpretation
I engage more with content posted by human influencers.	4.07	0.78	Agree
Human influencers create stronger emotional connection with audiences.	4.2	0.73	Agree
I find AI influencer content entertaining and interesting.	3.64	0.8	Agree
I am more likely to follow human influencers regularly than AI influencers.	3.93	0.96	Aree

The outcome shows that respondents agrees that human influencers generate higher consumer engagement than AI influencers. The largest mean score ($M = 4.2$) was observed for the statement that human influencers create a powerful emotional link with audiences, followed by engaging more with content posted by human influencers ($M = 4.07$). Although respondents also agreed that AI influencer content is entertaining ($M = 3.64$), the overall findings suggest a stronger preference for engaging with human influencers. The relatively low measure of dispersion shows that respondents' opinions were fairly consistent.

Table 3: Mean and Standard Deviation Analysis of Factors Influencing Consumer Preference

Question	Mean	Std. Deviation	Interpretation
Human influencers appear more genuine and relatable than AI influencers.	4.13	0.81	Agree
AI influencers provide consistent and professionally managed content.	3.64	0.74	Agree
Authenticity of an influencer affects my trust towards promoted products.	3.67	0.88	Agree
Reliability of influencers influences my engagement with social media content.	3.71	0.92	Agree

From the above table it is deduced that participants provide consent that authenticity, reliability, and relatability are some of the key determinants that drive their choice for influencers. The largest mean score ($M = 4.13$) was recorded for the statement that human influencers are more genuine and relatable, indicating that authenticity play a greater function in consumer preference. Respondents also agreed that AI influencers provide consistent content and that both authenticity and reliability influence their trust and engagement with influencer content.

Hypothesis 1:

H_{01} (Null Hypothesis) – There is no significant difference between human influencers and AI influencers in influencing consumer engagement on social media platforms.

H_{11} (Alternative Hypothesis) – There is a significant difference between human influencers and AI influencers in influencing consumer engagement on social media platforms.

STATISTICAL TOOL USED:

Independent Samples t-test

Variables	Human Influencers (Mean $\pm$ SD)	AI Influencers (Mean $\pm$ SD)	t- value	p- value (Sig. 2-tailed)	Decision
Consumer Engagement	4.224 $\pm$ 0.696	3.750 $\pm$ 0.657	2.168	0.034	Reject H_0

Analysis:

An Independent Samples t-test was used to determine whether the consumer engagement varied notably between respondents who primarily follow human influencers and those who follow AI influencers. The results demonstrates that respondents who prefer human influencers reported a higher mean consumer engagement score ($M = 4.224$, $SD = 0.696$) than respondents who chose AI influencers ($M = 3.750$, $SD = 0.657$). The obtained t-value was 2.168 with 68 degrees of freedom, and the p-value was 0.034, which is less than the significance level of 0.05. These outcomes support that there is a statistically significant difference in consumer engagement between the two groups.

Decision:

Since the p-value (0.034) is less than 0.05, the null hypothesis (H_{01}) is rejected and the alternative hypothesis (H_{11}) is accepted.

Inference:

The findings have revealed that among the respondents included in this study, the consumers are highly engaged by human influencers than AI influencers. Factors such as authenticity, emotional connection, and relatability drive consumers opinion in choosing human influencers over AI influencers. Even after gaining popularity in virtual marketing platform, AI influencers did not equal the audience engagement rate parallelly to human influencers. Therefore, businesses having an objective to maximize audience interaction and engagement may gain advantage by collaborating with human influencers, preferably when building long-term relationships with consumers.

Note: In the current research, consumer engagement was measured as a combined score rather than a single item. A Consumer Engagement Score was generated by averaging the responses to Q12 (Emotional Connection) and Q14 (Following Behaviour towards Human Influencers), which represent key aspects of audience engagement. Eventually the resulted combined score has been incorporated as the dependent variable in the test to make comparison of the engagement levels of respondents who preferred human influencers with those who preferred AI influencers.

