

A Conceptual Model of Consumer–Virtual Influencer Relationships: A Qualitative Meta-Synthesis

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Abstract

Purpose: The emergence of virtual influencers (VIs) as AI-driven digital entities has transformed the landscape of influencer marketing. However, the existing literature remains fragmented, lacking a unified conceptual framework to explain the complex dynamics of consumer–virtual influencer relationships. This study aims to synthesize fragmented qualitative findings and provide a comprehensive conceptual model regarding the mechanisms of the formation, maintenance, and consequences of these relationships.

Methodology: Utilizing a qualitative meta-synthesis approach based on the seven-stage framework of Sandelowski and Barroso, this study systematically analyzes 26 studies that contain qualitative empirical evidence or substantive qualitative components. For mixed-method and multi-method studies, only the relevant qualitative findings were extracted and coded, while conceptual, typological, and quantitative components were used only to contextualize or interpret the synthesized qualitative evidence. Quality appraisal was conducted using the CASP qualitative checklist, followed by iterative coding, constant comparison, and conceptual abstraction.

Findings: The analysis resulted in the identification of 81 basic codes organized into six overarching themes: consumer perceptions and motivations; virtual influencer design and characteristics; relational and emotional mechanisms; impacts on consumer well-being; marketing effectiveness and commercial outcomes; and ethical challenges. The model integrates these themes while recognizing consumer well-being as a distinct psychosocial outcome that may be experienced positively or negatively across different forms of consumer engagement with virtual influencers.

Conclusion: This conceptual model provides a roadmap for future research in digital marketing and offers a theoretical framework for understanding the nature of human-machine relationships. The findings also suggest practical strategies for brands to effectively manage virtual influencers and mitigate perceptual challenges, such as the uncanny valley paradox.

Keywords: Virtual Influencer, Qualitative Meta-Synthesis, Parasocial Relationships, Anthropomorphism, Influencer Marketing.

Introduction

Influencer marketing has grown into a multi-billion-dollar industry over the past two decades, reshaping brand-consumer engagement and purchasing decisions (Audrezet et al., 2020; Leung et al., 2022). Recently, this domain has encountered a transformative shift with the emergence of Virtual Influencers (VIs)—digital entities powered by AI and CGI—that transcend traditional influence boundaries (Appel et al., 2020; Sands et al., 2022). Virtual influencers are digitally created personas, often AI-driven, designed to engage audiences on social media (Mouritzen et al., 2024). Unlike human influencers, they have no physical existence; they are virtual constructs managed by creative teams or algorithms (Robinson, 2020; Thomas & Fowler, 2021). Prominent examples include Lil Miquela (debut 2016), who collaborates with global brands like Calvin Klein, Samsung, and Prada (Drenten & Brooks, 2020; Franke et al., 2023); Shudu, the first digital supermodel (Sobande, 2021); Noonooori, a stylized, doll-like figure in luxury marketing (Gambetti & Kozinets, 2024); and Lu do Magalu, a commercially successful Brazilian persona (Allal-Cherif et al., 2024).

Brands' adoption of virtual influencers stems from their unique advantages: freedom from physical and behavioral constraints, controllability, flexibility, cost-effectiveness, and reduced reputational risks (Mouritzen et al., 2024; Sands et al., 2022). Despite their artificial nature, these entities can establish parasocial relationships with followers, fostering intimacy and loyalty (Lou et al., 2023; Stein et al., 2024). Recent advances in generative AI and natural language processing have made them more interactive, personalized, and realistic (Gambetti & Kozinets, 2024; Zhou et al., 2024). The global VI market reflects this momentum, with projections indicating sustained growth (Sharma & Kumar, 2026). Despite the growing body of research on virtual influencers, the literature remains fragmented across different dimensions of consumer–virtual influencer relationships (Byun & Ahn, 2023; Laszkiewicz & Kalinska-Kula, 2023). Existing studies have examined specific issues such as anthropomorphism, credibility, authenticity, parasocial relationships, consumer responses, and ethical concerns, but these dimensions have rarely been integrated into a broader explanation of how consumer–virtual influencer relationships develop and lead to diverse outcomes (Audrezet et al., 2025; Gambetti & Kozinets, 2024; Mrad et al., 2025). In addition, although a growing number of empirical studies provide rich qualitative insights into consumers' perceptions, emotions, and experiences, these findings remain dispersed across different contexts and theoretical perspectives and have not yet been systematically synthesized to identify higher-order patterns and relationships. Finally, existing research provides fragmented evidence regarding the simultaneous presence of beneficial and detrimental consequences of virtual influencer engagement, particularly across marketing, psychosocial, and ethical dimensions. These gaps indicate the need for an interpretive synthesis that connects dispersed qualitative evidence and develops a more integrated understanding of consumer–virtual influencer relationships.

To address these gaps, this study employs a Qualitative Meta-Synthesis approach following Sandelowski and Barroso's (2007) framework to conduct a systematic and interpretive integration of prior qualitative research on virtual influencer marketing. This method, grounded in "reciprocal translation of metaphors" and "interpretive synthesis," enables higher levels of abstraction and generation of novel conceptual frameworks (Sandelowski & Barroso, 2007; Thorne, 2019). Unlike systematic reviews or quantitative meta-analyses, qualitative meta-synthesis focuses on interpretive richness, generating new knowledge from dispersed research and offering an appropriate response to the complexity and multi-dimensionality of the virtual influencer phenomenon (Levkov et al., 2024; Liu et al., 2025).

Accordingly, this paper seeks to address the following research question: "How have existing qualitative studies explained the antecedents, underlying psychological mechanisms, interaction processes, and outcomes of consumer relationships with virtual influencers, and how can these fragmented findings be synthesized and reinterpreted into an integrated conceptual model?" The novelty of this research lies in integrating qualitative evidence dispersed across consumer perceptions and motivations, virtual influencer characteristics, relational mechanisms, well-being consequences, marketing outcomes, and

ethical tensions within a single interpretive framework. Rather than claiming that no prior review has examined qualitative evidence, the study extends existing reviews by focusing specifically on the relational mechanisms and consequences connecting these fragmented streams.

Theoretical Background

Virtual Influencers: Conceptualization and Defining Characteristics

Virtual influencers represent a paradigmatic shift in influencer marketing, challenging traditional conceptualizations of influence, authenticity, and human-machine interaction (Jhawar et al., 2023; Mrad et al., 2025). They are defined as digitized entities with anthropomorphized appearances, human bodies, social roles, and their own identity; they can play the role of human influencers by interacting with other humans, controlled either by humans or algorithms (Byun & Ahn, 2023, p. 6). These computer-generated personas are created using AI, CGI, and machine learning to generate avatars with digital personalities and realistic appearances (Arsenyan & Mirowska, 2021; Mouritzen et al., 2024).

Virtual influencers exhibit a spectrum of anthropomorphic features from hyper-realistic figures like Lil Miquela and Shudu to stylized characters like Noonouri, with the former perceived as more trustworthy yet potentially eliciting uncanny valley effects (Franke et al., 2023; Gambetti & Kozinets, 2024). Unlike human influencers, they are entirely controllable by marketers, enabling consistent messaging and curated campaigns while eliminating reputational risks (Sands et al., 2022; Thomas & Fowler, 2021). Research identifies four unique elements distinguishing virtual influencers: customization, flexibility, ownership, and automation (Mouritzen et al., 2024). These characteristics afford unprecedented control over brand representation while raising questions about authenticity and transparency (Audrezet et al., 2025; Koles et al., 2024).

