

**Understanding Consumer Trust in Virtual Influencers: A
Systematic Literature Review**

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Abstract

With the advancement of technology, social media platforms and artificial intelligence (AI) have significantly transformed how individuals engage socially, shifting from reliance on traditional experts to interactions with social media influencers. In recent years, various virtual influencers have emerged as substitutes for social media influencers (SMIs), engaging with audiences in the digital world. These virtual agents possess strong capabilities to mimic human appearance and behavior, offering new opportunities for marketers and brands to enhance consumer engagement and build brand loyalty.

However, scholars and marketers have not sufficiently explored the underlying mechanisms of virtual influencers, which has led to their misuse in marketing strategies and, consequently, weakened consumer trust. Researchers have yet to develop a comprehensive framework that explains how virtual influencers foster consumer trust and ultimately influence consumer behavior, which remains a key research gap in the field.

This research explores the factors that influence consumer trust in virtual influencers on social media in a marketing context, and how this trust leads to changes in consumer behavior. This study employs systematic literature review methodology to examine 97 carefully selected journal articles within the field of marketing.

By synthesizing findings from relevant, peer-reviewed journal articles, this study develops a comprehensive understanding of how virtual influencers build consumer trust and influence behavioral change. The analysis identifies several key themes related to virtual influencers and consumer trust: types of virtual influencers, types of trust, factors that contribute to building trust between virtual influencers and consumers, and behavioral changes resulting from that trust.

Following the themes of virtual influencers and consumer trust identified from the data analysis, this study proposes a dual-pathways theoretical model integrating VI–trust themes with Influencers’ trust-building strategy (e.g., content strategy, attractiveness, identity cohesion, engagement strategy) and consumer behaviour change (e.g., purchase intention, engagement, and word-of-mouth). The framework provides a foundation for understanding how different trust-building factors interact with current VI characteristics, and how trust in VIs ultimately drives changes in consumer behaviour.

This research makes a theoretical contribution by offering a comprehensive view of the relationships between virtual influencers, consumer trust, and relevant behaviour. It establishes clear definitions of VI categories and trust types, while integrating insights from diverse academic domains. The practical implications include equipping marketers with a multidimensional understanding of how to effectively adopt AI-driven influencers in marketing campaigns and influence consumers’ purchasing intentions.

Future research directions include empirically validating the proposed framework, investigating the dynamics of human-virtual influencer interactions, and refining the conceptual model linking virtual influencer types, trust dimensions, and consumer behaviour change. Limitations of this study include the potential exclusion of relevant literature and the need for further empirical research focusing on how virtual influencers build trust and influence consumer behaviour.

Chapter 1: Introduction of Virtual influencer marketing

In the rapidly evolving landscape of digital marketing, virtual influencers (VIs) have emerged as a distinctive and increasingly influential phenomenon. This chapter provides a comprehensive introduction to the concept of VIs, examining their defining characteristics and the unique role they play within online marketing. It explores how VIs are conceptualized and understood from both technological and sociocultural perspectives, highlighting their dual nature as digital constructs and social actors. Furthermore, this chapter discusses how consumers perceive VIs and how businesses strategically utilize them for marketing purposes. Particular attention is given to trust-related challenges, which remain obstacles to the widespread adoption and effectiveness of VIs in marketing. By identifying existing gaps in the literature, this chapter builds the foundation for the research questions and objectives in this study. The remainder of this dissertation is structured as follows: Chapter 2 reviews the relevant literature on VIs and trust; Chapter 3 outlines the SLR methodology; Chapter 4 presents the findings; Chapter 5 discusses theoretical and practical implications and offers future directions; and Chapter 6 presents the conclusion.

1.1: Background information of social media and virtual influencers' marketing

In recent years, online advertising has become an essential channel for brands to attract attention and generate profits, driven by the development of social media platforms (Alboqami, 2023). Influencer marketing has rapidly evolved over the past decade, gradually replacing traditional campaigns as the use of social media expands (Vrontis et al., 2021). The rise of online personalities has reshaped advertising, positioning influencers as key players in modern marketing strategies.

Marketers now regard social media influencers (SMIs) as the “new brand” due to their significant influence on consumers' attitudes and behaviour (Goel & Garg, 2025). Compared with traditional experts who gained fame through mass media, influencers can also have a powerful impact due to the large number of followers on their social media accounts. They effectively endorse brands and products through the content they post, the image they portray, and the personalities or expertise they display on social media platforms. According to reports from Skyquest in 2024, the influencer market is projected to grow by 33.4% starting in 2023 and is expected to reach a value of US\$139 billion by 2031 across the world (Goel & Garg, 2025).

As influencer marketing continues to grow, technology is playing a key role in reshaping its forms and strategies. With the development of artificial intelligence (AI) technology in recent years, social media influencers have evolved into new forms and appearances, with VIs emerging as the latest innovation. These AI-generated personas provide marketers a relatively more controllable tool for brand communication.

In response to these changes, many major companies have started incorporating VIs into their marketing campaigns as a new way to engage with online users. Leading companies and brands have begun to adopt VIs as official spokespersons, including Prada, McDonald's, Pepsi, and Coca-Cola (Zhou et al., 2024). Luxury brands are also embracing this trend. Louis Vuitton Moët Hennessy launched "Livi" as its exclusive virtual ambassador to foster the brand image in audiences (Kim et al., 2024), while Mini Cooper collaborated with the well-known virtual music influencer Lil Miquela to highlight product features (Yang et al., 2024). For instance, as an example of the wide-ranging impact of VIs, an avatar named "Liu Yexi" generated around 40 million likes across nearly 40 short video platform posts (ChinaNews, 2023) for the skincare brand Clarins (Feng, 2022), demonstrating the significant engagement and marketing potential that VIs can achieve in promoting products and influencing consumer behavior.

1.2: Define Virtual Influencers

Despite growing attention, there is no universally accepted definition of VIs. Some researchers describe VIs as digitally created artificial humans who gain online popularity and simulate human behavior through algorithms (Thomas & Fowler, 2021). Others group both computer-generated imagery (CGI) influencers and AI-powered influencers under the term "virtual influencers," distinguishing them based on their visual construction or AI-driven functionalities (Jayasingh et al., 2025). Furthermore, VIs are defined as digital avatars possessing high levels of form realism (human-like appearance) and behavioral realism (interactive capabilities), which distinguish them from simpler digital agents designed for specific tasks (Qu & Baek, 2024). Some scholars take a broader view, describing VIs as artificial media characters created by individuals or agencies, with appearances ranging from anime-like to human-like designs (Zhou & Jiang, 2024). Consequently, these varying perspectives highlight the absence of a single, unified definition for VIs (see Table 1).

VIs are generally understood as digitally created, computer-generated personas designed to perform human-like activities and interact with audiences through social media platforms. Some studies describe VIs as virtual characters developed using software and algorithms that simulate human behaviors (Ahn, Cho, & Tsai, 2022). Other researchers define VIs as human-created virtual personalities with anthropomorphic appearances that enable engagement and interaction with viewers (Miao et al., 2022). Additionally, VIs are digitally constructed characters with distinct personalities presented from a first-person perspective, capable of influencing audiences across multiple online channels. (Belanche et al., 2024). This study defines VI as any digitally or computer-generated agent with human-like attributes and features, who interact with online audiences across a multitude of channels - as human-like anthropomorphic influencer on social media platforms (visually and behaviorally similar to humans) or as respondent (talking or writing online by responding to questions as if human), or auditory agent (responding via auditory channels, online and via radio, TV), mimicking voice, tone, pace and delivery of human agents.

In contrast, SMIs are individuals on social media platforms who actively create and share personal content such as stories, product reviews, and service recommendations, thereby becoming prominent content creators within online communities as a result of the rise of social media platforms (Freberg et al., 2011; Khamis et al., 2017; Lim et al., 2017). Compared with VIs, SMIs are relatively less controllable than VIs, as their offline behaviours are not managed by brands. Thus, if an SMI creates questionable content or behavior, it will cause negative effects toward the endorsed brands (Tan & Liew, 2020). Meanwhile, when SMIs share sponsored advertisements, audiences often have skepticism about their content, which can lead to lower authenticity and negative attitudes toward the brand (Boerman et al., 2017). Furthermore, unlike VIs, SMIs are limited by time and availability, making it difficult for them to maintain consistent dyadic communication with followers. This limitation can reduce the perceived social presence and similarity that users feel, potentially leading to lower levels of consumer engagement on social media (Jhawar, Kumar, & Varshney, 2023).