Hypothesis 2:

H₀₂ (Null Hypothesis) – There is no significant difference between human influencers and AI influencers in influencing consumers' purchase intention towards promoted products and services.

H₁₂ (Alternative Hypothesis) – There is a significant difference between human influencers and AI influencers in influencing consumers' purchase intention towards promoted products and services.

STATISTICAL TOOL USED:

Independent Samples t-test

Variables	Human Influencers (Mean ± SD)	AI Influencers (Mean ± SD)	t- value	p- value (Sig. 2- tailed)	Decision
Purchase Intention	4.00 ± 1.026	3.50 ± 0.522	1.638	0.106	Accept H ₀

Analysis:

An Independent Samples t-test was performed to assess whether the buying interest of respondents who primarily follow human influencers and those who follow AI influencers differ. The outcomes show that participants who prefer human influencers reported a slightly higher mean purchase intention score (M = 4.00, SD = 1.026) compared to respondents who prefer AI influencers (M = 3.50, SD = 0.522). Although the mean score is higher for human influencers, the obtained t-value of 1.638 with 68 degrees of freedom resulted in a p-value of 0.106, which is greater than the 0.05 level of significance. Therefore, the observed difference is not statistically significant.

Decision:

Since the p-value (0.106) is greater than 0.05, the null hypothesis (H₀₂) is accepted, and the alternative hypothesis (H₁₂) is rejected.

Inference:

The outcome of the examination reveals that there is no significant distinction between human influencers and AI (artificial) influencers in influencing consumers' purchase intention. Even after the strong preference of respondents towards products promoted by human influencers, the difference was so low that it couldn't be considered as statistically relevant. This clearly points-out that the willingness to perform the purchase decisions of consumers are influenced by both human and virtual influencers. The resulted outcomes support that the purchasing choices are not only determined by influencer type alone, rather variety of other factors for instance product quality, brand reputation, pricing, personal preferences, and previous consumer experiences, also contributes to it.

XI. MAJOR FINDINGS

The analysis has revealed that most of the participants were young social networking platform users, primarily students who are of age between 18 and 25 years. The results show that human influencers are more influential than artificial influencers in creating consumer engagement, largely because of their authenticity, trustworthiness, and emotional connection with audiences. Even though respondents' preference for purchasing products recommended by human influencers was high, the influential difference between human and AI influencers was not statistically significant. Overall, the study reveals that even after AI influencers gained publicity through its consistency and innovative content, human influencers have set-up a strong outcome on consumer engagement and held the position of primary choice among respondents.

