

# Exploration of Engagement and Interaction Patterns with Virtual vs Human Influencers: A 24-Month Comparison of Two Breton Personalities

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## Abstract

Virtual influencers, defined as computer-generated personas operated by creative teams, are reshaping influencer marketing, yet their reception compared to human influencers remains uncertain. While studies conducted in several countries suggest that novelty may stimulate engagement, evidence from the breton context, where authenticity and proximity are central evaluative criteria, remains limited. This exploratory study compares, over a 24-month period, the performance of a virtual influencer and a human influencer with comparable audience size and thematic focus. Results show no statistically significant difference in engagement, including likes, comments and interaction rate. However, user interactions with the virtual influencer display slightly more polarized reactions, although negative comments remain extremely rare overall. These findings suggest that virtual influencers may integrate into the Breton digital landscape without clearly outperforming or underperforming human influencers. The study contributes to contextualizing virtual influencer effects in Europe and highlights the need for controlled experimental research to further examine the roles of authenticity and technological innovation.

Keywords: Virtual influencers; Human influencers; Engagement; Authenticity; Perception; Influencer marketing

## Introduction and research focus

Influencer marketing has become a cornerstone of digital communication strategies. Traditionally embodied by human influencers, it is now undergoing a major transformation with the rise of digital avatars, commonly referred to as virtual influencers. Virtual influencers can be defined as computer-generated personas created and operated by creative teams, who produce content and interact with audiences despite having no physical existence. These figures offer brands extensive control over their image and messaging and are often presented as a form of media innovation that attracts consumer attention (Hewapathirana and Perera, 2024; Lou et al., 2022). Their international success has been documented in several regions, notably in the United States with Lil Miquela (@lilmiquela), who has collaborated with leading brands (Si, 2024), as well as in Asia, where digital avatars are gaining increasing visibility in the luxury and entertainment industries (Hewapathirana and Perera, 2024).

However, their reception varies considerably across cultural contexts. In Indonesia, Hidayat et al. (2024) show that virtual influencers may benefit from a novelty effect that can enhance engagement, whereas in Brazil, Muniz et al. (2023) observe that users continue to value the emotional closeness associated with human influencers. In France, where authenticity and proximity have long been central evaluative criteria in influencer marketing (Euzéby et al., 2024; Filali-Boissy et al., 2025), it remains necessary to examine whether virtual influencers generate comparable levels of engagement and how they are perceived within this culturally specific environment.

Against this backdrop, this study addresses two research questions. First, do virtual influencers generate engagement comparable to that of human influencers in the context of brittany . Second, beyond quantitative metrics, what kinds of qualitative perceptions and interactions emerge in users' responses to virtual versus human influencers.

## Literature Review

The literature on influencer marketing highlights three key dimensions. First, digital engagement encompasses more than the number of likes and comments and also involves the quality and tone of interactions (Brodie et al., 2011). Second, perceived authenticity is widely recognized as a central criterion for credibility and attachment to an influencer (Haimson et al., 2021). Virtual influencers raise particular questions regarding this notion of authenticity. Their carefully crafted narrative consistency may compensate for the absence of lived experience, yet their artificial nature can also generate skepticism or distrust (Fleck and Ambroise, 2019; Belanche et al., 2024). However, existing studies provide mixed evidence regarding whether innovation or controlled identity can offset this perceived lack of authenticity, suggesting that the relationship between technological novelty and authenticity perceptions remains complex and context dependent.

Third, several studies emphasize the importance of cultural context in shaping audience expectations. While American and Asian audiences may be more receptive to technological innovation, European and particularly Breton audiences tend to place greater emphasis on sincerity and proximity in their evaluation of influencers (Filali-Boissy et al., 2025; Euzéby et al., 2024). These findings underscore that virtual influencers may not elicit the same responses across cultural environments and that assumptions about innovation or novelty effects should be interpreted with caution.

The rise of virtual influencers can also be examined through the lens of source credibility theory (Hovland and Weiss, 1951), which posits that message effectiveness depends on the perceived trustworthiness and expertise of the source. Virtual avatars, while offering brands greater control and consistency, may face challenges related to perceived authenticity or psychological realism (Haimson et al., 2021). This tension is also related to the uncanny valley phenomenon (Mori, 2012), which suggests that artificial characters that closely resemble humans may evoke discomfort when small imperfections disrupt perceptions of realism.