The growing commercial visibility of virtual influencers has been accompanied by rapidly expanding academic attention to their technological, relational, consumer, and societal implications (Audrezet et al., 2025; Laszkiewicz & Kalinska-Kula, 2023). This expansion makes it increasingly important to consolidate fragmented evidence concerning how consumers experience and interpret interactions with virtual influencers.

Parasocial Relationships and Virtual Influencer-Follower Dynamics

Parasocial relationship theory, originating from traditional media studies, describes one-sided emotional bonds individuals form with media figures (Horton & Wohl, 1956). These relationships are imagined connections where consumers feel intimacy and familiarity with the influencer (Liu & Wang, 2025). Research consistently demonstrates that audiences develop emotional attachments to media characters that mimic genuine interpersonal relationships (Breves & van Berlo, 2025; Schramm et al., 2024). On social media, influencers use interactive features like liking, commenting, and direct messaging to foster intimacy, inviting followers into a perceived inner circle (Lou, 2021; Hudders et al., 2021). Recent longitudinal and experience-based research suggests that parasocial relationships can change over time and that both human and virtual influencers may support the development of relational bonds (Breves & van Berlo, 2025). Such evidence is relevant to understanding relationship dynamics, although the temporal development of consumer–virtual influencer relationships remain comparatively underexplored in the qualitative evidence base synthesized here. Challenging assumptions that virtual influencers are harder to bond with (Liu & Wang, 2025; Stein et al., 2024). Liu and Wang (2025) integrate uncanny valley and parasocial relationship theories, demonstrating that anthropomorphism—characterized by humanness, attractiveness, and eeriness—shapes parasocial relationship strength through perceived trustworthiness and wishful identification, with autonomy as a moderating factor. Their research reveals that existing and prospective followers use distinct criteria, highlighting the importance of relationship stage in understanding engagement.

Anthropomorphism and the Uncanny Valley Paradox

Anthropomorphism, the attribution of human qualities to objects or artificial agents, is a defining element in virtual influencer design (Byun & Ahn, 2023; Miao et al., 2022). Research shows it manifests along two dimensions: appearance (visual features like facial form and body structure) and behavior (conversational style, gestures, interactivity, and emotional responsiveness), which shape first impressions and sustain perceptions of social presence and authenticity (Dabiran et al., 2024; Feng et al., 2025; Liu & Wang, 2025; Yin et al., 2025). However, virtual influencers present the uncanny valley paradox: anthropomorphic attributes like attractive appearances predispose social interactions and success (Gutuleac et al., 2024; Dabiran et al., 2024), yet as they become more humanlike, they trigger psychological unease and eeriness, especially when consumers are aware of their artificial nature (Kim et al., 2024; Lim & Lee, 2023). Research consistently finds followers captivated yet unsettled by humanlike virtual influencers (Choudhry et al., 2022; Gutuleac et al., 2024; Lou et al., 2023). Anthropomorphic congruence—alignment between appearance and behavioral anthropomorphism—has emerged as critical: congruent cues foster coherent presence and enhance persuasive impact (Miao et al., 2022; Yao & Ma, 2023), while incongruence, particularly when highly humanlike appearance pairs with mechanical behavior, evokes discomfort or the uncanny valley effect (Liu & Wang, 2025). Research using polynomial regression shows behavior-dominant incongruence (behavior more humanlike than appearance) elicits more favorable responses than appearance-dominant incongruence, suggesting asymmetry in consumer responses to anthropomorphic (mis)alignment (Yao & Ma, 2023).

Source Credibility Theory and Virtual Influencer Effectiveness

Source credibility theory posits that persuasiveness depends on perceived expertise, trustworthiness, and attractiveness of the source (Hovland & Weiss, 1951; Ohanian, 1990). In digital marketing, influencer credibility is central to consumer response (Lou & Yuan, 2019; Belanche et al., 2024). Human influencers benefit from higher perceived trustworthiness and relatability due to real-world experiences, while virtual influencers achieve high attractiveness and consistency but may elicit lower authenticity unless narratives compensate for the machine heuristic (Lim & Lee, 2023). The interplay between influencer type and message appeal creates distinct pathways: virtual influencers generate stronger engagement under hedonic appeals, while human influencers are more persuasive when authenticity is emphasized (Di Cioccio et al., 2024). Consumer innovativeness moderates these effects (Daher., 2025). Jhavar et al. (2023) establish that parasocial interaction builds source credibility, identifying perceived similarity as an added credibility dimension beyond trustworthiness, attractiveness, and expertise. This expansion is particularly relevant as followers relate to virtual personae through perceived lifestyle congruence and shared values, even while acknowledging their artificial nature.

Symbolic Interactionism and Meaning Construction in Virtual Influencer Engagement

Symbolic interactionism explains how consumers construct meaning in interactions with virtual influencers (Blumer, 1986; Fine & Tavory, 2019). Followers actively construct meaning for these digital entities through content interaction and engagement with other followers (Koles et al., 2024). Netnographic analysis reveals consumers negotiate virtual influencer reality by anthropomorphizing, particularly attributing moral and cognitive capabilities (Koles et al., 2024). This meaning-making shapes how users relate to virtual influencer identity, guiding positive engagement (Aw & Chuah, 2021). Shared reality theory extends this: perceptions of moral and cognitive anthropomorphism influence perceived shared reality, resulting in positive affect and engagement (Koles et al., 2024). When followers perceive shared reality, understanding the influencer's identity mutually, they experience positive affect and greater engagement, facilitated by anthropomorphic personality and cognition

attribution. This shared reality construction represents a critical mechanism for meaningful connections, providing foundations for sustained engagement and brand outcomes (Aw & Agnihotri, 2024; Koles et al., 2024).

Integrating Theoretical Perspectives

In summary, the review of theoretical literature reveals that four complementary theoretical frameworks have been employed to explain consumer engagement with virtual influencers: Parasocial Relationship Theory, which elucidates the formation of one-sided emotional bonds (Horton & Wohl, 1956; Breves & van Berlo, 2025); Anthropomorphism Theory, which examines the attribution of human characteristics to digital entities (Byun & Ahn, 2023; Yao & Ma, 2023); Source Credibility Theory, which emphasizes perceived expertise, trustworthiness, and attractiveness (Ohanian, 1990; Lou & Yuan, 2019); and Symbolic Interactionism, which addresses meaning-making processes and the construction of shared reality in digital interactions (Blumer, 1986; Koles et al., 2024).

Each of these frameworks illuminates specific aspects of virtual influencer-consumer relationships: parasocial relationship theory explains how emotional attachment develops; anthropomorphism theory reveals the role of appearance and behavioral features in the acceptance of these entities; source credibility theory identifies persuasive factors; and symbolic interactionism clarifies the interpretive and meaning-making processes in follower interactions. However, the synergy and interaction among these four frameworks in explaining the complete chain of consumer-virtual influencer relationships from initial attraction to long-term consequences has not been systematically examined in prior research, and the existing literature lacks an integrated model demonstrating how these mechanisms relate to one another. This gap provides a suitable foundation for applying qualitative meta-synthesis to interpretively integrate fragmented findings and propose a comprehensive model. The analytical logic of the present synthesis links these perspectives rather than treating them as parallel explanations: The four perspectives are therefore treated as complementary interpretive lenses rather than as components of a fixed causal chain. Anthropomorphism helps explain how consumers perceive human-like qualities in virtual entities; Source Credibility Theory illuminates' credibility-related judgments; Parasocial Relationship Theory addresses perceived relational bonds; and Symbolic Interactionism emphasizes the construction and negotiation of meaning. Their integration is consequently conceptual rather than sequential, with each perspective illuminating a distinct but interconnected dimension of consumer-virtual influencer relationships.