Table 1

The Literature's Viewpoint About VI Definition

Source	Literature-based definitions of virtual influencers
Thomas & Fowler (2021)	Virtual influencer can be defined as “a digitally created artificial human who is associated with Internet fame and uses software and algorithms to perform tasks like humans.” It is worth noting that VIs can take on a character that mimics the appearance of a human (e.g., Lil Miguel), a human-like anime character (e.g., Noonouri), or a character that does not represent the appearance of a human (e.g., Guggimon).
Jayasingh, S., Sivakumar, A., & Vanathaiyan, A. A. (2025)	The term “virtual influencers” was widely used by researchers, and these can be classified as computer-generated imagery (CGI) and VIs. create content and interact with consumers using artificial intelligence technologies.
Qu, Y., & Baek, E. (2024)	“VIs are a kind of digital human avatar with a high degree of form realism (i.e. they resemble a human) and behavioral realism (i.e. they are interactive and controlled by humans or software). They are different from an agent-type of digital human avatar, who are user-oriented and task-based, simply responding to the requests of consumers.”
Zhou, Y., & Jiang, (2024)	Virtual influencers are digital, computer-generated characters designed to look and act like real people online. They have been created using advanced computer graphics and artificial intelligence software to simulate human traits and behaviors

1.3: Responses to Virtual Influencers from Consumers and Businesses

Consumers show acceptance and generally positive response towards VIs in various industries and brands. For instance, many big multinational companies are adopting VIs as the newest marketing tool to attract consumers, such as Nike, KFC, Samsung, Dior and Prada (Goel & Garg, 2025). Due to their features and capabilities, VIs are increasingly being adopted as substitutes for SMIs in brand endorsements and social media advertising by businesses (Franke et al., 2023)

Meanwhile, audiences' growing interests and novelty towards VIs creates more opportunities of using VIs as the marketing tool. VIs have gained significant popularity in the United States, with some attracting millions of followers across various social media platforms, with Lil Miquela being a notable example (Lou, Kiew, Chen, Lee, Ong, & Phua, 2023). This phenomenon has emerged because VIs can behave similarly to real humans and have the ability to mimic their human counterparts by generating diverse content on social platforms, thereby building close relationships and engagement with audiences, just like SMIs.

However, researchers have observed that while VIs can effectively engage consumers, their artificial nature sometimes leads to skepticism and negative reactions. Some scholars report that VIs may face controversies or negative brand associations due to their non-human identity (Levkov, 2024; Muniz, 2024). Although VIs can mimic human behaviors and interact with consumers, revealing their artificial nature may still negatively affect audiences' attitudes and expectations toward these interactions (Goel & Garg, 2025; Zeng et al., 2024).

Several studies further explored the effectiveness and challenges of VIs marketing compared to SMIs. Research shows that while VIs offer advantages such as maintaining a consistent image and fostering stronger customer attachment to brands, VIs face challenges in maintaining follower interest (Wan, Lee, & Ng, 2024). When VIs are perceived as less authentic, their content is often viewed as overly commercial, resulting in lower purchase intentions (Moustakas et al., 2020).

Another research stream investigated differences in brand endorsement effectiveness between virtual and SMIs, focusing on brand attitude and ad recognition. The results demonstrate that compared to SMIs, VIs have a significantly stronger effect on consumers' recognition or identification of advertisements (Sands et al., 2022). Consumers are more likely to perceive VIs' content as promotional advertising, whereas content from SMIs is less often seen this way (Kim & Zihang, 2025). However, VIs tend to be less effective in positively shaping consumers' attitudes toward brands, as their perceived sensory capacity negatively impacts attitudes toward the endorsed products (Deng et al., 2024; Hidayat, 2024).

Further studies examined consumers' responses to VIs' social media posts, purchase intentions, and perceived trustworthiness. These studies mainly focused on influencers' personal characteristics, such as attractiveness,

authenticity, and credibility (Arsenyan & Mirowska, 2021; Dondapati & Dehury, 2024; Sands et al., 2022; Nukhu et al., 2024; Tung & Lan, 2024; Yu et al., 2025). The results indicated that although VIs are perceived as less trustworthy than SMIs, audiences still show a high level of acceptance of them, especially when VIs have strong anthropomorphic features or similarities. In contrast, SMIs typically benefit from greater inherent trust due to their real-life presence and direct interactions with followers. However, SMIs may face limitations in availability and consistency of engagement, which can affect the depth of consumer trust differently compared to VIs.

In addition to consumers' responses, businesses also show distinct reactions toward VIs. Many brands increasingly adopt VIs as substitutes for SMIs in brand endorsements and social media advertising due to their unique advantages. For example, VIs help avoid ethical issues and risks linked to SMIs, thereby maintaining a consistent brand image (Deng et al., 2024). The risks recorded in prior literature range from misbehaving (e.g., Tiger Woods lost his sponsorship amid scandal; Townsend, 2009), contract break (e.g., Nike terminated its agreement with sport star Lance Armstrong following doping allegations; BBC Sport, 2012), misfit or incongruence between corporate and SMI brands, over-posting and unhealthy advice by SMIs, as well as the negative impacts of repetitive brand messaging, which reduces engagement and authenticity and ultimately slows network growth (Benevento, 2025; Wilson, Obilo, & Mills, 2024; Ekinci, Dam, & Buckle, 2025). Additionally, para-social breakdown, digital aggression, and concerns related to data privacy also contribute to risks associated with influencer marketing (Mukred et al., 2024; Liyanaarachchi, Mifsud, & Viglia, 2024). This leads to high costs in brand reputation damage, management, and coaching time and expenses. The main purpose of employing VIs in social media marketing is to provide an alternative to SMIs, giving marketers greater flexibility to create fully controlled brand endorsers tailored to their specific needs (Tan & Liew, 2020). Additionally, VIs are often seen or experienced more cost-effective than traditional influencers, who typically require higher budgets and more management effort (Tan & Liew, 2020).

1.4 Trust Issues Regarding Virtual Influencers

The difficulty AI-driven VIs face in closing the credibility gap between SMIs and VIs has been emphasized in recent literature (Joel-Edgar et al., 2025; Liu & Lee, 2024; Ozdemir et al., 2023). Scholars highlight that VIs pose unique trust challenges both for brand marketers, who worry about brand image and authenticity, and for consumers, who may question the credibility and genuineness of VIs. Similarly, SMIs also face trust-related issues affecting both brands and audiences. Consumers often express distrust towards VIs due to limited transparency, especially concerning who controls these digital personas behind the scenes (Robinson, 2020). Previous studies show that AI-powered VIs are less effective than their human counterparts in fostering positive brand perceptions and encouraging purchase intentions. Further, brand trust suffers greater damage when false advertising is conducted through AI-driven VIs compared to SMIs. Scholars increasingly highlight that VIs present trust challenges for both brands and consumers, similar to those posed by SMIs. Moreover, VIs are often perceived as

less warm, trustworthy, and valuable, and they are less likely to engage in active dialogue than SMIs. Many studies suggest that the main reason VIs struggle to impact consumers positively lies in their limited ability to build trust (Wan & Jiang, 2023).

To gain a deeper understanding of the complex nature of trust in VIs, researchers have further explored its multidimensional structure and classification. Trust encompasses multiple dimensions, including trust in the influencer, brand trust, and source trust. Brand trust, for example, refers to consumers' willingness to rely on a brand's ability to deliver its promised function (Chaudhuri & Holbrook, 2001). Trust also involves the expectation that a company will prioritize customer interests based on shared values and goals (Joel-Edgar et al., 2025). Some researchers further divide trust into cognitive trust, which refers to consumers' rational evaluations, and emotional trust, which refers to consumers' feelings and emotional reactions towards brands or influencers (Gong et al., 2020). Specifically, perceived influencer trust describes the degree to which consumers view the non-human agent (i.e., the VIs) as reliable and credible and feel secure and psychologically comfortable relying on it (Wan & Jiang, 2023).

Comparisons between real human idols and virtual online celebrities reveal that SMIs tend to elicit stronger trust, with perceptions of human-like qualities significantly influencing trust levels (Li, Liu, & Lee, 2024). Higher trust in spokespersons correlates with more positive consumer responses, such as favorable advertising and brand attitudes, as well as increased purchase intentions, underscoring trust's crucial role in shaping consumer behavior. To better understand this dynamic, it is important to unpack how trust is defined and constructed specifically in the context of SMIs.

Trust in SMIs refers to followers' confidence in the influencer's reliability and integrity (Ki et al., 2023). It develops when influencers consistently fulfill promises and provide behavioral cues that signal future benefits (Nazara et al., 2025). Trust is built through ongoing interactions and helps maintain the follower-influencer relationship (Sirdeshmukh et al., 2002). It includes key components such as competence (perceived knowledge and skill), integrity (honesty and ethical behavior), and benevolence (genuine concern for followers) (McAllister, 1995). Trust in SMIs assures followers that the relationship will bring positive outcomes, encouraging loyalty and continued engagement (Kim & Kim, 2021).