## Methodology

This study is based on an exploratory comparison between two influencers observed over a 24-month period (2023 to 2025). The virtual influencer, Anne Kerdi, is a digital persona positioned as a regional cultural guide for Brittany. The human influencer selected is a Paris-based content creator with a comparable follower base, posting frequency and general thematic focus. Although the two accounts share similarities in audience size (approximately 11,000 to 14,000 followers) and broad content orientation, their posts inevitably differ in style, narrative tone and specific topics. These differences, as well as variations in audience composition, could not be fully controlled and represent important limitations of the research design.

The dataset includes more than 400 posts, which were analyzed using three quantitative indicators: average number of likes, average number of comments and engagement rate calculated as total interactions relative to audience size. In addition, a lexical and sentiment analysis was conducted on more than 1,300 comments to identify recurring themes and the distribution of positive, neutral and negative reactions. Because the number of negative comments was very small overall, results related to negative sentiment should be interpreted with caution and considered indicative rather than conclusive.

To examine quantitative differences between the two influencers, Welch's t-test was applied, as it is suitable for samples with unequal sizes and variances. The comparison of sentiment distributions across comment categories was carried out using the chi-square test. Given the observational nature of the data and the absence of experimental control over content or audience characteristics, these analyses aim to identify tendencies rather than establish causal effects.

## Results

### R1. Comparison of Performance

The results indicate that the engagement rates of the two influencers are overall similar, although the human influencer shows a slightly higher engagement rate. The virtual influencer, Anne Kerdi, receives on average a greater number of likes per post, while the human influencer generates a higher engagement rate (Table 1).

Table 1. Comparison of Engagement Indicators between the Virtual and Human Influencer

Metric	Virtual (Anne Kerdi – 14.5k followers)	Human (– 11k followers)
Average Likes	407.83	388.70

Average Comments	29.33	17.25
Average Engagement Rate (%)	2.95	3.68

To assess whether the difference in engagement rates between the two influencers was statistically significant, Welch's t-test was conducted. This test was preferred because it is robust to samples of different sizes and unequal variances. The p-value obtained was 0.39, indicating no statistically significant difference between the two groups. These results therefore suggest that, within the limits of this dataset, the type of influencer (virtual or human) does not have a measurable impact on audience engagement. Given the observational nature of the data and the variations in content style and audience composition, these findings should be interpreted as descriptive tendencies rather than definitive evidence.

## R2. Differences in perception and interaction

The analysis of comments highlights differences in the way users interact with the posts of the two influencers. The lexical analysis shows that comments on the virtual influencer's posts mainly refer to her digital identity and regional affiliation, while comments on the human influencer's posts are more focused on appearance and fashion-related attributes (Table 2). These themes reflect the specific positioning of each account and may also be influenced by the nature of the content published.

Table 2. Lexical Analysis of Comments: Recurring Keywords by Influencer Type

Virtual Influencer	Frequency	Human Influencer	Frequency
Bretagne	46	Gorgeous	23
Anne	39	😘😘😘	23
Superbe	32	Beautiful	22
Magnifique	29	Paris	19
IA	25	Outfit	18

The sentiment analysis indicates that most reactions are neutral for both influencers, although the human influencer receives a slightly higher proportion of positive comments. The virtual influencer, by contrast, generates a higher proportion of negative comments (Table 3). However, negative comments remain extremely rare overall, with only a few occurrences in the entire corpus. As a result, differences in negative sentiment should be interpreted with caution, as the small number of negative comments limits the possibility of drawing strong conclusions from this aspect of the analysis.

Table 3. Sentiment Analysis of Comments: Distribution of Reactions by Influencer Type

Sentiment	Virtual Influencer	Human Influencer
Positive	184	210

Neutral	300	186
Negative	7	0

The overall distribution of comments differs significantly between the two influencers ( $\chi^2 = 25.58$ ;  $p < 0.001$ ), with the human influencer receiving proportionally more positive comments. Regarding negative comments, although the virtual influencer receives a statistically higher proportion than the human influencer (Fisher's exact test,  $p = 0.019$ ), the absolute number of negative reactions is very small. Consequently, this result should be seen as an initial indication of differing audience perceptions rather than as definitive evidence of a systematic pattern.

## Discussion

In contrast with several international studies, particularly in the United States where virtual influencers have been shown to benefit from a novelty effect that can enhance engagement (Sorosrungruang et al., 2024; Hidayat et al., 2024), this tendency does not appear in the Breton context examined here. Existing literature suggests that Breton audiences place strong emphasis on authenticity and proximity in their evaluation of influencers (Filali-Boissy et al., 2025; Euzéby et al., 2024), which may partly explain why virtual influencers do not generate higher engagement. However, because this study does not directly measure authenticity perceptions, such interpretations should be viewed as possible contextual explanations rather than as conclusions drawn from the data.