Empirical Background

Additional studies broaden the phenomenon beyond individual persuasion. Gerrath et al. (2024) examine virtual influencers in pro-environmental communication; Liyanaarachchi et al. (2024) identify privacy vulnerability, cybercrime, and fake profiles; Levkov et al. (2024) explore their use for interethnic tolerance; Jain et al. (2024) connect narrative transportation with consumer well-being; and Shin and Lee (2023) highlight the reproduction of gender, beauty, and body stereotypes. Comparative and typological studies also clarify how virtual influencers differ in anthropomorphism, authenticity, scalability, controllability, and social presence (da Silva Oliveira & Chimenti, 2021; Mouritzen et al., 2024; Gambetti & Kozinets, 2024; Audrezet et al., 2025; Gammarano et al., 2025). Taken together, the empirical literature is rich but fragmented, supporting the need for an interpretive synthesis that connects antecedents, relational mechanisms, psychosocial consequences, commercial outcomes, and ethical tensions.

Qualitative and mixed-method research provides deeper insight into the processes underlying these outcomes. Mrad et al. (2025) show that human-like traits can trigger social comparison and complex emotional responses while anthropomorphism strengthens relational development. Lou et al. (2023) identify motivations such as novelty, information, entertainment, surveillance, aesthetics, social

interaction, and emotional connection, while also documenting uncanny-valley responses. Koles et al. (2024) demonstrate that authenticity can be constructed through anthropomorphism, moral and cognitive attribution, and shared reality. Liu et al. (2025) and Su (2025) further emphasize emotional engagement, storytelling, authenticity, transparency, cultural meaning, and ethical concerns. Nasr et al. (2025) add evidence of both beneficial and harmful emotions arising from social comparison, including inspiration, envy, shame, worry, and sympathy, together with coping responses.

Recent empirical studies have examined virtual influencers from complementary perspectives. Studies using experiments and surveys report that perceived humanness, appearance, emotional expression, anthropomorphism, and influencer attributes can shape purchase intention, engagement, credibility, and parasocial responses. For example, Fu et al. (2026) linked browsing motives, openness to change, parasocial relationships, and purchase intention; Xia et al. (2025) showed that higher beauty levels can reduce psychological distance and enhance purchase intention, particularly for intrinsic aesthetic products; and Jiang et al. (2025) found that emotional expression can influence brand authenticity, purchase intention, and follow intention. Other quantitative or fsQCA-based studies similarly identify combinations of warmth, relatedness, interactivity, competence, empathy, fairness, credibility, and consumer traits as relevant to behavioral responses (Davlembayeva et al., 2025; Vo et al., 2025; Park et al., 2024).

Methodology

This study employs a qualitative meta-synthesis to develop conceptual knowledge through the systematic integration and reinterpretation of prior qualitative findings (Sandelowski & Barroso, 2007; Walsh & Downe, 2005). Following the seven-stage framework of Sandelowski and Barroso, the process comprised formulation of the research question, systematic search, screening and selection, methodological appraisal, data extraction, interpretive synthesis, and conceptual framework development. A comprehensive search was conducted in Scopus, Web of Science, Google Scholar, EBSCOhost, and JSTOR for studies published from 2020 onward. The search string was: (virtual influencer OR AI influencer OR CGI influencer OR digital influencer OR computer-generated persona OR virtual human) AND (qualitative OR interview OR netnography OR phenomenological OR case study OR thematic analysis OR grounded theory OR ethnography). Studies were retained when they focused on virtual influencers in marketing/consumer contexts and reported empirical findings or a substantive qualitative component in peer-reviewed English-language publications. In mixed-method and multi-method studies, only the relevant qualitative evidence was extracted for coding; conceptual, typological, or quantitative elements were used only to contextualize or interpret the synthesized evidence rather than being treated as primary qualitative data. The database searches yielded 897 records. After duplicate removal, the remaining records underwent title and abstract screening against the predefined eligibility criteria. Potentially relevant studies then proceeded to full-text assessment, with exclusion decisions documented by reason. The final corpus comprised 26 eligible studies. The corpus therefore intentionally preserves methodological diversity while keeping the unit of synthesis focused on qualitative evidence.

Quality appraisal was conducted using the CASP qualitative checklist across clarity of aims, methodological appropriateness, research design, recruitment, data collection, reflexivity, ethics, analysis rigor, findings clarity, and research value (Long et al., 2020). Two researchers independently assessed the studies; discrepancies in appraisal and coding were discussed until consensus was reached. CASP was used to inform interpretive confidence rather than to mechanically exclude studies or assign numerical weights: findings supported by clearer methodological reporting were treated with greater confidence, whereas evidence affected by methodological limitations was interpreted cautiously. Data extraction covered bibliographic details, aims, methodology, participants and sampling, data collection and analysis, key findings/themes, and theoretical contributions. Coding was conducted iteratively

across the included studies, beginning with initial coding of relevant findings and progressing to the comparison, grouping, and abstraction of related concepts into broader categories and overarching themes. Constant comparison was used throughout the process to identify patterns, similarities, differences, and relationships across studies (Braun & Clarke, 2006; Gioia et al., 2013; Charmaz, 2014). The two coders independently reviewed a common subset and then compared code boundaries, terminology, and thematic placement; all disagreements were resolved through discussion and refinement of the codebook before the final synthesis. Thus, the final coding structure reflects consensus between coders rather than unexamined single-researcher interpretation. The synthesis then moved from descriptive extraction toward higher-order interpretation, while an audit trail and reflexive documentation were maintained to strengthen credibility, dependability, and confirmability (Lincoln & Guba, 1985; Arsel, 2017).

Findings

The present qualitative meta-synthesis integrates evidence from 26 eligible studies addressing consumer–virtual influencer relationships. Because the corpus intentionally accommodates methodological diversity, the analysis distinguishes between studies that contributed substantive qualitative evidence and studies whose conceptual, theoretical, typological, or analytical contributions were used only for contextual interpretation. Across the qualitative evidence synthesized, 81 basic codes were progressively organized into six overarching themes. In this discussion, we first present an integrated conceptual model that synthesizes these themes into a coherent framework.

Table 1. includes all 26 studies retained in the review corpus.