Among the many factors influencing trust towards VIs, anthropomorphic features are considered particularly critical, significantly affecting consumer attitudes and behaviors. Anthropomorphism plays a key role in how individuals perceive and respond to VIs. Anthropomorphic traits significantly impact trust, social attraction, cognitive and emotional attitudes, and purchase intentions (Laszkiewicz & Kalinska-Kula, 2023; Goel & Garg, 2025; Kim et al., 2022). Human-like VIs, compared to animated or non-human-shaped VIs, generally receive greater acceptance in most consumer contexts.

However, anthropomorphism also brings challenges, that the “uncanny valley” effect substantially impacts consumer acceptance. This effect refers to the discomfort or skepticism people experience when VIs appear almost human but display subtle unnatural features (Nukhu et al., 2024; Lou et al., 2023). According to the uncanny valley theory, as an AI agent’s appearance grows more human-like, people generally become more comfortable, eventually overcoming this discomfort (Arsenyan & Mirowska, 2021). Nonetheless, since VIs are not real humans, even minor deviations in behavior or appearance can trigger negative emotional responses, leading to distrust (Kim & Baek, 2024).

The complex reactions caused by the non-human identity of VIs further influence trust. Most researchers agree that once consumers become aware of a VI’s non-human nature, perceived authenticity and trustworthiness decrease. However, some studies note that VIs still offer consumers unique interaction opportunities despite lacking genuine personal experiences (Zeng et al., 2024). Consumers tend to value VIs’ cognitive capabilities, such as providing detailed product information, over emotional engagement when making purchase decisions.

Although much current research focuses on anthropomorphism in appearance, the psychological and emotional dimensions have not been sufficiently explored. Study results indicate that anthropomorphism related to moral virtue and cognitive experience positively influences credibility and parasocial relationships, while appearance-based anthropomorphism primarily affects parasocial relationships (Sands et al., 2022). Emotional consciousness appears to have no significant effect. Both credibility and parasocial relationships positively impact purchase intention, with parasocial relationships exerting a stronger influence (Yu et al., 2025). Furthermore, influencer–product congruence positively influences the credibility–purchase intention link (Dabiran et al., 2024). These findings highlight a research gap in understanding how different anthropomorphic aspects influence consumer trust and behavior, emphasizing the need to address psychological and emotional factors to enhance VI marketing effectiveness.

1.5: Research Gaps

While prior studies on virtual influencers (VIs) have explored individual factors influencing consumer trust—such as anthropomorphic design, authenticity, and influencer–brand congruence—current research remains fragmented. Existing literature lacks an integrated framework that combines these factors to explain both the formation of trust and the emergence of distrust in VIs. Most scholarly attention has centred on building trust, with limited investigation into the antecedents and mechanisms of distrust, despite its potential to undermine brand equity. Furthermore, the behavioural consequences of trust and distrust, such as purchase intention, engagement, avoidance, and negative word-of-mouth, are underexplored in the VI context, with most insights drawn indirectly from social media influencer (SMI) studies. Finally, theoretical integration remains limited: no existing work has synthesised relevant perspectives, such as Trust Transfer Theory, Anthropomorphism Theory, and Attitudinal Ambivalence Theory, into a comprehensive model that captures both trust and distrust pathways. Addressing these

gaps is critical for advancing theoretical understanding of AI-driven influencer marketing and for guiding practitioners in effectively managing consumer perceptions of VIs.

1.6: Research Questions

Drawing from the gaps identified in the literature, this study aims to investigate the antecedents, mechanisms, and behavioural consequences of both trust and distrust in virtual influencers (VIs). While prior research has examined selected factors influencing trust in VIs, such as anthropomorphism, authenticity, and influencer-brand congruence, there is limited understanding of how these factors interact, how distrust develops, and how each pathway shapes consumer behaviour.

Accordingly, this study is guided by the following main research questions: How do virtual influencers shape consumer trust, and through what mechanisms do these processes influence consumer behaviour?

This overarching question is addressed through four sub-questions:

RQ1: What factors foster customer trust in virtual influencers?

RQ2: What factors lead to customer distrust in virtual influencers?

RQ3: How do trust and distrust in virtual influencers influence consumer behaviours

RQ4: How can insights from a systematic literature review be synthesised into a conceptual model explaining trust and distrust in virtual influencers?

By addressing these questions, the study seeks to make both a theoretical and practical contribution. Theoretically, it develops an integrated dual-pathway conceptual model that unites antecedents, mechanisms, and outcomes of trust and distrust in VIs, synthesising insights from multiple relevant theories. Practically, it offers marketers evidence-based guidance for deploying VIs in ways that foster trust, mitigate distrust, and enhance positive consumer engagement.

This study adopts the virtual influencer account as the unit of analysis, focusing on the influencer's persona, self-presentation strategies, and trust-building mechanisms rather than brand-influencer campaigns. The analysis is bounded by three conditions: (1) social media platforms where VIs are natively active (e.g., Instagram, Xiaohongshu, TikTok); (2) English and Chinese language contexts; and (3) regions with mature digital marketing ecosystems such as East Asia and Western markets. These boundaries are important because platform algorithms, linguistic nuances, and regional cultural values can shape how transparency, authenticity, and anthropomorphism are perceived, thereby influencing trust formation processes.

Chapter 2: Literature review

This chapter begins by examining how virtual influencers (VIs) are defined in the current academic literature, including their classification into distinct categories and their advantages relative to human counterparts. Establishing this foundation clarifies how VIs are understood and positioned within the present study, thereby setting the stage for identifying the research gap. The chapter then explores how consumer trust in VIs has been conceptualised, focusing on definitions, antecedents, and consequences, as well as the contrasting role of distrust as an independent construct. By reviewing both trust and distrust, the discussion captures the dual nature of consumer responses to VIs, highlighting their potential to either enhance or undermine brand–consumer relationships.

This synthesis provides the theoretical basis for positioning trust as a central factor in the current research, while also identifying the key drivers, barriers, and behavioural outcomes associated with VIs. Insights from this literature review inform the development of the research and lay the groundwork for addressing the identified research gap.

2.1 Virtual influencers (VIs)

In this section, the study reviews how VIs are defined in current academic literature and how scholars classify different types of VIs. Furthermore, it examines the unique capabilities of VIs and their business value compared to SMIs, providing a comprehensive understanding of VI based on their functions and abilities.

2.1.1 Virtual influencer definition

VIs have increasingly attracted academic and commercial attention in recent years. However, scholars have yet to reach a consistent definition for VIs. For example, some studies defined VIs based on physical appearance, while other scholars defined VIs according to their level of autonomy and the technologies used to support them (Thomas & Fowler, 2021; Jayasingh, Sivakumar, & Vanathaiyan, 2025).

In recent years, the definition of VIs has evolved alongside advancements in AI technologies. For instance, some studies define VIs as digital personas created and managed by artificial intelligence (Dabiran et al., 2024; Kumar & Shankar, 2024; Volles et al., 2024). These VIs are part of a broader trend in synthetic advertising, where technology is used to mimic human behavior in marketing contexts. Research highlights that they leverage advances in AI and digital graphics to create visually appealing and distinctive virtual agents designed to capture consumer attention. These digital personas are often carefully crafted to embody traits such as attractiveness, approachability, and social relevance (Sands et al., 2022). This shift reflects the growing role of advanced AI systems in shaping how VIs are conceptualized.

Building on this evolving definition, researchers have identified several concepts commonly used to describe VIs in the literature. Although scholars have yet to provide a complete definition of VIs, terms such as anthropomorphism, digital avatar, AI technology, and social interactivity frequently appear in studies. For example, some research defines VIs as computer-generated artificial entities that perform like humans on the internet (Thomas & Fowler, 2021). VIs are virtual characters that mimic real people to attract consumers and build trust, though they may instead elicit distrust. Other researchers emphasize that, compared to chatbots, VIs exhibit a higher degree of realism and social presence, though they are generally perceived as less trustworthy than real humans (Qu, Lo, & Baek, 2025). Meanwhile, some studies define VIs as AI-powered entities created using CGI technology and emphasize that their human-like interaction capabilities are designed to foster emotional engagement and build consumer trust. Nevertheless, scholars stress that VIs range widely in form, from celebrity-like virtual idols, including Imma, Livi and Shudu, to more relatable personas created by anonymous media agencies, taking various appearances, such as Noonooori and Lil Miquela.

In this research, VIs are defined by integrating insights from existing literature. VIs are AI-powered, computer-generated digital characters with anthropomorphic appearances and personas that closely mimic human appearance and behavior, exhibiting a high degree of realism and social presence (Jayasingh et al., 2025; Thomas & Fowler, 2021; Qu, Lo, & Baek, 2025). They simulate human-like emotions and social interactions, enabling them to serve as brand ambassadors or spokespersons who authentically and persuasively engage consumers across diverse social media platforms and industries. VIs leverage advances in artificial intelligence, computer graphics, and data analytics to create dynamic and personalized content, effectively communicating brand messages and fostering consumer trust.