International comparisons also illustrate how cultural factors shape reactions to virtual influencers. In Brazil, users tend to value emotional closeness, which may disadvantage virtual influencers (Muniz et al., 2023). In Indonesia, fascination with technological innovation appears to support their engagement (Iffah et al., 2024). In the United States, their success has been associated with strong media exposure and a high degree of acceptance of fictional narratives (Si, 2024). These cross-national differences highlight that responses to virtual influencers cannot be generalized and may depend on broader cultural expectations regarding technology, identity and communication.

Within this exploratory study, engagement levels were overall comparable between the human and the virtual influencer, while comments directed at the virtual influencer displayed a slightly higher proportion of negative reactions. Because negative comments were extremely limited in number, this tendency should be interpreted with caution. Nevertheless, these patterns indicate that virtual influencers may prompt more questioning or ambivalence among Breton audiences, even when their quantitative performance aligns with that of human influencers.

Overall, these findings underscore the importance of better understanding how audiences in France perceive virtual influencers, particularly regarding notions such as authenticity, technological innovation and narrative coherence. They also point to the need to determine whether the more critical reactions observed here reflect a temporary stage of adaptation or a more durable cultural positioning of virtual influencers within the Breton digital ecosystem.

## Implications

Our results contribute to refining the international literature by showing that, in the Breton context examined here, virtual influencers do not exhibit the higher levels of engagement

documented in studies conducted in the United States or Indonesia. Instead, their engagement levels are comparable to those of human influencers, although user comments reveal subtle differences in how they are perceived. While technological innovation may attract attention, existing research suggests that authenticity remains a central value within French influencer marketing (Filali-Boissy et al., 2025). Because this study does not directly measure authenticity perceptions, such interpretations should be considered as potential contextual explanations rather than as empirical conclusions. Engagement outcomes appear similar across both formats, but the nature of interactions diverges: comments directed at virtual influencers tend to highlight their digital identity, whereas those related to human influencers more often emphasize aesthetic or emotional dimensions.

These findings call for a contextualized approach to the study of influencer effectiveness. Rather than assuming universal reactions to technological innovation, future work should consider how local cultural expectations and narratives shape responses to virtual and human influencers. This perspective may help clarify why virtual influencers elicit different forms of engagement across countries and why their perceived novelty or artificiality may not translate into uniform effects.

From a managerial standpoint, the results suggest that brands can collaborate with virtual influencers without expecting a decline in engagement, provided they adapt their communication strategies to the specificities of this format. Campaigns involving virtual influencers may benefit from emphasizing storytelling, technological creativity or brand-controlled identity, while collaborations with human influencers may rely more on authenticity cues and emotional resonance. For firms operating internationally, these insights highlight the importance of accounting for cultural differences: in France, virtual influencers appear to integrate into the digital landscape without generating the disruptive enthusiasm observed elsewhere, which underscores the relevance of localized and audience-sensitive strategies.

## Conclusion

To our knowledge, this study constitutes the first empirical comparison between a virtual influencer and a human influencer in France. By drawing on methodological approaches used in international studies (Erdoğan and Soydaş, 2024; Hidayat et al., 2024), it offers an initial examination of how these findings translate into the Breton context, where responses to technological innovation may differ from those observed elsewhere. Our analyses show that, in this dataset, the overall volume of engagement is similar across the two influencer types, while the nature of interactions diverges: comments directed at the virtual influencer tend to emphasize her digital and territorial identity, whereas those addressed to the human influencer more often reference aesthetic aspects. Because this study does not directly measure constructs such as authenticity or novelty perceptions, interpretations related to these dimensions should be understood as possible contextual explanations informed by the literature rather than as empirical results.

These findings must be interpreted in light of several limitations. The sample size remains modest, and the study relies on naturally occurring content that cannot be controlled for differences in style, audience composition or narrative positioning. The number of negative comments is also very small, which limits the strength of conclusions regarding critical reactions. These constraints are consistent with an exploratory design but underline the need for further research based on larger datasets, controlled comparisons or experimental

protocols that can isolate the effects of specific variables such as authenticity cues, technological novelty or disclosure of artificiality.

Overall, this study suggests that virtual influencers do not differ from human influencers in terms of engagement volume in the Breton context examined here, but that they may elicit distinct forms of interaction. Their effectiveness should therefore be considered not only in terms of quantitative performance but also in relation to the discourses, meanings and imaginaries they generate. This highlights the value of adopting a nuanced and context-sensitive approach to influencer marketing in France, and calls for further research to better understand how audiences interpret and engage with virtual figures across different cultural and technological environments.

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