

VIRTUAL INFLUENCERS: ARE THEY THE SAME? A SYSTEMATIC LITERATURE REVIEW

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Abstract

The burgeoning phenomenon of virtual influencers presents conflicting approaches to the taxonomy of virtual influencers, and lacks a unified conceptual framework. This paper presents a systematic review of the literature on the meaning of virtual influencers. It begins by examining and comparing multifaceted definitions, and presents five main characteristics of virtual influencers, based on various definitions by previous authors. The study proposes a comprehensive typology of virtual influencers, based on four key dimensions: design, ownership, sponsorship disclosure, and follower size. Through systematic analysis, comparison and the synthesis of existing literature, the paper clarifies the current state of knowledge, and identifies critical future research directions within each typological dimension.

KEY WORDS: virtual influencer, typology, consumer behaviour, systematic analysis.

Anotacija

Sparčiai augantis virtualių influencerių reiškinys atskleidžia prieštarigus jų taksonomijos požiūrius ir bendros konceptualios sistemos stoką. Šiame darbe pateikiama sisteminė literatūros apžvalga, siekiant apibrėžti ir struktūruoti virtualių influencerių sampratą. Pirmiausia aptariami ir lyginami įvairialypiai virtualių influencerių apibrėžimai, pateikiamos penkios pagrindinės virtualių influencerių charakteristikos, remiantis įvairiais ankstesnių autorių apibrėžimais. Toliau siūloma išsami virtualių influencerių tipologija, paremta keturiais pagrindiniais aspektais: dizainu, nuosavybės forma, rėmimo atskleidimu ir auditorijos dydžiu. Sistemiskai analizuojant, lyginant ir apibendrinant turimą literatūrą, nustatomas esamas šios srities žinių lygis bei išryškinamos pagrindinės tolesnių tyrimų kryptys kiekvienoje dimensijoje.

PAGRINDINIAI ŽODŽIAI: virtualus influenceris, tipologija, vartotojų elgsena, sisteminė analizė.

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Introduction

Influencer marketing has been a highly valuable promotional tool for many years, which shows its effectiveness (Shao, 2024). The interest of businesses in influencer marketing is reflected perfectly in market growth forecasts. Based on different sources, the global influencer market could rise from 20 billion USD in 2024 to 70.86 billion USD by 2032 (Fortune Business Insights, 2025), as a conservative estimate, or 80.61 billion USD by 2030 (Statista, 2025), and even 121.81 billion USD by 2030, according to more optimistic evaluations (Mordor Intelligence, 2025). Influencer marketing has gained acknowledged significance, and is an important business promotional tool (Ye et al., 2021). It has also reached a high-priority position in academic publications (Vrontis et al., 2021).

The constant growth of the influencer industry has created good possibilities for technological innovation. The progress in artificial intelligence and virtual reality has created conditions for raising a new type of influencer, namely virtual influencers (Li et al., 2023b). Based on artificial intelligence algorithms, virtual influencers could overcome the shortcomings and problems of human influencers (Zhou et al., 2024). These virtual influencers have successfully drawn attention and influenced the audience by simulating unique and authentic experiences. A recent survey revealed that almost 80% of consumers know virtual influencers, more than 50% follow at least one virtual influencer, and nearly one-third made a purchase based on the recommendation of a virtual influencer (The Influencer Marketing Factory, 2024).

Hundreds of virtual influencers have emerged around the world. Among them are Lu do Magalu, with 14 million followers on Facebook, Lil Miquela with 3.4 million TikTok followers, and Barbie or Guggimon, with millions of followers on social media (Influencer Marketing Hub, 2025). Businesses believe that virtual influencers have significant commercial potential in various industries (Nissen et al., 2025). Well-known brands and companies, such as Pepsi, Coca-Cola, Prada, McDonald's and Chanel, have used virtual influencers as spokespersons. The importance of virtual influencers is reflected in the market's rapid growth. The virtual influencer market size is expected to reach 37.8 billion USD (KBV Research, 2025), or even 45.9 billion USD (Grand View Research, 2025), by 2030, growing at a CAGR of 40%.