No	Authors (Year)	Methodology	Sample	Research Focus
1	Gerrath et al. (2024)	Mixed-methods (interviews + experiments)	16 interviews, 851 experiment participants	Examining how message warmth and trust in experts influence consumer engagement with virtual influencers in pro-environmental campaigns, with a focus on social-psychological distance as a mediating mechanism
2	Tingelhoff et al. (2025)	Mixed-methods (survey + interviews)	179 survey, 30 interviews	Investigating how immersive virtual influencers (IVIs) and their design elements enhance consumers' Immersive Time (ImT) on VR platforms, differentiating between potential and incumbent users
3	Nguyen & Hoang (2026)	Mixed-methods (interviews + SEM)	13 interviews, 158 survey	Exploring how virtual influencer attributes (attractiveness, homophily, anthropomorphism) and customer traits (hedonic motivation, ideal self-congruence) influence parasocial relationships, emotional attachment, and customer engagement
4	Jhawar et al. (2023)	Conceptual + case study	5 virtual influencers	Proposing a conceptual model of virtual influencer acceptance based on parasocial interaction and source credibility theory, identifying perceived similarity as an additional credibility dimension
5	Mrad et al. (2025)	Phenomenological interviews	40 participants	Uncovering how social comparisons and parasocial relationships manifest in virtual influencer-follower dynamics, identifying

				jealousy, scorn, motivation, and gratitude as key emotional responses to anthropomorphic traits
6	Mouritzen et al. (2024)	Conceptual taxonomy development	-	Developing a 2×2 taxonomy of virtual influencers based on anthropomorphism and reality-virtuality continuum, identifying customization, flexibility, ownership, and automation as unique VI characteristics
7	Barbosa & Oliveira (2025)	Qualitative multi-method	12 interviews, 3 focus groups	Examining the transformative potential of virtual influencers in metaverse advertising for social change, focusing on inclusivity, sustainability, and mental health advocacy
8	Su (2025)	Case study	2 virtual influencers	Analyzing virtual influencer effectiveness through Social Presence Theory and Social Identity Theory, exploring authenticity, transparency, and ethical considerations in digital marketing
9	Robinson (2020)	Conceptual philosophical analysis	-	Investigating ontological and ethical dimensions of virtual influencers, arguing for moral responsibility and transparency as key considerations in virtual identity construction
10	Lou et al. (2023)	Semi-structured interviews	26 participants	Identifying six primary motivations (novelty, information, entertainment, surveillance, aesthetics, social interaction) for following virtual influencers, and examining uncanny valley effects and mitigating factors
11	Audrezet et al. (2025)	Conceptual	-	Providing a consolidated definition of virtual influencers and identifying three thematic research areas: comparison with human influencers, VI characteristics, and societal/ethical implications
12	Allal-Cherif et al. (2024)	Mixed-methods (case studies + interviews)	16 experts	Exploring virtual influencer advantages over human influencers, emphasizing storytelling, authenticity, trust, and cost-effectiveness in digital marketing campaigns
13	Liyanaarachchi et al. (2024)	In-depth interviews	28 participants	Introducing the multi-privacy paradox concept, examining unbalanced privacy risks from data vulnerability, cybercrime, and fake profiles in virtual influencer interactions
14	Gambetti & Kozinets (2024)	Netnography	174 virtual influencers	Developing a four-type typology (hyper-human, anti-human, pan-human, alter-human) and examining material-discursive practices of virtual influencers across social media platforms
15	Levkov et al. (2024)	Focus groups	4 groups (37 participants)	Exploring opportunities and challenges of using virtual influencers to promote interethnic tolerance, identifying content quality and authenticity as critical success factors

16	Jain et al. (2024)	Semi-structured interviews	25 participants	Investigating how narrative transportation with virtual influencers affects hedonic and eudaimonic well-being, proposing a conceptual model of VI influence on consumer well-being
17	Park et al. (2024)	Mixed-methods (experiment + qualitative validation)	406 participants + post-hoc interviews	Revisiting the Elaboration Likelihood Model (ELM) in virtual influencer context, comparing high- vs low-involvement products and examining perceived expertise and attractiveness as antecedents
18	Jiang et al. (2025)	Mixed-methods (experiments + qualitative interviews)	691 participants + post-hoc interviews	Examining the effect of virtual influencers' emotional expression (smile vs. non-smile) on brand authenticity, purchase intention, and follow intention through affective and cognitive empathy
19	Nasr et al. (2025)	In-depth interviews	31 participants	Applying Social Comparison Theory to examine how followers compare with virtual influencers, identifying upward/downward comparison effects and coping mechanisms (emotional and behavioral regulation)
20	Gammarano et al. (2025)	Netnography + interviews	41 interviews	Comparing human and virtual influencers across emotional, rational, communicative, and interactive dimensions, identifying unique engagement characteristics of each influencer type
21	Shin & Lee (2023)	Visual content analysis	115 virtual fashion influencers	Analyzing reproduced bodies of virtual fashion influencers through body discourse, examining issues of standardized stereotypes, male gaze, and colonial gender hierarchy
22	Liu et al. (2025)	Phenomenological + netnography	8 interviews	Investigating emotional engagement in virtual influencer endorsements using the AIDMA model, identifying authenticity, entertainment, and aesthetic appeal as key antecedents of attachment
23	Elyamany et al. (2025)	Mixed-methods netnography	334 posts	Conducting a trans-disciplinary forensic analysis of Lil Miquela's virtual identity performance using computer vision, sentiment analysis, and semiotics to examine authenticity construction
24	Koles et al. (2024)	Qualitative interviews	-	Examining authenticity manifestations of virtual influencers in the metaverse through anthropomorphism, shared reality theory, and moral/cognitive attribution
25	Choudhry et al. (2022)	Content analysis	-	Investigating real influence of virtual influencers on followers, examining credibility, trust, and anthropomorphism as key mechanisms of VI-follower relationship formation

26	da Silva Oliveira & Chimenti (2021)	Netnography + interviews	8 experts, 4 VIs	Proposing five categories for understanding virtual influencers (anthropomorphism, attractiveness, authenticity, scalability, controllability) and examining consumer perceptions
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Note. For mixed-method and multi-method studies, only the substantive qualitative evidence relevant to consumer–virtual influencer relationships was extracted and coded. Quantitative findings were excluded from the qualitative synthesis. Conceptual, theoretical, typological, or analytical components were used only as contextual or interpretive sources where relevant and were not coded as primary qualitative evidence.

Table 2. Overarching Themes, Basic Codes, and Associated Studies

Theme	Sub-Theme	Basic Codes	Associated Studies
1. Consumer Perceptions & Motivations	1-1. Motivational Drivers	Novelty-seeking, information seeking, entertainment, escapism, surveillance and daily tracking, need for social interaction/validation, need for emotional connection, need for social validation	Lou et al. (2023); Nguyen & Hoang (2026); Su (2025); Gambetti & Kozinets (2024); da Silva Oliveira & Chimenti (2021); Allal-Cherif et al. (2024); Audrezet et al. (2025)
	1-2. Credibility Perceptions	Perceived expertise, perceived trustworthiness, perceived attractiveness, perceived similarity, ideal self-congruence	Jhavar et al. (2023); da Silva Oliveira & Chimenti (2021); Allal-Cherif et al. (2024); Belanche et al. (2024); Nguyen & Hoang (2026)
2. Virtual Influencer Design & Characteristics	2-1. Appearance & Form	Appearance anthropomorphism (form realism, aesthetic style, hyper-realistic vs. stylized/anime), visual and aesthetic style, intentional imperfections (e.g., freckles, gap teeth), appearance diversity (race, gender, age)	Mouritzen et al. (2024); Jiang et al. (2025); Koles et al. (2024); da Silva Oliveira & Chimenti (2021); Tingelhoff et al. (2025); Yao & Ma (2023); Yin et al. (2025); Gambetti & Kozinets (2024); Audrezet et al. (2025)
	2-2. Behavior & Functionality	Behavioral anthropomorphism (interactivity, emotional expression, communicative style), behavioral realism, interactive and responsive capabilities, personality, storytelling, level of autonomy, customizability, scalability, controllability, transparency about virtual nature	Mrad et al. (2025); Lou et al. (2023); Choudhry et al. (2022); Stein et al. (2024); Breves & van Berlo (2025); Schramm et al. (2024); Liu & Wang (2025); Koles et al. (2024)