2.1.2: Virtual influencer type classification

Much of the existing literature classifies VIs based on key characteristics such as their digital nature and role in social media marketing, with particular emphasis on the degree of anthropomorphism, which refers to how human-like these influencers appear (Laszkiewicz & Kalinska-Kula, 2023; Volles et al., 2024). However, classification criteria vary significantly across studies, including differences in anthropomorphic appearance, interaction style, and AI-driven capabilities, resulting in inconsistencies in VI typologies (Gerrath et al., 2024; Smith & Lee, 2023; Zhou, Yan, & Jiang, 2024).

Moreover, prior research has predominantly focused on human-like VIs, which has led to a lack of empirical data regarding how non-human or animated VIs engage with consumers (Deng, Tuo, Chen, & Zhang, 2024). According to the CASA framework, consumers often perceive anthropomorphized entities as human counterparts, forming emotional connections with them. These human-like attributes have been shown to trigger favorable responses from consumers (Yang, Chuentrawong, Lee, & Chock, 2023). This theoretical lens has driven researchers to

categorize VIs based on their degree of anthropomorphism, which generally falls into three types: hyper-realistic, moderately anthropomorphic, and animated VIs (Hidayat, Marzaman, & Christin, 2024).

Hyper-realistic VIs can closely mimic human features because they are created using advanced technologies and supported by AI, enabling them to perform much like real people (Muniz, Stewart, & Magalhães, 2024). Their striking realism and polished visual design make them especially appealing for brand endorsements, particularly in industries like fashion and beauty (Wan & Jiang, 2023). Their perceived realism and highly anthropomorphic physical appearance enhance the perceived trustworthiness and aspirational qualities of VIs (Koles, Audrezet, Moulard, Ameen, & McKenna, 2024). Nevertheless, their almost human-like appearance can also provoke skepticism due to the Uncanny Valley effect, highlighting that the perceived authenticity of a VI is a key factor in shaping consumer trust and engagement.

Moderately anthropomorphic VIs combine realism and stylization in their design, featuring human-like body language and expressions while maintaining distinctive, creative characteristics. They are designed to strike a balance between familiarity and novelty, attracting audiences who seek something more imaginative than SMIs. This hybrid approach allows them to resonate with market segments that traditional influencers may not effectively reach (Zhou, Yan, & Jiang, 2024).

The last type is low-anthropomorphic or animated VIs, which have a cartoon-styled appearance and features that set them apart from humans (Hidayat, Marzaman, & Christin, 2024). These characters often appeal to younger audiences or those who enjoy entertainment-driven, less serious online interactions. Their visual separation from humans reduces expectations of realism but may also limit their effectiveness in domains where credibility or aspirational appeal is important.

In addition to anthropomorphism-based classifications, some researchers propose categorizing VIs based on autonomy. Autonomous VIs are described as those who have control over their own content, messages, and overall branding, making them appear more independent and capable of building stronger connections with audiences (Sands et al., 2022). Conversely, externally managed VIs have their messaging and brand identity shaped by external parties, such as marketing teams or creative agencies. Although most VIs are still partially controlled by external parties, advances in AI technology are expected to create fully autonomous virtual agents in the near future, potentially changing how audiences view their authenticity and independence.

2.1.3: Virtual Influencer Capabilities and Business Value Compared to Humans

VIs offer clear marketing advantages, such as fast, scalable content creation, real-time trend responsiveness, personalized messaging, and full brand control, all at lower long-term costs than SMIs. These factors help boost initial consumer engagement and brand visibility. However, VIs also face challenges including a lack of authentic

emotional connection, greater psychological distance from consumers, declining message effectiveness over time, risks of misinformation, and limited social interaction capabilities. These limitations can reduce trust and sustained engagement, posing important considerations for marketers using Vis (see Table 2).

Table 2

VI's Advantages and Disadvantages

Advantages	Details & Sources
Fast & Scalable Content Creation	VIs can generate content quickly and work 24/7 without fatigue. (Campbell et al., 2020; Sands et al., 2022)
Real-Time Trend Adaptation	Able to respond instantly to trends on social media. (Sands et al., 2022)
Personalization & Data Use	VIs tailor content using user data, enhancing engagement. (Ferrara et al., 2016; Sands, 2020)
Brand Control & Consistency	Brands maintain full control over VIs' behavior and messaging. (Thomas & Fowler, 2020)
Cost Effectiveness & Low Efficiency	Lower long-term costs than SMIs and no risk of personal scandals. (Campbell et al., 2020)
Enhanced Message Reception	Visually engaging VIs initially boost message acceptance. (Hidayat et al., 2024).
Disadvantages	Details & Sources
Lack of Authenticity & Emotional Connection	VIs often fail to build emotional bonds with consumers despite human-like looks. (Hidayat et al., 2024)
Greater Social-Psychological Distance	VIs are perceived as distant and impersonal, harming trust and e-WOM. (Sands et al., 2022)
Weak Message Reception Over Time	While effective at first, consumer receptiveness declines with over-exposure. (Hidayat et al., 2024)
Misinformation Risk & Data Compatibility	Concerns about fake content, misinformation, and unclear data sourcing. (Zhang & Wei, 2021)
Limited Social Interaction	Without true interactivity or empathy, VIs struggle to engage in meaningful conversations under some conditions (Halpern & Katz, 2013).

2.1.3.1 Advantages of VIs

2.1.3.1.1 Interaction and Humanization

Based on previous research about how VIs build closer relationships with audiences, the findings show that when VIs have more perceived human-like traits, people are more likely to accept them as part of the social environment (Halpern & Katz, 2013). Meanwhile, the social distance between digital agents and people also decreases. Thus, when a virtual persona has a high level of anthropomorphic qualities, it is more likely to engage in meaningful social interactions with audiences (Sands et al., 2022).

These anthropomorphic traits not only reduce social distance but also empower VIs to deliver more impactful and personalized communication. VIs contribute to shaping new message reception models by improving message delivery through both visual aesthetics and supportive narratives (Choi & Choi, 2024). They fulfill diverse roles, such as recommending products, producing visually appealing content, and shaping social interactions and public preferences through their virtual presence. This enables corporate public relations to develop engaging narratives and build personalized connections with audiences (Hidayat, Marzaman, & Christin, 2024).

2.1.3.1.2 Effectiveness and Flexibility

According to previous research, brands can effectively use AI-driven VIs to quickly identify and capture emerging social media trends (Sands et al., 2022). VIs powered by artificial intelligence have the ability to automatically generate posts, images, and various types of content targeted at social media users without the limitations of human schedules or creative blocks. As a result, the content creation process of VIs can be faster and more flexible than that of real humans (Campbell et al., 2020). This increased efficiency helps brands reduce risks associated with SMIs and at lower costs. Furthermore, VIs can customize their posts by processing data from audience comments, enabling them to personalize content to better align with targeted customers' preferences and maximize consumer engagement on social media (Ferrara et al., 2016; Sands et al., 2022).

As the distinction between human and virtual agents' behavior becomes increasingly blurred, VIs are increasingly capable of gaining significant influence over consumers (Moustakas, Lamba, Mahmoud, & Ranganathan, 2020). Scholars perceive that VIs have the potential to become endorsers of products and brands, behaving similarly to SMIs and generating effects akin to traditional influencers. Unlike SMIs, VIs generate content that is strictly controlled to match the brand's identity and messaging. This high level of control helps brands avoid issues such as unpredictable behavior or off-brand messaging, common risks with SMIs, making VIs especially valuable for branding and reputation management (Thomas & Fowler, 2020).

Additionally, VIs contribute to shaping new message reception models by enhancing communication strategies through visual aesthetics and supportive narratives. They fulfill diverse roles including recommending products, producing appealing content, and influencing social interactions and public preferences (Zhou, Yan, & Jiang, 2024; Arsenyan & Mirowska, 2021; Sands et al., 2022). This enables corporate public relations to build engaging and personalized connections with audiences (Hidayat, Marzaman, & Christin, 2024).

2.1.3.2: Disadvantages of VIs

Scholars have identified several limitations in using VIs for marketing. A major concern is their perceived inauthenticity and the absence of a human touch, which hinder the formation of emotional bonds with consumers (Feng, 2023; Hwang et al., 2022; Xie-Carson & Benckendorff, 2024; Lou et al., 2023; Wan & Ng, 2024). Research points out that although VIs can initially boost audiences' message acceptance, the lack of genuine emotional connections makes it difficult to build strong engagement over time. To build a solid brand image, studies emphasize the importance of fostering empathy and emotional connections throughout the communication process (Goel & Garg, 2025). In the context of VIs, lacking this emotional bond with consumers limits their ability to sustain engagement, even if they possess highly human-like appearances (Hidayat et al., 2024; Keller, 2016).