The rapid rise in the popularity of virtual influencers has stimulated academic interest, resulting in the emergence of studies. While there were some studies before 2022, a significant publication growth occurred in 2022, and continued through

2023 and 2024, doubling the number of publications (Pujadas-Gómez et al., 2025). Previous studies concentrated mainly on comparing human and virtual influencers (Deng et al., 2024; Belanche et al., 2024), reporting contradicting results. Some studies evaluated individuals' reactions towards various characteristics of virtual influencers, like attractiveness (Kim, Park, 2023), credibility (Li et al., 2023a), and expertise (Gerlich, 2023). Previous studies have stated that social media users' evaluation of virtual influencers depended highly on anthropomorphism and trust, which were concluded to be the most significant factors that may affect people's attitudes and behaviour towards them (Cornelius et al., 2023; Kim et al., 2023). Finally, some researchers have concentrated on parasocial relationships (Akhtar et al., 2024; Stein et al., 2024).

Despite the growing number of studies on virtual influencers, research into this phenomenon is still in its early stages. On one hand, the literature contains a long list of articles on human influencers, including their typologies, and some typologies of social media influencers. However, the rapid development of artificial intelligence and virtual reality-related technologies has opened up new possibilities for virtual influencers. Thus, a precise terminology can help prevent misinterpretations of virtual influencer research among scientists and marketing professionals. Moreover, various types of virtual influencer could cause differences in the results of previous studies, making them incomparable. The study aims to systematise definitions of virtual influencers, and synthesise existing typologies through comprehensive literature reviews. This research offers two contributions to virtual influencer theory and practice. First, we review deeply the research literature to detail conflicting approaches to the taxonomy of virtual influencers and the lack of clarity for research and practice. Second, we evaluate research-based conceptualisations of virtual influencers through scientific sources.

1. Selection of articles

We employed the systematic literature review methodology (Tranfield et al., 2003) for this research. A search for literature was conducted in two major electronic databases: Science Direct and Web of Science. The search was restricted to a time frame of 2021 to 2024, as this period witnessed the most rapid increase in virtual influencer-related studies (Pujadas-Gómez et al., 2025). The chosen keyword 'virtual influencer' in the title, abstract and keywords resulted in a large number of documents. Additional criteria for article inclusion were the relevance to the research questions, the availability as full text, and being written in English. The quality of the papers was reviewed based on the corresponding journal rankings. For this, we applied the Academic Journal Guide for rating journals with an AJG

level of at least 2. This led to the exclusion of most papers. After careful consideration, two papers were reincluded due to their importance to our research question. Thus, the final list comprised 11 manuscripts.

2. Towards the definition of a virtual influencer

In contemporary marketing research, influencers are commonly conceptualised as social media actors who cultivate credibility and domain-specific expertise through curated content and interactive communication with followers, thereby shaping consumer attitudes, beliefs and behaviours (Byun, Ahn, 2023). The emergence of virtual influencers (VI) extends this concept, by introducing artificially created personas that operate as content producers and endorsers on social media platforms. Academic literature provides a multifaceted definition of VI, recognising them as a distinct and evolving category within the social media marketing landscape. Despite the growing dominance of the term ‘virtual influencer’ in academic literature, the persistent terminological variation underscores the need to establish a comprehensive definition. Table 1 presents the main characteristics of the virtual influencers presented in the definitions. These characteristics can be grouped into five major categories.

Table 1. An overview of virtual influencers’ characteristics presented in the definitions

Study	Virtual influencer characteristics				
	Humanness	Autonomy	Environment	Purpose	Technical
Arsenyana and Mirowska (2021)	Embodied, anthropomorphised, and positioned as HI	Created	Social media	For ongoing storylines	Digital
Sands et al. (2022)	Virtual	Created, requires human operators	Social media	To mimic the behaviour and content of HI	AI based
Mia et al. (2022)	Interactive, anthropomorphic	Controlled by humans or software			Digital
Byun and Ahn (2023)	Non-human, anthropomorphic appearances	Fully controlled by humans or algorithms	Social media	To create content and interact in a human-like manner	Computer-generated, digital
Mouritzen, et al. (2024)	Non-human		Social media	Content creators	Digitally created