3. Relational and Emotional Mechanisms	3-1. Bond Formation	Parasocial relationship (intimacy, familiarity), friendship/companionship, trust and loyalty, sense of community belonging	Mrad et al. (2025); Lou et al. (2023); Choudhry et al. (2022); Stein et al. (2024); Breves & van Berlo (2025); Schramm et al. (2024); Liu & Wang (2025); Koles et al. (2024)
	3-2. Affective & Cognitive Processes	Wishful identification, shared reality construction, affective empathy, cognitive empathy, emotional resonance, narrative transportation, immersion, mental imagery, emotional contagion, brand attachment through influencer	Koles et al. (2024); Nguyen & Hoang (2026); Jain et al. (2024); Liu et al. (2025); Gammarano et al. (2025); Jiang et al. (2025); Choudhry et al. (2022); Mrad et al. (2025)
4. Impacts on Consumer Well-being	4-1. Positive Well-being	Hedonic well-being (excitement, joy, entertainment), eudaimonic well-being (personal growth, self-acceptance, positive relationships, autonomy), inspiration and motivation, positive mood effects, emotional resilience and coping	Jain et al. (2024); Barbosa & Oliveira (2025); Gammarano et al. (2025); Liu et al. (2025); Choudhry et al. (2022); Gutuleac et al. (2024)
	4-2. Negative Well-being	Upward/downward social comparison, envy and jealousy, shame and feelings of inadequacy, appearance anxiety, negative mood effects (sadness, worry), emotion regulation, behavioral regulation	Nasr et al. (2025); Mrad et al. (2025); Liu et al. (2025); Choudhry et al. (2022); Lim & Lee (2023); Kim et al. (2024); Dabiran et al. (2024)
5. Marketing Effectiveness & Commercial Outcomes	5-1. Brand-Related Outcomes	Brand awareness, brand image, brand credibility and trust, emotional brand connection, brand loyalty, impact on brand attitude	Gerrath et al. (2024); Lou et al. (2023); Vo et al. (2025); Park et al. (2024); Fu et al. (2026); Allal-Cherif et al. (2024); Belanche et al. (2024)
	5-2. Consumer Behavioral Outcomes	Purchase intention, engagement (likes, comments, shares), electronic word-of-mouth (eWOM), conversion and sales rate, intention to follow the influencer, pro-social behavior adoption (environmental, interethnic tolerance)	Fu et al. (2026); Jiang et al. (2025); Liu et al. (2025); Nguyen & Hoang (2026); Gammarano et al. (2025); Barbosa & Oliveira (2025); Xia et al. (2025); Di Cioccio et al. (2025); Gerrath et al. (2024); Levkov et al. (2024); Vo et al. (2025)

6. Ethical Challenges	6-1. Core Paradoxes	Authenticity paradox, uncanny valley paradox, privacy paradox (data vulnerability, cybercrime, fake profiles)	Robinson (2020); Liyanaarachchi et al. (2024); Lou et al. (2023); Koles et al. (2024); Franke et al. (2023); Sands et al. (2022); Choudhry et al. (2022); Mouritzen et al. (2024)
	6-2. Socio-Cultural & Moral Risks	Reproduction of gender stereotypes, reproduction of racial stereotypes, unrealistic beauty standards, moral responsibility and transparency, impact on vulnerable groups (children, adolescents), displacement and replacement of humans, misinformation and deception	Shin & Lee (2023); Audrezet et al. (2025); Su (2025); Elyamany et al. (2025); Levkov et al. (2024); Mouritzen et al. (2024); Robinson (2020); Liyanaarachchi et al. (2024); Sands et al. (2022); Thomas & Fowler (2021); Arsenyan & Mirowska (2021); da Silva Oliveira & Chimenti (2021)

An Integrated Conceptual Model of Consumer–Virtual Influencer Relationships

To interpret the six themes, we draw on four complementary frameworks: Parasocial Relationship Theory (Horton & Wohl, 1956), Anthropomorphism Theory (Byun & Ahn, 2023; Miao et al., 2022), Source Credibility Theory (Ohanian, 1990), and Symbolic Interactionism (Blumer, 1986; Koles et al., 2024). Based on synthesized findings, the conceptual model comprises three analytical domains: (1) antecedents, including consumer perceptions and motivations and virtual influencer design characteristics; (2) relational mechanisms, including bond formation and affective/cognitive processes; and (3) consequences, comprising well-being impacts, marketing effectiveness and commercial outcomes, and ethical challenges. Consumer well-being is treated as a distinct psychosocial outcome rather than as an intermediate stage leading to marketing outcomes. The reviewed studies indicate both positive and negative well-being experiences, including excitement, inspiration, self-acceptance, envy, shame, and appearance-related anxiety. Differences across studies suggest that these outcomes may vary with consumer and interactional conditions, including self-esteem, social comparison orientation, technology familiarity, and characteristics of the interaction. Marketing outcomes constitute a separate outcome domain, including engagement, brand-related responses, loyalty, and purchase intention.