Research shows that, beyond emotional limitations, VIs also face psychological disadvantages that negatively affect consumer responses. VIs are generally perceived as having greater social-psychological distance compared to their human counterparts. This increased social distance reduces consumers' intention to follow VIs, diminishes electronic word-of-mouth (e-WOM), and lowers source trust (Sands et al., 2022). Moreover, scholars observe that while VIs may boost message acceptance in the short term, prolonged or frequent exposure to VIs can lead to decreased message receptiveness, suggesting a diminishing return effect on consumer engagement over time (Hidayat et al., 2024). Another critical concern involves the accuracy of VIs' data integration, as misinformation spread by VIs can significantly impact consumer decision-making processes. This issue poses a serious risk to both consumer trust and brand reputation (Zhang & Wei, 2021).

2.2: General Conceptualizations of Trust

2.2.1: Common definitions of trust

Researchers across different fields agree that trust generally involves a positive expectation that someone will behave in a reliable, honest, and supportive way, especially in situations involving uncertainty, risk, or limited control (Lee & See, 2004; Mayer et al., 1995). Trust also includes the belief that the other party has good intentions and will not take advantage of one's vulnerability (Choung et al., 2023; Gefen et al., 2003). It can be seen as a mindset to take actions that involve exposing oneself to potential risk or uncertainty (Lee & See, 2004). Personal experiences, societal norms, and organizational culture all influence how trust is perceived and developed, emphasizing the importance of contextual factors. Mayer et al. (1995) defined the concept of trust as "the extent to which one is willing to ascribe good intentions to and have confidence in the words and actions of others." This definition emphasizes the interpersonal nature of trust, focusing on the confidence in others' good intentions. Meanwhile, studies view trust as a belief that the other party will act reliably, ethically, and in accordance with social expectations (Gefen et al., 2003). In the digital era, this belief is crucial for building relationships in online

shopping contexts where direct physical interactions are absent. Research highlights trust as an essential factor influencing people's acceptance of AI technologies (Choung et al., 2023). Findings show that trust significantly impacts users' attitudes toward AI agents, shaping both the perceived usefulness and the intention to use AI technology.

Trust often requires a willingness to be vulnerable, meaning people trust even when they cannot fully predict or control what others will do (Rousseau et al., 1998; Bach et al., 2024). This is particularly important in interactions with technology or AI systems, where trust affects whether users accept and use those systems (Bach et al., 2024). When interacting with AI agents, trust depends not only on technical performance or design but also on ethical factors that promote clear communication, accountability, and user support. At the same time, users' confidence in and the competence of the technology provider are critical factors influencing trust (Musa, Fatmawati, Nuryakin, & Suyanto, 2024).

Different types of trust have been identified in previous studies. For example, calculative trust is based on weighing risks and benefits, while relational trust develops through shared values and experiences over time, and institutional trust relies on structures such as laws or company rules to ensure reliable behavior (Rousseau et al., 1998). In the digital world, which involves e-commerce and social media platforms, trust becomes even more important due to the lack of face-to-face interaction. Users tend to trust platforms or influencers when they see signs of authenticity, reliability, and security (Choi et al., 2024; Ki et al., 2023; Hsu et al., 2014).

In marketing, especially regarding influencer and brand trust, trust helps people feel confident in recommendations or product choices. It reduces uncertainty, encourages repeat purchases, and fosters long-term loyalty (Chaudhuri & Holbrook, 2001). However, trust cannot be built automatically; it is established and maintained over time through consistent, ethical behavior, transparency, and emotional connection (McKnight et al., 2002; Keller, 2016).

2.2.2: Trust types

Trust has long been regarded as a complex, multi-dimensional concept that can take different forms depending on the context. Scholars across disciplines have examined trust from psychological, organizational, and technological perspectives, identifying several key types of trust. Scholars argue that trust cannot be seen as a homogeneous construct and have identified three types of trust: calculative, relational, and institutional (Rousseau et al., 1998). Calculative trust is built based on a rational evaluation of risks and benefits. People decide to trust based on whether the rewards of trusting someone outweigh the potential negative outcomes. This type of trust is more rational and utilitarian, as trust is granted if the other party is seen as having more to lose from breaking that trust than from maintaining it. Research expands on calculative trust in the context of online commerce, revealing that the trust-building mechanism behind it is a rational cost-benefit analysis (Model, 2003). The calculative trust emphasizes a rational evaluation process, where customers evaluate whether the e-vendor has more to lose than to gain from

dishonest or opportunistic behavior, essentially weighing the pros and cons to ensure the vendor's incentives align with maintaining trust. As a result, studies suggest that calculative trust emerges when consumers assume that e-vendors will act honestly because deception could harm their reputation and future profits (McKnight et al., 2002).

Relational trust develops over time through ongoing interactions, a sense of shared identity, and mutual understanding (Rousseau et al., 1998). According to Mayer et al. (1995), this type of trust is rooted in emotional bonds and repeated interactions where maintaining the relationship becomes more important than short-term gains. In online environments, such trust enables deeper and more enduring collaboration. On the other hand, institutional trust arises not from individual relationships, but from confidence in systems, rules, and organizational structures (Rousseau et al., 1998; McKnight et al., 2002). This form of trust offers individuals a sense of stability and safety, minimizing the need to rely solely on personal relationships. It is especially important in digital commerce, where users need to feel confident in engaging with unknown online parties. Thus, the presence of laws and brand loyalties provides a foundation for trust when physical connection is absent.

Building upon these foundational categories, one widely cited framework divides trust into two types: cognition-based trust and affect-based trust (McAllister, 1995). Cognition-based trust develops through a person's evaluations of another's dependability, performance, and consistency over time. It relies on knowledge accumulated through direct experiences or observed behavior (McAllister, 1995). In the context of online commerce, studies suggest that consumers may come to trust a platform or influencer for consistent, reliable performance (Model, 2003). In contrast, affect-based trust is emotional, stemming from personal feelings of care, concern, and connection between people, often built through repeated and personal interactions (McAllister, 1995). Compared with cognition-based trust, affect-based trust shows a deeper emotional connection rather than a rational evaluation, which is important in interpersonal and social contexts. Although cognition and emotion are different, affect-based trust often builds upon an initial foundation of cognition-based trust (McAllister, 1995).

Further, studies have defined trust based on whether it is a belief or a behavior (Lee & See, 2004). Attitudinal trust refers to the internal willingness to rely on others, while behavioral trust involves taking practical steps that reflect this belief, such as sharing information or using a service in uncertain situations. Scholars suggest that behavioral trust exists only when people act based on their inner beliefs, often resulting in exposure to risk (Mayer et al., 1995).

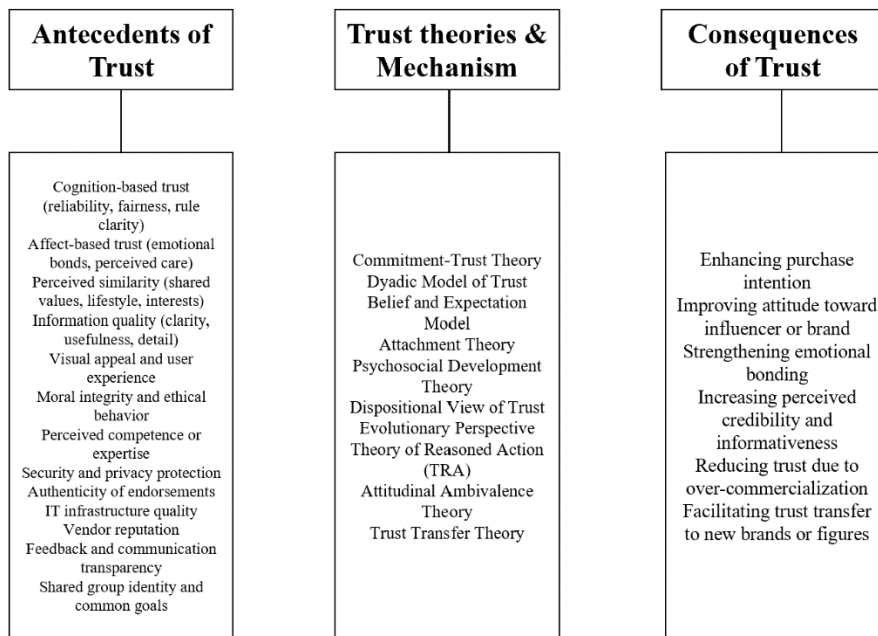
Finally, as AI technology becomes increasingly popular, scholars have classified trust in AI agents into various categories. Research distinguishes between human-like trust and functional trust (Choung et al., 2023). Human-like trust refers to users' perceptions of AI agents as intentional, ethical, and socially intelligent. In contrast, functionality-based trust focuses on the performance of AI agents, reliability, and task effectiveness. Both types are essential when users rely on AI in emotionally or socially sensitive environments.