Study	Virtual influencer characteristics				
	Humanness	Autonomy	Environment	Purpose	Technical
Angmo et al. (2024)		Created and maintained by individuals, brands, or agencies	Social media	Facilitate brand communication	
Koles et al. (2024)		Created and managed by third parties		Engage and influence the audience	Digital
Kim et al. (2024)	Replicates human form and behaviour			For marketing purposes	Digital
Shen (2024)	Fictional, human-like	Created, operated by humans	Social media	For marketing	Digital, based on CGI or AI technologies
Thomas et al. (2025)		Managed, non-autonomous, sustained by humans	Social media	For sharing content and interacting	Digital
Looi et al. (2025)	Fictional, HI's appearance	Created and managed	Social media	To emulate human behaviour	Digital, based on AI and computer graphics

Virtual influencers can be defined as digitally created, non-human entities, endowed with social roles, distinct personalities, and anthropomorphic features that are designed to perform communicative, social and persuasive functions commonly associated with human influencers (Byun, Ahn, 2023; Mouritzen et al., 2024). VI are typically managed by individuals, brands or agencies, and operate through dedicated social media profiles, crafting curated narratives, developing persona-driven storylines, and interacting with audiences in a way that parallels the activities of human influencers, thereby acting as substitutes for both businesses seeking product endorsements and users following lifestyle content (Angmo et al., 2024). While there is no universal agreement on precise terminology, the literature suggests that VI should be distinguished from artificial intelligence (AI) influencers, since VI operations remain largely human-directed (Angmo et al., 2024; Byun, Ahn, 2023; Choudhry et al., 2022; Thomas et al., 2025). Instead, VI is best characterised as non-human, digitally produced characters that publish content and enga-

ge in communicative exchanges to achieve influence among followers (Mouritzen et al., 2024). Notably, the scope of the definition must also encompass the multiplicity of visual forms VI can assume, ranging from hyper-realistic human-like to animated humans and even non-human characters, underscoring a hybrid position between fictional creation and social reality (Koles et al., 2024; Mouritzen et al., 2024; Thomas et al., 2025).

3. Typologies of virtual influencers

The literature proposes multiple typologies to classify VIs that are complementary rather than mutually exclusive, and are best understood as multi-dimensional taxonomies. A widely used dimension is the animation-humanity (anthropomorphism) continuum, which orders VI from cartoon-like figures through progressively realistic 3D renderings to hyper-realistic human-like personas that closely resemble humans (Koles et al., 2024; Mouritzen et al., 2024; Thomas et al., 2025). Placement on this continuum has been linked to variations in cognitive, affective and behaviour responses: photorealistic VIs often enhance perceived social presence, but may also elicit scepticism, ethical concerns, or an ‘uncanny valley’ effect, whereas visibly artificial influencers tend to produce different engagement patterns, and sometimes more a positive audience reaction (Arsenyan, Mirowska, 2021; Koles et al., 2024; Thomas et al., 2025). Building on this continuum, avatar marketing theory distinguishes two interrelated but separate dimensions: form/visual realism (2D versus 3D, styled versus realistic and the degree of realism) and behavioural realism (the degree to which movements, timing, interaction and communication resemble human behaviour) through which anthropomorphism is implemented (Kim et al., 2024; Miao et al., 2022). The combination of these dimensions produces distinct outcomes: a high degree of behavioural realism can lend a sense of naturalness to an artificial-looking VI, whereas a mismatch between visual and behavioural cues, such as cartoon-like VI exhibiting human-like behaviours, is often found to elicit cognitive dissonance or uncanny responses (Kim et al., 2024). A crucial nuance is that a VI’s behavioural realism acts as a moderator, intensifying the effect of its form realism on consumer perception, which ultimately impacts marketing performance (Kim et al., 2024).