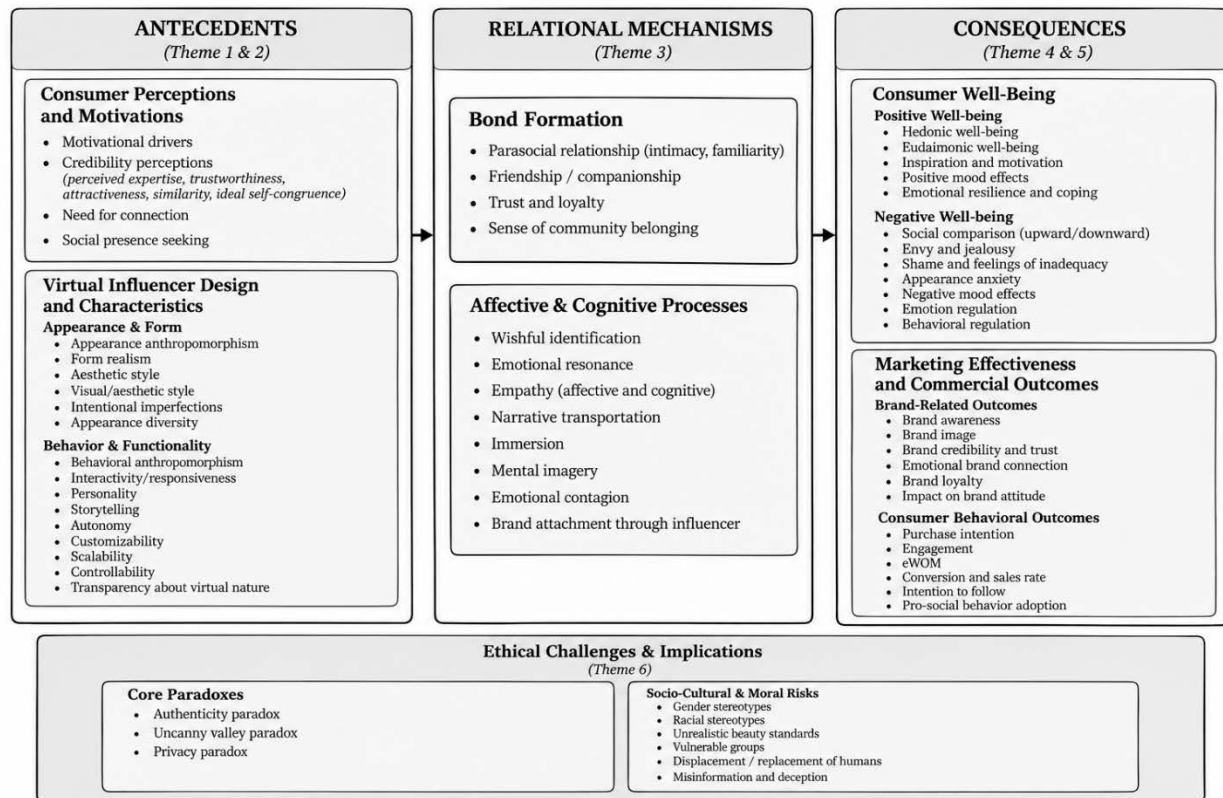


Figure 1. A Conceptual Model of Consumer–Virtual Influencer Relationships

Interpretation of Themes and Theoretical Integration

Themes 1 and 2: Antecedents and Drivers

The first and second themes synthesize factors initiating consumer engagement. Consistent with Anthropomorphism Theory (Byun & Ahn, 2023; Miao et al., 2022), both appearance-based and behavior-based anthropomorphic features serve as foundational cues triggering social responses. Our synthesis reveals these features interact with source credibility dimensions (expertise, trustworthiness, attractiveness, similarity) and consumer motivations (novelty-seeking, information, entertainment, escapism) to determine initial attraction (Lou et al., 2023; Nguyen & Hoang, 2026; Jhavar et al., 2023). A critical insight is the distinction between objective design features (Theme 2) and subjective consumer perceptions (Theme 1)—design features are objectively embedded while perceptions like credibility and ideal self-congruence are subjectively constructed. This matters because same design features may elicit different responses across consumer characteristics and cultural contexts (Franke et al., 2023). Anthropomorphic congruence—alignment between appearance and behavioral human-likeness—plays a key role: congruence enhances persuasive impact, while incongruence triggers uncanny valley discomfort (Yao & Ma, 2023; Kim et al., 2024; Lou et al., 2023), suggesting designers should prioritize behavioral realism alongside visual realism to maintain congruence.

Theme 3: Relational and Emotional Mechanisms

The third theme captures psychological processes transforming attraction into sustained bonds. Our synthesis substantiates Parasocial Relationship Theory (Horton & Wohl, 1956), showing virtual influencers evoke one-sided emotional attachments comparable to humans (Stein et al., 2024; Breves & van Berlo, 2025). Three interconnected mechanisms are central: parasocial relationships develop

through intimacy and familiarity over time (Lou et al., 2023; Mrad et al., 2025); wishful identification emerges when influencers embody idealized values (Nasr et al., 2025; Mrad et al., 2025), aligning with Social Identity Theory (Tajfel & Turner, 1979); and shared reality construction involves attributing moral and cognitive capacities to influencers (Koles et al., 2024). These mechanisms operate in parallel and reinforce each other identification with values increases moral attribution, strengthening parasocial bonds constituting a dynamic, self-reinforcing system (Breves & van Berlo, 2025). Consumers may acknowledge the fictional or constructed nature of a virtual influencer while nevertheless regarding its narratives, values, or communicative style as meaningful or authentic. Transparency may therefore alter the basis on which authenticity is evaluated rather than simply increasing or reducing authenticity perceptions (Koles et al., 2024; Lou et al., 2023).

Theme 4: Impacts on Consumer Well-being

The fourth theme captures consumer well-being as an important consequence of virtual influencer engagement rather than as a universal intermediate step toward marketing outcomes. The synthesis identifies both positive and negative experiences, including hedonic and eudaimonic well-being, inspiration, self-acceptance and emotional resilience on one side, and envy, shame, appearance anxiety, worry and inadequacy on the other (Jain et al., 2024; Nasr et al., 2025). The direction of these consequences appears contingent on individual and contextual conditions such as self-esteem, social comparison orientation, technology familiarity, cultural background, and the design and narrative characteristics of the influencer. Consumers may also employ emotion regulation and behavioral disengagement to manage negative effects (Nasr et al., 2025). Accordingly, well-being should not be interpreted as a direct antecedent of marketing performance; rather, it represents a parallel psychosocial outcome that can coexist with, and potentially interact with, commercial and ethical consequences.

Theme 5: Marketing Effectiveness and Commercial Outcomes

The fifth theme delineates the behavioral and commercial consequences associated with virtual influencer engagement. Across the synthesized studies, outcomes include purchase intention, engagement, brand loyalty, brand awareness, and selected pro-social responses (Fu et al., 2026; Vo et al., 2025; Gerrath et al., 2024). Because the evidence base combines qualitative and mixed-method studies, these findings are interpreted as recurring relationships and conditions rather than as definitive causal effects. The synthesis indicates that credibility, authenticity, parasocial interaction, emotional engagement, and contextual fit can shape commercial responses, while product type and consumer characteristics help explain variation across studies.

Notably, our synthesis reveals that virtual influencers are particularly effective for raising brand awareness and enhancing brand image especially for brands seeking a futuristic or innovative positioning but their influence on purchase intention is more variable and contingent on factors such as product-endorser fit (Lou et al., 2023; Park et al., 2024). This finding aligns with the Elaboration Likelihood Model (Petty & Cacioppo, 1986), suggesting that for low-involvement products, peripheral cues (emotional appeals, attractiveness) are more influential, while for high-involvement products, central cues (credibility, expertise) dominate. For instance, Xia et al. (2025) demonstrated that virtual influencers are more effective for intrinsic aesthetic products than for utilitarian products, supporting the moderating role of product type identified in several studies.

A key insight from the synthesis is that the effectiveness of virtual influencers is not uniform across marketing contexts. Instead, it appears to depend on the interaction among influencer characteristics, consumer characteristics, product characteristics, and contextual conditions. This contingency perspective cautions against treating virtual influencers as universally effective and supports a more context-sensitive interpretation of the commercial outcomes reported in the literature.

Theme 6: Ethical Challenges

The sixth theme addresses the psychosocial, cultural, and ethical consequences of virtual influencer engagement. While virtual influencers can enhance hedonic and eudaimonic well-being (Theme 4), they also pose significant risks, including threats to self-esteem through upward social comparison, perpetuation of harmful stereotypes, and privacy violations (Shin & Lee, 2023; Liyanaarachchi et al., 2024; Nasr et al., 2025).

Our synthesis identifies three core paradoxes that represent inherent tensions consumers navigate across the reviewed studies:

1-The Authenticity Paradox: Virtual influencers can be perceived as authentic precisely because they are transparently artificial (Lou et al., 2023; Koles et al., 2024). This challenges traditional notions of authenticity as grounded in human experience and suggests that consumers evaluate authenticity along multiple dimensions—including consistency, transparency, and value alignment—rather than solely on the basis of human origin.

2-The Uncanny Valley Paradox: As virtual influencers become more human-like, they may trigger psychological unease and eeriness, particularly when highly realistic appearance is paired with mechanical or unnatural behavior (Kim et al., 2024; Lou et al., 2023). This paradox suggests that designers must carefully calibrate the level of anthropomorphic realism to avoid triggering discomfort while still achieving social presence.

3-The Privacy Paradox: Consumers may willingly share personal data and engage deeply with virtual influencers while simultaneously expressing concerns about data vulnerability, cybercrime, and manipulation (Liyanaarachchi et al., 2024; Robinson, 2020). This paradox highlights the tension between the benefits of personalized engagement and the risks of data exploitation.