In summary, trust is a multifaceted and dynamic concept that varies across contexts. It can be understood through different types, including calculative trust based on rational cost-benefit evaluations, relational trust grounded in emotional bonds and repeated interactions, and institutional trust rooted in confidence in systems and structures. Additionally, trust is often divided into cognition-based trust, which relies on assessments of reliability and performance, and affect-based trust, which involves emotional connections. Trust can also be viewed as either an internal attitude or an observable behavior. In the realm of AI and VIs, trust further splits into human-like trust focused on perceived social and ethical attributes and functional trust emphasizing reliability and task performance.

Building on these distinctions, the following framework integrates these trust dimensions to illustrate how consumer trust in VIs is formed and maintained, highlighting the cognitive, emotional, and functional pathways that influence consumer attitudes and behaviors. This model offers a comprehensive understanding of trust dynamics in VI marketing and provides a foundation for future research and practice (see Figure 1).

Figure 1

The Framework of Trust



The next section will introduce the antecedents of trust, theories of trust, and outcomes of trust as outlined in the trust framework. This discussion will provide a comprehensive understanding of the key factors that influence trust, the theoretical foundations behind it, and the resulting effects on consumer behavior.

2.2.3: Trust theories

Previous studies have utilized various theories to explain and develop the concept of trust in different contexts. Scholars introduced the Commitment-Trust Theory in the 1990s, arguing that strong business relationships rely on both trust and commitment (Morgan & Hunt, 1994). When firms perceive their partners as reliable and honest, they are more likely to cooperate and achieve shared success. Earlier ideas about trust began to form in the 1980s, with studies defining trust as a psychological state that grows between individuals through ongoing interactions in close relationships, as described by the Dyadic perspective (Simpson, 2007).

Building on this, the Dyadic Model of Trust described trust as a process developing from expecting consistent behavior to eventually perceiving shared values and mutual understanding (Holmes & Rempel, 1989). Similarly, research focusing on the Belief and Expectation Model emphasized that trust is built when people believe others will support their long-term goals, especially in important or uncertain situations (Kramer & Carnevale, 2001). Beyond relationship dynamics, studies exploring trust formation over a person's lifetime defined Attachment Theory as the belief that secure emotional bonds in early childhood help individuals develop the ability to trust others as adults (Simpson, 2007). The Theory of Psychosocial Development highlighted trust as an important early childhood stage formed through everyday interactions with parents (Erikson, 1963). Meanwhile, scholars also emphasized the Dispositional View, defining trust as a stable personal trait influenced by past experiences (Simpson, 2007). Finally, the Evolutionary Perspective suggested that humans have developed mental tools to assess trustworthiness, as recognizing trustworthy behavior was essential for survival (Tooby & Cosmides, 1996). These theories collectively indicate how the understanding of trust has expanded from interpersonal dynamics to include developmental, personality, and evolutionary foundations.

Building upon these foundational perspectives, recent studies have continued to develop trust theories to reflect how trust evolves across different contexts. For example, research extending the Theory of Reasoned Action (TRA) emphasized that consumers' attitudes and behaviors during online shopping are shaped by their trust in various parties, highlighting trust as a key factor in forming purchase intentions (Hsu, Chuang, & Hsu, 2014). Other scholars have applied Attitudinal Ambivalence Theory to explain that consumers can simultaneously trust and distrust an influencer, suggesting that trust can involve mixed or conflicting feelings (Ki, Chow, & Li, 2023). In addition, studies on Trust Transfer Theory have revealed that trust built in one familiar source can be transferred to a new, associated entity. This theoretical perspective suggests that when consumers develop trust and emotional bonds with social media influencers, they may also extend that trust to the brands those influencers endorse, which in turn promotes purchase behaviors (Choi, Choi, & Lee, 2024).

Traditional trust theories emphasize interpersonal dynamics and emotional bonds formed between real human agents. For instance, Trust Transfer Theory assumes that trust can be transferred from a trusted entity to another unit through prior relational experience or reputational association. However, this mechanism presupposes the

trust develops between real human agents, which does not fully apply to VIs. Compared with real human, VIs are non-human agents built on AI technologies without real intentions, meaning that consumers' trust in VIs is not transferred through interpersonal history but rather constructed cues such as perceived anthropomorphism, realism and interactivity. Although VIs can simulate human-like interactions, these judgments rely on perceived human-like features rather than real interpersonal experience. As a result, traditional trust theories cannot fully explain how consumers develop trust in VIs.

Similarly, Attitudinal Ambivalence Theory, which explains how conflicting positive and negative evaluations coexist in consumer attitudes, is limited when applied to VI contexts. In VIs contexts, consumers face a unique form of cognitive ambivalence, that they are aware of the agent's artificial nature yet still respond to it emotionally as if it were real human. Unlike negative evaluations of human agents, which arise from conflicting emotions, negative attitudes toward AI-driven VIs are primarily driven by expectancy violations and uncertainty about their authenticity. As a result, traditional theoretical frameworks cannot be directly applied to VIs.

Meanwhile, the dispositional view conceptualizes trust as a stable personal trait shaped by past interpersonal experiences. However, this perspective is limited in the context of VIs, because users have no prior interpersonal interactions with virtual agents. On the other hand, trust in VIs is primarily formed through cognitive and perceptual cues, such as the appearance, behavior, and communication style, which means the traditional dispositional view cannot be fully adopted in VIs research.

As human-focused trust theories fail to apply in the context of VIs, this study develops the dual-pathway trust model to address this theoretical gap and extend traditional perspectives in the VIs field. The dual-pathway trust model addresses these limitations by distinguishing the cognitive and affective routes through which trust and distrust toward VIs are formed, revealing that VIs evoke both human-like and machine-like evaluations simultaneously.

2.2.4: Antecedent of trust

2.2.4.1: Foundations of Trust: Ability, Integrity, and Benevolence

Trust has been extensively studied and is commonly understood as grounded in three core dimensions: ability, integrity, and benevolence. *Ability* reflects the perceived competence and reliability of the agent (Lee & See, 2004), while *integrity* refers to fairness and consistency in behavior, such as adherence to principles or rules. *Benevolence* implies that the agent cares about others' well-being beyond self-interest. These foundational elements shape expectations of trustworthy behavior and are especially relevant in settings where individuals lack full control over outcomes.

In uncertain environments, such as digital interactions or unfamiliar systems, people rely heavily on these dimensions to assess whether cooperation is safe. Repeated positive experiences strengthen expectations of future trustworthiness (Gambetta, 2000). However, trust is not based solely on rational evaluations; it is also shaped by subjective factors, such as cultural norms, religious beliefs, and moral values, that frame how individuals interpret actions (Basso et al., 2001; Christie, Jordan, & Troth, 2015; Mingo & Faggiano, 2020). These personal frameworks act as filters and often explain why trust judgments vary across contexts.

2.2.4.2: Contextual and Technical Antecedents in Digital Environments

In AI-driven or online platforms, the role of trust becomes more contextual and design-dependent. Trust is more likely when technologies are introduced through structured onboarding processes, accompanied by clear communication (Bach et al., 2024). Features such as a user-friendly interface, visual consistency, and transparency about data collection make AI systems appear more reliable and predictable. These system characteristics not only reduce cognitive burden but also encourage user reliance, especially during early interactions.

Importantly, trust evolves over time. Even when initial trust is weak, consistent and satisfying interactions can build a deeper sense of reliability. Engagement, therefore, acts as a reinforcing mechanism. As users spend more time with a system or platform, their familiarity and comfort can help override initial hesitation (Bach et al., 2024). These factors highlight the importance of both design and user experience in shaping digital trust.

2.2.4.3: Cognitive and Emotional Antecedents

Researchers commonly distinguish between cognition-based and affect-based trust (McAllister, 1995). The former involves rational judgments about competence, reliability, and fairness. For instance, consumers may trust a source that consistently delivers useful and accurate information. In contrast, affect-based trust develops from emotional closeness, such as perceived empathy or shared experiences. These emotional signals create relational depth and influence how trustworthy someone appears—even when objective information is limited.

In the realm of social media, both cognitive and emotional factors contribute to how followers evaluate influencers. For example, influencers who communicate clearly, offer relevant information, and maintain consistency are likely to be seen as competent and trustworthy. However, emotional resonance—through perceived similarity or shared values—can be equally, if not more, persuasive. This is especially true for younger audiences like Gen Z, who respond more strongly to interpersonal cues than to traditional branding efforts (Ki, Chow, & Li, 2023; Choi, Choi, & Lee, 2024).

2.2.4.4: Authenticity, Morality, and Security

Another set of antecedents revolves around authenticity and ethical behavior. Consumers are more likely to trust influencers or platforms that are perceived as honest and sincere. When marketing content appears overly commercial, trust tends to decline. However, when endorsements feel genuine, trust is not only maintained but also extended to the brands involved, which is a phenomenon known as the trust transfer effect (Choi, Choi, & Lee, 2024).