Table 2. An overview of the typology of virtual influencers

Study	Basis for the typology
Arsenyan and Mirowska, 2021	Based on the anthropomorphism level, which reflects the degree of human-likeness in the VI design

Study	Basis for the typology
Sands et al., 2022	Based on AI disclosure, indicating the extent to which the computer-generated nature is explicitly communicated
Miao et al., 2022	Based on form realism and behavioural realism
Byun, Ahn, 2023	Based on anthropomorphism, control (human vs AI), and disclosure
Mouritzen et al., 2024	Based on the reality-virtuality continuum and anthropomorphism
Angmo et al., 2024	Based on anthropomorphism (encompassing both form and behaviour), ownership and disclosure practice
Koles et al., 2024	Based on production source and constructed elements, such as deliberately designed appearances
Kim et al., 2024	Based on form realism (degree of human resemblance) and behavioural realism (degree of human-like behaviour)
Shen, 2024	Based on ownership, human-likeness, and a communicative typology
Thomas et al., 2025	Based on human-likeness and ownership
Looi et al., 2025	Based on disclosure practices

Complementing design-oriented dimensions, ownership provides a different categorisation, shifting the focus from the VI's construction to controlling actors. Synthesising insights from existing research, VI can be organised broadly into three ownership models: brand-owned, agency-produced, and creator-led (Thomas et al., 2025; Mouritzen et al., 2024; Koles et al., 2024). 'Virtual free agents' are created and managed by independent digital agencies, which allow them the flexibility to partner with various brands. In contrast, 'branded VI' or 'virtual spokes-character' is owned by a specific brand with the purpose of endorsing its products (Koles et al., 2024; Thomas et al., 2025). This distinction is crucial, as it directly impacts perceived VI authenticity. While brand ownership offers benefits like high controllability and reduced public relations risk, it can compromise the VI's authenticity (Koles et al., 2024; Thomas et al., 2025). This is due to audience perception of motivation: VIs managed by a single creator are more likely to be seen as driven by intrinsic passion, thereby appearing more genuine; conversely, VIs controlled by a broad team of behind-the-scenes actors, such as founders, visual artists and content creators, are frequently viewed as extrinsically motivated by commercial interests, undermining their perceived autonomy and sincerity (Koles et al., 2024; Thomas et al., 2025). Byun and Ahn (2023) frame ownership and the associated centralised control as a fundamental element of VI identity as a communication source. This framework highlights the strategic advantages of VI: the programmatic nature and high degree of controllability, which allows content consistency, predictability, and long-term cost-effectiveness, while maintaining the risk associated with HI (Byun, Ahn, 2023). However, a critical limitation stemming from the centralised control

is VI's inability to assume accountability, as all legal and ethical responsibility is shifted to the creators (Byun, Ahn, 2023), who can potentially avoid responsibility by remaining anonymous (Mouritzen et al., 2024). The anonymity of creators also introduces an unexplored risk of consumer backlash when the identity of the human creator misaligns with a managed VI, particularly when the VI represents a marginalised group, raising questions of 'cultural appropriation' and 'performative allyship' (Thomas et al., 2025). Research into the concept of centralised control indicated that it contributes to a perceived psychological distance from the audience, which may compromise the VI's authenticity and persuasive power (Byun, Ahn, 2023). This distance means audiences attribute less responsibility to the VI, shifting it to their managing agencies or the endorsed brands (Liu, Lee, 2024). This influencer agency concept dynamic creates an asymmetrical impact, where a brand's explicit external management has a minimal effect on the VI's standing, because consumers already perceive them as managed entities (Sands et al., 2022). While this 'buffer effect' allows brands to exert complete creative control without the loss of credibility that an HI might suffer, it is countered by a persistent trust deficit in VI, which is directly tied to their greater social psychological distance from the audience (Sands et al., 2022). This highlights the fact that a VI's value is not determined solely by its appearance or storyline, but also by how audiences perceive the intentions of the managers behind it.

Another important dimension of VI research concerns sponsorship disclosure, where practices such as transparent labelling and non-disclosure are understood not only as methodological choices but as strategies that shape the perception of authenticity, persuasion (Kim et al., 2023; Looi et al., 2025) and regulatory risk (Thomas et al., 2025). Empirical studies consistently demonstrate that sponsorship disclosure leads to a decrease in perceived message credibility and overall post engagement (Kim et al., 2023; Looi et al., 2025). This effect is so prominent that the persuasive advantage of highly human-like VI vanishes when sponsorship is explicitly disclosed (Kim et al., 2023). Paradoxically, another paper states that despite lower engagement, a post with disclosure elicited more positive sentiment than a non-disclosed post (Looi et al., 2025). This inconsistency may be explained by a concept known as the 'machine heuristic', which suggests that individuals who believe machines are objective may perceive a VI's transparent disclosure as a signal of authenticity rather than a manipulative tactic (Lee et al., 2025). This framework helps to explain the findings that when a commercial purpose is communicated explicitly, VI can be perceived as more authentic than HI (Lee et al., 2025).