These paradoxes, identified across multiple studies, are not presented as simple barriers to be overcome but as dynamic tensions that warrant careful consideration by both marketers and consumers. For instance, transparency regarding the virtual nature of influencers emerged as an important factor in countering deception perceptions, aligning with ethical calls for disclosure (Robinson, 2020; Su, 2025). Similarly, inclusive and diverse virtual personas can mitigate the reproduction of stereotypes and unrealistic beauty standards (Shin & Lee, 2023; Barbosa & Oliveira, 2025).

Our synthesis reveals important inconsistencies across studies that warrant explicit attention:

Regarding purchase intention: While some studies demonstrate that virtual influencers can drive purchase intention (Fu et al., 2026; Vo et al., 2025), others find limited influence on purchase decisions, attributing this to low perceived authenticity and weak parasocial bonds (Lou et al., 2023; Sands et al., 2022). This divergence appears to be partially explained by product type: virtual influencers are more effective for hedonic and aesthetic products (Xia et al., 2025) than for utilitarian or credence products. Regarding anthropomorphic realism: While some research suggests that human-like virtual influencers are more trustworthy than cartoon-like ones (Franke et al., 2023), other studies indicate that anthropomorphic realism can trigger uncanny valley discomfort that undermines trust (Kim et al., 2024; Lou et al., 2023). This contradiction may be resolved by considering consumer familiarity and cultural background as potential moderators: consumers with higher technology familiarity may be less susceptible to uncanny valley effects.

Regarding well-being outcomes: While some studies emphasize the positive well-being effects of virtual influencer engagement (Jain et al., 2024), others highlight risks such as shame and appearance anxiety (Nasr et al., 2025). This duality suggests that well-being outcomes may be contingent on individual factors such as self-esteem and social comparison orientation, rather than being inherent properties of virtual influencer engagement itself.

Acknowledging these divergences not only strengthens the credibility of our synthesis but also identifies critical boundary conditions for future research and practical application.

Research Propositions

The propositions developed from the synthesis are interpretive and theory-building statements that summarize recurring cross-study patterns. They are intended to guide future empirical investigation rather than represent statistically tested causal relationships.

P1. Consumer perceptions and virtual influencer characteristics jointly shape the emergence of relational and emotional engagement.

The synthesis indicates that consumer engagement does not arise from virtual influencer characteristics alone. Rather, characteristics such as anthropomorphic appearance and behavior, interactivity, storytelling, and other design features acquire relational significance through consumers' perceptions, motivations, and interpretations, including credibility, authenticity, attractiveness, and perceived similarity (Lou et al., 2023; Koles et al., 2024; Mrad et al., 2025).

P2. Relational and emotional mechanisms provide the central pathway through which consumer engagement with virtual influencers develops and contributes to marketing-related outcomes.

Across the reviewed studies, parasocial relationships, identification, shared reality, empathy, and emotional attachment repeatedly appear as mechanisms connecting consumers' initial perceptions and interactions with subsequent engagement and marketing responses. The synthesis therefore suggests that marketing-related outcomes are more closely associated with the development of relational and emotional engagement than with the technological characteristics of virtual influencers in isolation (Choudhry et al., 2022; Koles et al., 2024; Liu et al., 2025; Vo et al., 2025).

P3. Engagement with virtual influencers can be associated with both positive and negative consumer well-being outcomes.

The reviewed evidence indicates that virtual influencer engagement may generate positive experiences such as excitement, inspiration, self-acceptance, and eudaimonic well-being, while also giving rise to negative experiences such as envy, shame, inadequacy, and appearance-related anxiety. Thus, consumer well-being should be understood as a distinct psychosocial consequence whose manifestation varies across the nature of the interaction and the consumer's experience (Jain et al., 2024; Nasr et al., 2025).

P4. Ethical and contextual tensions shape how consumers interpret and respond to virtual influencers and may contribute to variation in relational, psychosocial, and marketing outcomes.

The synthesis identifies authenticity, uncanny valley, privacy, transparency, and socio-cultural concerns as recurring tensions in consumer–virtual influencer relationships. At the same time, differences in consumer characteristics, product context, and forms of virtual influencer representation suggest that the consequences of engagement are context-dependent rather than universal (Koles et al., 2024; Liyanaarachchi et al., 2024; Kim et al., 2024; Su, 2025).

Conclusion

This qualitative meta-synthesis provides an integrated understanding of consumer–virtual influencer relationships by synthesizing substantive qualitative evidence from 26 eligible studies and organizing 81 basic codes into six overarching themes. Importantly, the synthesis focused on the qualitative evidence contributed by each study rather than treating all methodological components as equivalent. In mixed-method and multi-method studies, only the relevant qualitative findings were incorporated into the synthesis, while conceptual, theoretical, typological, and quantitative components were used only where appropriate for contextual interpretation.

The synthesis indicates that consumer–virtual influencer relationships cannot be adequately explained through a single technological characteristic or psychological mechanism. Instead, relational experiences emerge through the interaction between virtual influencer characteristics, consumer

perceptions and motivations, and the affective and cognitive processes through which consumers interpret and engage with virtual entities. These processes are associated with differentiated consequences for marketing outcomes and consumer well-being, while perceptual, ethical, and socio-cultural tensions may condition how consumers experience and evaluate the relationship.

The findings further suggest that authenticity, uncanny valley, and privacy are better understood as cross-cutting paradoxical tensions than as uniformly negative outcomes. The same technological or relational feature may therefore create both value and vulnerability: human-like representation may facilitate social connection while generating discomfort; personalization may increase relevance while intensifying privacy concerns; and artificiality may challenge conventional authenticity while enabling alternative forms of perceived authenticity. Accordingly, the proposed conceptual model should not be interpreted as a simple linear causal sequence. Rather, it represents a dynamic relational architecture in which technological characteristics acquire meaning through consumer interpretation, relational and emotional processes become interconnected, and commercial and psychosocial consequences may coexist. Ethical and socio-cultural tensions operate across these dimensions rather than forming a single downstream outcome category.

Overall, the study contributes an interpretive framework for understanding consumer–virtual influencer relationships as multidimensional, context-dependent, and tension-laden phenomena. Rather than positioning virtual influencers as inherently more or less effective than human influencers, the synthesis highlights the conditions under which their technological characteristics become socially meaningful, relationally consequential, commercially relevant, or psychosocially problematic. This framework provides a basis for future empirical research examining the development, boundary conditions, and consequences of consumer–virtual influencer relationships.

Theoretical Contributions

This meta-synthesis makes several theoretical contributions to the virtual influencer literature. First, by systematically synthesizing findings from 26 studies, this research offers a conceptual model that connects antecedents, psychological mechanisms, and outcomes of consumer–virtual influencer relationships. While prior studies have examined these elements in isolation (Audrezet et al., 2025; Franke et al., 2023), the proposed model, through the distinction of six themes and analytical sub-themes, provides a holistic framework that addresses the fragmentation identified by Gambetti and Kozinets (2024) and Mrad et al. (2025). In contrast to existing typologies that focus primarily on classification (e.g., Mouritzen et al., 2024; Gambetti & Kozinets, 2024), the present model emphasizes dynamic processes and illustrates how relationships form, are maintained, and produce consequences.