Morality and technical competence further shape trust in digital commerce. A sense of ethical responsibility, alongside robust infrastructure for privacy and data protection, contributes to perceived safety. Consumers want to know their information is secure, and systems that ensure transaction safety are more likely to be trusted.

2.2.4.5: Social and Relational Antecedents

Beyond individual perceptions, social dynamics also act as important antecedents. Group identity, community goals, and shared interests can significantly shape interpersonal trust (Hsu, Chuang, & Hsu, 2014). In digital communities, belonging to a like-minded group fosters cooperative behaviors and reduces perceived risk. Similarly, platforms that allow users to share feedback or interact with vendors transparently give users a sense of control, reinforcing trust over time (Hsu, Chuang, & Hsu, 2014). A trustworthy reputation, whether of a vendor, platform, or influencer, combined with a visible commitment to community goals, enhances users' willingness to engage.

2.2.5: Results of trust - consumer behaviour change

Researchers have drawn on various theories to explore the mechanisms behind consumer trust in digital and influencer-related environments. These theoretical frameworks collectively emphasize how trust influences consumer attitudes, intentions, and behavioral outcomes, offering insight into both rational and emotional dimensions of trust.

One of the most widely applied models is the Theory of Reasoned Action (TRA), which has been extended to trust-related research. Scholars argue that consumers' online shopping behaviors are shaped by their trust in different parties, such as sellers or platforms. When trust is present, it leads to more positive attitudes and stronger intentions to make a purchase (Hsu, Chuang, and Hsu, 2014). This highlights the direct influence of trust on consumer decision-making in online environments, especially in situations where uncertainty is high.

Building on this, Attribution Theory has been used to examine how consumers interpret influencers' motivations. Findings show that trust increases when followers believe influencers act voluntarily and with genuine concern. Conversely, if the influencer's behavior is perceived as driven by self-interest, trust is likely to decrease (Ki, Chow, & Li, 2023). These insights demonstrate how consumers' attributions of authenticity and intent shape their trust-related responses.

To deepen the understanding, the same study employed Attitudinal Ambivalence Theory to capture the emotional complexity of trust. According to this view, trust is not always straightforward, that consumers may simultaneously experience both trust and distrust toward an influencer. This ambivalence suggests that trust can be fragile and highly dependent on contextual factors, especially when followers feel uncertain about the influencer's true intentions (Ki, Chow, & Li, 2023). Thus, emotional contradictions can exist even in relationships that appear stable on the surface.

Another factor reinforcing trust is perceived similarity. Similarity-Based Trust Theory posits that consumers are more likely to trust someone who shares their values, interests, or lifestyle. When such alignment is present, it fosters a sense of closeness and emotional resonance that strengthens trust (Ki, Chow, & Li, 2023). This underscores how trust can emerge not only from logical evaluations but also from relational and identity-based connections.

Cognitive aspects of trust have also been emphasized in Communication and Informativeness Theory, which explains how the quality of influencer communication affects trust. Honest, clear, and informative content increases the influencer's perceived transparency and expertise, thereby encouraging followers to trust their recommendations (Ki, Chow, & Li, 2023). This supports the idea that trust is also built on perceived informativeness and credibility, not just emotional attachment.

However, trust is not unshakable. Advertising Clutter and Distrust Theory highlights how excessive promotional content can erode consumer trust. When influencers post too many advertisements, followers may feel overwhelmed and begin to question the influencer's sincerity. This saturation effect can foster skepticism and distrust, as consumers perceive the content to be overly commercialized and less authentic. While this saturation effect is well-documented in general consumer behavior and influencer marketing research, its specific applicability to VIs requires further investigation (Ki, Chow, and Li, 2023). Therefore, maintaining a balance between authenticity and monetization becomes crucial for preserving trust.

Building on the understanding of how trust is formed and maintained, researchers have identified various consumer behaviors that emerge as a result of trust in digital and influencer environments, supported by different theoretical frameworks. First, trust leads to stronger purchase intentions. Consumers will show more positive attitudes and a higher likelihood of completing a purchase when trust is established. In online shopping contexts, trust in sellers or platforms plays a key role in leading consumers behaviour. Scholars explained this outcome by extending the Theory of Reasoned Action (TRA), which argues that consumers' behaviors are shaped by their trust in different parties (Hsu, Chuang, & Hsu, 2014). Based on Trust transfer theory, scholars found that Consumers may be more likely to trust unfamiliar influencers or endorsed brands when they already trust the platform. This phenomenon explains how trust in an online platform can extend to influencers and the brands they promote, thereby increasing purchase consideration (Choi, Choi, & Lee, 2024).

Second, trust increases when influencers provide clear, honest, and informative content, making them seem more transparent and credible. The trust encourages consumers to engage with the influencer more actively. Communication and Informativeness Theory explains how the quality of communication strengthens trust and promotes favorable consumer responses (Ki, Chow, & Li, 2023). Meanwhile, trust enhances consumer engagement and emotional connection. When consumers perceive that an influencer shares similar values, interests, or lifestyles, they are more likely to form a stronger emotional bond and engage positively. This is grounded in Similarity Based Trust Theory, which suggests that perceived similarity in shared content builds trust (Sarstedt, Ringle, & Hair, 2017). Moreover, the perceived motivation of influencers affects trust-related behavior. When consumers believe influencers act voluntarily, trust is strengthened. On the other hand, when people believe the influencer is acting out of self-interest, trust diminishes. These differing responses are explained by Attribution Theory, which focuses on how people interpret influencers' actions and impacts on trust formation (Schouten, Janssen, & Verspaget, 2020).

Third, trust can lead to ambivalent or even negative consumer responses, depending on the influencer's behavior. Consumers may experience both trust and distrust toward the same influencer, especially when they are unsure about their true intentions. This emotional conflict is explained by Attitudinal Ambivalence Theory, which shows that trust is not always clear cut (Ki, Chow, & Li, 2023).

Finally, excessive promotion can damage trust and reduce engagement. When consumers are overwhelmed by constant advertising from VIs, they may become skeptical of the influencer's sincerity and less likely to trust their content. Scholars utilized Advertising Clutter and Distrust Theory to explain this reaction, which highlights how ad saturation can erode consumer trust (Singh, Crisafulli, Quamina, & Xue, 2020).

2.2.6: Overview of Trust Frameworks: Connecting to Research Gaps and Questions

2.2.6.1: Linkage with the Research Gap

The review of existing literature has revealed several notable research gaps. First, the literature demonstrates that trust is widely recognised as a critical driver of consumer behaviour, influencing purchase intentions, engagement, and brand loyalty, while distrust can lead to avoidance, scepticism, and negative word-of-mouth. Multiple theoretical perspectives—such as Trust Transfer Theory, Anthropomorphism Theory, the CASA framework, and Attitudinal Ambivalence Theory—offer valuable but fragmented insights into these dynamics. Second, existing studies tend to examine individual determinants of trust—such as anthropomorphic traits, authenticity, and influencer–brand congruence—in isolation. While these studies provide important evidence, there is a lack of an integrated framework that combines these factors to explain the full process by which trust in VIs is formed. Specifically, there is a lack of a comprehensive overview of which aspects of VI integration influence the formation of consumer trust, as well as the underlying mechanisms behind this process. For instance, some scholars reveal

that the content and posts shared by VIs influence consumer trust in the brands and products they endorse. However, the underlying mechanisms behind this are not fully explored. Some researchers perceive that content creation capabilities are the key factors in the trust formation process, while others argue that the physical appearance of VIs in posts can generate more engagement and foster trust. This indicates a need for a more comprehensive framework to explain how various features of VIs contribute to the development of consumer trust.

Third, there is a lack of overview on decreased trust or distrust and the underlying mechanisms. For example, most existing research highlights the influence of VIs' anthropomorphic level in trust building, but suggesting that VIs with a lower human-like appearance (such as animated VIs or non-human-shaped VIs) tend to generate distrust among consumers. Meanwhile, researchers have found that VIs face challenges in building parasocial relationships with audiences due to their non-human nature. These findings suggest the need for an understanding of the mechanisms behind distrust in VIs.

Finally, much of what is known about the consequences of trust and distrust in VIs is inferred from research on social media influencers (SMIs). While parallels exist, VIs differ from SMIs in their non-human nature, technological construction, and perceived authenticity, which may alter both the processes and outcomes of trust formation. Empirical evidence on VI-specific behavioural outcomes—positive (e.g., purchase intention, engagement, loyalty) and negative (e.g., avoidance, scepticism, negative e-WOM)—remains sparse and the theoretical integration is limited. Although various theories have been applied to aspects of VI research, there is no existing conceptual model that synthesises multiple perspectives to capture both trust and distrust pathways in a unified manner.