XII. SUGGESTIONS

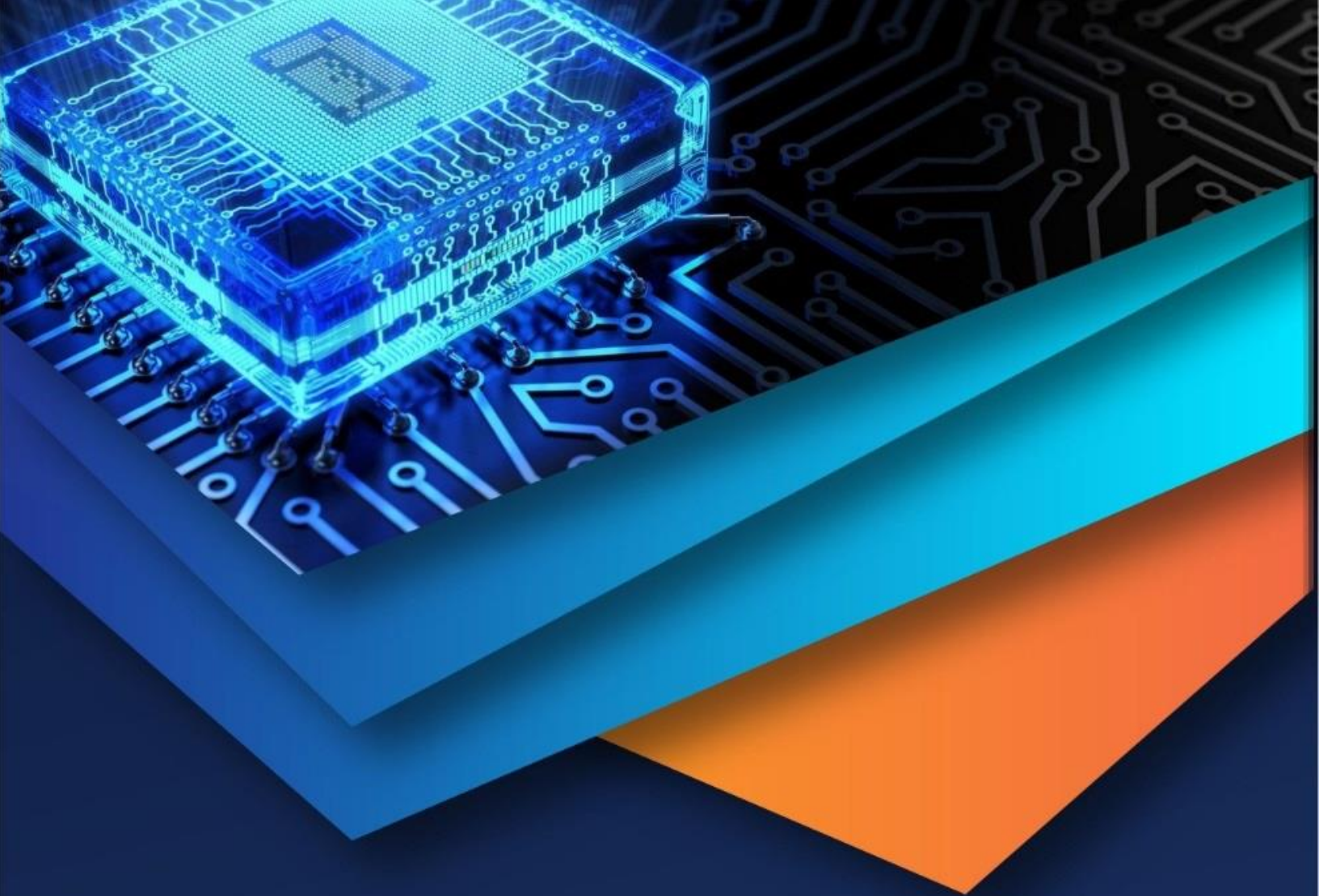
According to the outcomes of the study, brands are suggested to primarily collaborate with human influencers when the objective is to improve consumer engagement and develop a long-lasting emotional link with their audience. Parallely, AI influencers can be utilized for the campaigns where the requirement is for consistency, creativity, and innovative content. Marketers are suggested to implement a collaborative approach to enhance the effectiveness of the promotional activities. Additionally, organizations are proposed to improve the authenticity and relatability of AI influencers to strengthen the confidence among the consumers, while upcoming researches may include a larger and more diverse group of respondents to provide broader insights into consumer perceptions and the effectiveness of influencer marketing.

XIII. CONCLUSION

In the era where technology-enabled marketing is continuously evolving the study has compared the effectiveness of human influencers and AI influencers in molding both consumer engagement and purchase preference. The results present that in terms of engagement, emotional connection, authenticity, and relatability human influencers have an upper hand than AI influencers. It is also found that consumers have developed confidence to interact with human influencers due to its authenticity and trustworthiness. However, the study has deduced that the difference in influential strength between human and AI influencers was not statistically significant even though the preference of respondents to purchase products recommended by human influencers was high, which revealed that consumers buying decisions depend not only on influencer type but also on several additional factors beyond them. Overall, the study emphasizes that human influencer is the primary choice for building meaningful consumer relationships even though AI influencers offer innovation and consistency. As artificial intelligence continues to evolve, organizations should strategically blend both human and AI influencers to create more engaging, credible, and effective marketing campaigns.

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