Second, the synthesis integrates four complementary theoretical perspectives into a relational interpretation of virtual influencer engagement. Anthropomorphism helps explain how consumers attribute human-like qualities to virtual entities; Source Credibility Theory illuminates credibility and trust judgments; Parasocial Relationship Theory explains the development of perceived relational bonds; and Symbolic Interactionism provides a broader interpretive lens for understanding how consumers construct and negotiate meaning around virtual entities. The contribution therefore lies not in claiming that these theories constitute a single unified theory, but in showing how their explanatory insights can be connected within an overarching account of consumer–virtual influencer relationships (Koles et al., 2024; Lou et al., 2023; Jhavar et al., 2023). This integration offers a more nuanced understanding of how virtual influencers function as both technological artifacts and social actors.

Third, the synthesis highlights the recurring presence of parasocial involvement, identification, and shared reality alongside affective and cognitive processes in consumers' experiences of virtual influencer relationships (Lou et al., 2023; Mrad et al., 2025; Koles et al., 2024; Liu et al., 2025). Rather than positioning these mechanisms as sequential stages, the synthesis suggests that they may overlap

and become interconnected as consumers interpret and engage with virtual influencers (Koles et al., 2024; Breves & van Berlo, 2025). This interpretation extends a predominantly parasocial account toward a broader relational configuration in which emotional, cognitive, and meaning-making processes jointly characterize consumer–virtual influencer relationships.

Fourth, by integrating behavioral marketing outcomes (Theme 5) with psychosocial and ethical consequences (Theme 6), this research responds to calls for more socially and ethically grounded research in this domain (Barari, 2023; Liyanaarachchi et al., 2024; Robinson, 2020). Our analysis indicates that engagement with virtual influencers simultaneously entails opportunities and risks that warrant attention from marketers, consumers, and policymakers. This balanced perspective offers a framework that can guide both marketing practice and regulatory policy.

Fifth, the identification of three core paradoxes authenticity, uncanny valley, and privacy—reported across multiple studies (Lou et al., 2023; Koles et al., 2024; Liyanaarachchi et al., 2024; Robinson, 2020), offers novel conceptual insights for understanding the inherent tensions in virtual influencer marketing. These paradoxes are identified not as simple barriers but as dynamic tensions that can be managed through transparency, careful design, and appropriate communication strategies. This insight challenges traditional notions of authenticity as grounded in human experience and opens new avenues for theorizing about digital authenticity and human–AI interaction.

Sixth, our analysis reveals that consumers are not passive recipients of virtual influencer content but active agents who employ coping strategies—emotion regulation, cognitive reappraisal, behavioral disengagement—to manage the psychological effects of engagement (Nasr et al., 2025). This finding contributes to the growing literature on consumer resilience and digital well-being, suggesting that interventions to enhance emotion regulation skills could mitigate the negative effects of social comparison.

Implications for Marketing Practitioners

The integrated model and synthesized findings carry several actionable implications for brand managers, virtual influencer creators, and marketing strategists. However, these recommendations should be interpreted with consideration of the contextual and contingent nature of the findings from individual studies.

Strategic Design and Selection: When designing or selecting virtual influencers, brands should consider anthropomorphic congruence—the alignment between appearance and behavioral human-likeness—as evidence suggests that congruence enhances persuasive impact, while incongruence may trigger uncanny valley discomfort (Kim et al., 2024; Lou et al., 2023). However, this recommendation requires careful qualification: while some studies indicate that intentional imperfections (e.g., freckles, non-ideal body proportions) enhance perceived authenticity (Lou et al., 2023), other research suggests that imperfections may not uniformly increase relatability across all consumer segments or cultural contexts (Arsenyan & Mirowska, 2021; Franke & Franke et al, 2023). Therefore, brands should conduct audience testing to determine optimal design features for their specific target demographic.

Transparency and Trust: Transparency concerning the virtual nature of the influencer should be considered an important component of responsible communication (Robinson, 2020; Su, 2025). The reviewed evidence suggests that disclosure does not necessarily undermine credibility and may, under some conditions, support perceptions of authenticity by reducing ambiguity about the nature of the virtual persona (Koles et al., 2024; Su, 2025). Its effects, however, are likely to depend on the narrative, design, and interactional context in which the virtual influencer is presented (Koles et al., 2024; Su, 2025).

Relationship Building: Relationship-oriented strategies may be more appropriate than purely transactional messaging when brands seek sustained consumer engagement with virtual influencers.

The synthesis suggests that interactive engagement, narrative depth, perceived familiarity, and shared experiences can contribute to consumers' sense of connection and relational involvement.(Vo et al., 2025; Liu et al., 2025). Rather than assuming that emotional bonds automatically produce loyalty, marketers should view relationship building as a process whose commercial value depends on the quality of consumer interpretation and the broader interaction context.

Psychosocial Responsibility: Marketers must be cognizant of the psychosocial risks associated with virtual influencer marketing. Campaigns that emphasize unattainable ideals or facilitate upward social comparison may inadvertently harm consumer well-being (Nasr et al., 2025). Brands should consider inclusive, diverse, and relatable virtual personas and monitor audience sentiment to mitigate negative emotional responses.

Product-Endorser Fit: The reviewed evidence suggests that virtual influencers may be particularly compatible with hedonic, aesthetic, and experiential consumption contexts. However, this pattern should not be interpreted as a universal superiority of virtual influencers for these product categories. Product characteristics, consumer expectations, perceived authenticity, and the informational demands of the decision context may jointly determine whether a virtual influencer is an appropriate endorser. For utilitarian or credence products, marketers may therefore consider whether the virtual influencer format can provide sufficient credibility and diagnostic information for the specific decision context.

Research Gaps and Future Directions

While this meta-synthesis provides a comprehensive framework, several gaps remain that point to future research opportunities.

Longitudinal and Process-Oriented Studies: The qualitative evidence base provides important insights into consumers' experiences of virtual influencer relationships, but relatively limited evidence directly captures how these relationships develop, change, and dissolve over extended periods(Breves & van Berlo, 2025). Future research could therefore employ longitudinal interviews, diary studies, experience sampling, or digital trace methods to examine the temporal development of parasocial bonds, emotional attachment, disengagement, and changing perceptions of authenticity

Cross-Cultural and Comparative Research: Our synthesis reveals that consumer responses vary across cultural contexts, yet the included studies are predominantly Western or East Asian (Levkov et al., 2024). Cross-cultural studies examining how individualism-collectivism, power distance, and uncertainty avoidance moderate consumer responses could enrich the generalizability of our model. Additionally, comparative studies across different types of virtual influencers (e.g., hyper-realistic vs. stylized) could further refine our understanding of design effects.

Technological Advancements: As virtual influencers become increasingly autonomous through generative AI and large language models, new psychological mechanisms and ethical challenges will emerge. Future research should investigate how perceived autonomy affects trust and relationship formation, and whether autonomous virtual influencers are perceived as more or less authentic than human-controlled ones. Additionally, the role of real-time interactivity and adaptive personalization in relationship maintenance warrants investigation.

Consumer Well-being and Psychosocial Outcomes: Future research should examine the conditions under which virtual influencer engagement is associated with positive or negative well-being experiences. Experimental and longitudinal designs could help distinguish short-term emotional responses from more sustained psychosocial consequences and identify potential protective conditions, including digital literacy, self-esteem, social support, and patterns of social comparison.

Ethical Frameworks and Regulatory Guidelines: The ethical challenges of virtual influencer marketing are underdeveloped. Future research should engage with legal scholars, ethicists, and policymakers to formulate principles for responsible virtual influencer marketing, including transparency mandates, data privacy safeguards, and accountability standards (Robinson, 2020). Additionally, research examining

consumer perceptions of ethical violations and their behavioral consequences could inform both practice and policy.

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