In influencer marketing, human influencers are commonly classified as nano, micro, macro and mega influencers, according to the follower count (Campbell,

Farrell, 2020; Gómez, 2019; Şenyapar, 2024). The underlying assumption is that a larger audience provides greater reach for brand awareness, while lower-tier influencers exert a stronger attitudinal and behavioural influence through more intimate parasocial relationships (Looi, Kahlor, 2024). This raises the question of whether such a follower-based classification is equally meaningful for VI, whose appeal may derive less from audience size and more from factors such as anthropomorphic design, narrative coherence, ownership structure and sponsorship disclosure. While VI can similarly be categorised by audience size, the research provided reveals that such a framework is unreliable for predicting VI's actual impact (Dong et al., 2024). A key finding highlights that the 'mega-influencer follower effect' (the positive response to advertised brands associated with a large follower base) is a phenomenon exclusive to HI, and does not extend to VI (Dong et al., 2024). This is because VIs are perceived as low-agency entities, defined by the absence of ambition and independent goals, which restricts VI's ability to provide followers with the perceived empowerment typically associated with HI autonomy and status (Dong et al., 2024). VIs also generate significantly less engagement than HI, regardless of their follower count (Looi, Kahlor, 2024). Furthermore, the relationship between VIs' follower count and engagement is not linear, with both nano and mega influencers sometimes receiving greater engagement than macro influencers (Looi, Kahlor, 2024). The 'uncanny valley effect' concept is introduced to explain this curvilinear behaviour, suggesting that VIs' perceived lack of realness can cause discomfort and distrust, which overrides the presumed benefits of a large audience (Looi, Kahlor, 2024). Therefore, while the follower count can categorise VIs, the number of followers is an unreliable metric for predicting the influence.

Conclusions

This study enriches our knowledge of a new form of influencers, virtual influencers, through a systematic analysis of scientific literature. It has highlighted the differences in perception between human and virtual influencers, as well as between artificial influencers and virtual influencers. The analysis revealed the main characteristics of virtual influencers. They are digitally created and managed by individuals, brands or agencies. Virtual influencers are non-human entities, embodied with social roles, distinct personalities, and anthropomorphic features designed to perform communicative, social and persuasive functions that are commonly associated with human influencers operating through social media profiles.

Apart from definitional terms, this paper also presents different dimensions for segmenting virtual influencers into various types. We contribute to the knowledge of virtual influencers by presenting a variety of virtual influencers and their ta-

xonomies. The study has extended existing studies by including and comparing different typologies used in previous studies. Based on the animation-humanity (anthropomorphism) continuum, the most popular typology foresees differences in attitude towards virtual influencers. This raises the question of whether previous studies of the superiority of virtual influencers over human influencers could be compared, if studies apply various types of virtual and human influencers. Moreover, this design-oriented dimension is far from perfect, as it is based on the influencer's picture similarity with humans rather than their body behaviour. The ownership-related typology provides a different categorisation, shifting the focus from virtual influencer construction to controlling actors. This typology opens up a new stream for future research on authenticity and perceived autonomy. Additionally, the dimension mentioned is closely related to the application of sponsorship disclosure. We expect this dimension to become increasingly crucial as the number of virtual influencers grows, including some that present fake or misleading information. This could lead to a general scepticism towards virtual influencers, potentially harming their perceived trust. Finally, a growing number of followers raises the question of whether a theory of social capital could be applied to virtual influencers. The existing typology of influencers as nano, micro, macro and mega-influencers works for human influencers. But what differences in social media audience attitudes and behaviour will be found among these types of virtual influencer, and will some differences appear when comparing virtual and human influencers with the same number of followers? All these questions increase the need for future studies, which will create a stronger background for categories of virtual influencer, and will show significant differences between various categories.

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