These limitations constrain the advancement of both theory and practice. From an academic perspective, the absence of an integrated trust–distrust model makes it difficult to compare results across studies, limits the development of robust theory in AI-driven influencer marketing, and leaves the dynamics of distrust under-theorised. From a practitioner perspective, without a holistic understanding of how trust and distrust operate in VI contexts, brands risk ineffective deployment strategies that could erode consumer trust and damage brand equity.

2.2.6.2: Linkage with Research Questions

To address those research gaps, this study focuses on exploring the relationship between VIs and consumer trust in the context of marketing. Specifically, the research aims to investigate the underlying mechanism that shape trust or distrust in VIs, and how this trust or distrust impacts consumer behavior. Through synthesizing insights from existing literature on VIs and trust, the study seeks to build a theoretical framework of how trust is constructed and impacts in VI marketing. To achieve the research goal, this study can fill the research gap of consumer trust

in VIs while providing solid theoretical foundation for future empirical studies and practical guidance for marketers utilizing VIs.

This study aims to address several key research questions concerning consumer trust and distrust in VIs. First, it investigates the factors that influence both trust and distrust in VIs, aiming to distinguish the antecedents that lead to positive and negative consumer perceptions. Second, it explores the underlying mechanisms through which trust and distrust are developed, maintained, or manifested in the context of VIs. Finally, the study examines how trust and distrust respectively impact consumer behaviors, including purchase decisions, engagement levels, and word-of-mouth communication. Finally, these research questions guide the systematic review of existing literature and the development of a new theoretical model to deepen understanding of trust dynamics in VI marketing.

Chapter 3: Methodology

Given the research aim and the identified gaps in literature, a systematic literature review (SLR) was selected as the most appropriate method. This chapter outlines the (SLR method employed to investigate how consumers perceive and trust VIs, as well as how this trust may affect their behavior. By using the SLR approach, the study aims to achieve a comprehensive and interdisciplinary understanding based on existing research. The chapter begins with an explanation of the SLR methodology and its advantages, then proceeds to describe the specific steps taken, including the selection of databases, keyword searches, inclusion and exclusion criteria, data extraction and screening, and the data analysis process. Together, these sections provide a clear and structured overview of the research approach applied in this study.

3.1 Systematic literature review (SLR) approach

Systematic literature review (SLR) is a structured approach that applies a clear research question, systematic search strategies, and selective screening to review existing studies (Jesson, Lacey, & Matheson, 2011). This methodology is well-suited for the present study because it offers several advantages: it enables a comprehensive synthesis of existing research to build conceptual frameworks, helps identify gaps in knowledge, guides future research directions, and effectively minimizes bias. Over the past decade, scholars from various disciplines have increasingly emphasized improving literature review quality by conducting systematic, transparent, and replicable syntheses of relevant articles (Tranfield et al., 2003). Unlike traditional narrative reviews, the SLR approach reduces bias by logically and rigorously reviewing a large body of literature, thus providing a detailed and objective summary of the research landscape. Furthermore, this method not only offers both readers and researchers a thorough understanding of the topic but also highlights research gaps and points toward future study directions. By employing an SLR, scholars are able to consolidate previous findings and contribute to the development of new theoretical frameworks (Marabelli & Newell, 2014).

Since the SLR approach enables the structured, transparent, and replicable synthesis of prior research across multiple disciplines, ensuring comprehensive coverage of relevant studies and minimizing bias in the review process. This is particularly important in the context of VIs, where the academic literature is emerging, multi-disciplinary, and fragmented across marketing, communication, human–computer interaction, and AI ethics domains.

3.1.1: Integrating Prior Research to Inform Conceptual Framework Development

The systematic literature review (SLR) is widely recognized as an effective approach to minimize bias by systematically reviewing and analyzing large bodies of research, while maintaining transparency in the reviewers' decisions, procedures, and conclusions (Tranfield et al., 2003). A comprehensive review of literature in this domain is considered essential for both academics and practitioners, as it provides a solid foundation of evidence to inform future policies and practices (Tranfield et al., 2003). Studies have further highlighted that the advancement of a subject relies on logically synthesized insights drawn from previous research (Kumar & Paul, 2019). By conducting literature reviews, scholars are able to critically evaluate the existing intellectual landscape while formulating research questions that extend and develop the current body of knowledge (Kumar & Paul, 2019).

Meanwhile, some scholars pointed out that all types of empirical research, including qualitative, quantitative, or mixed methods, should be supported by concepts and theories from the literature (Rocco & Plakhotnik, 2009). The literature reviews connect the study to its objectives and positions it within the context of existing research, thereby demonstrating how the current work builds upon or differs from previous studies.

Authors distinguish systematic literature reviews (SLR) from qualitative or quantitative research methods. Even qualitative empirical studies—such as those using grounded theory to develop new theories—must be linked to an existing body of literature, conceptual framework, or theoretical framework. As a result, systematic literature reviews (SLR) integrate various forms of evidence to investigate meanings, provide explanations, or generate new insights (Rocco & Plakhotnik, 2009).

Meanwhile, scholars can develop a comprehensive conceptual framework for their research by undertaking a systematic literature review (SLR). According to previous studies, the literature review, along with conceptual and theoretical frameworks, provides five key purposes: (a) establishing a foundational base, (b) showing how the study contributes to expanding knowledge, (c) shaping the study's conceptual approach, (d) evaluating the research design and tools used, and (e) offering a basis for interpreting the results (Merriam et al., 2000).

Establishing a foundation involves drawing on prior research to highlight connections, reveal patterns, and offer a broad understanding of a concept, theory, or body of literature. Showing how a study contributes to advancing knowledge entails using the literature to outline current understanding and identify clear gaps that the study aims to fill.

In the field of marketing, systematic literature reviews (SLRs) have been widely employed to investigate a wide range of topics. Previous research discusses the role of artificial intelligence in marketing through a systematic literature review (Chintalapati & Pandey, 2022). In the marketing field, scholars utilized the systematic literature review (SLR) method to develop a comprehensive framework that categorizes AI

applications in marketing into five key functional themes (Chintalapati & Pandey, 2022). This SLR framework offers a more complete and clear understanding compared to earlier studies, which often focused on isolated aspects of AI or lacked a broad, structured categorization of its marketing applications.

Furthermore, a key advantage of the SLR approach lies in its ability to integrate diverse strands of evidence into a coherent analytical framework (Tranfield et al., 2003). Research on VIs is dispersed across multiple disciplines, with studies varying widely in focus, theoretical lens, and methodological design. By employing a structured synthesis process, the SLR enables the identification of recurring themes, the reconciliation of contradictory findings, and the clarification of conceptual ambiguities (Boell & Cecez-Kecmanovic, 2015). This is particularly valuable for the present study, which seeks to address fragmented understanding by developing an integrated dual-pathway conceptual model that captures both trust and distrust mechanisms in VIs.

Through thematic synthesis (Thomas & Harden, 2008), the SLR collates empirical and conceptual findings to map relationships between antecedents, mechanisms, and behavioural outcomes, directly addressing RQ 1, RQ 2, and RQ 3. This synthesis capability also facilitates the integration of relevant theoretical perspectives into a unified explanatory model (RQ 4). By systematically linking disparate findings, the SLR ensures that the resulting framework is not only comprehensive and evidence-based but also analytically robust, enabling clearer theoretical contributions and actionable practical implications (Snyder, 2019).

Therefore, the systematic literature review (SLR) is an appropriate research method for this study, as it integrates insights into how previous studies have investigated factors influencing consumer trust in VIs. Furthermore, by synthesizing findings across various research domains, the SLR supports the development of a conceptual framework that offers a comprehensive understanding of how consumer trust in VIs is established and its potential impacts on consumer behavior.

3.1.2: SLR's ability to identify gaps and guide future research

As systematic literature reviews help scholars integrate and synthesize insights from current literature, they provide an up-to-date understanding of the research topic, identify research gaps and future research directions, and contribute to the development of new theoretical and conceptual frameworks (Paul & Criado, 2020). In this regard, systematic reviews also play a crucial role in identifying inconsistencies within research findings (Hulland & Houston, 2020). Such inconsistencies often arise because some insights are derived from theories, while others emerge from diverse research methodologies. By undertaking systematic literature reviews, researchers can generate new understandings and develop conceptual frameworks that help clarify these variations across studies.

Moreover, researchers have found that conducting a well-defined systematic review protocol supports scholars in navigating the review process, improves transparency in research methods, and provides a roadmap for future

replication. Therefore, systematic reviews serve as an objective baseline for evaluating future research contributions over time (Mallett et al., 2012). In this context, SLRs are widely adopted to identify research gaps and inform future research across various disciplines, including marketing.

In recent marketing research, SLR has proven especially useful in addressing emerging questions. For instance, scholars employed SLR to explore research gaps concerning the effectiveness of VIs in live-streaming commerce (LSC), extending prior work that predominantly focused on SMIs (Wan & Jiang, 2023). Since empirical data on VIs within the LSC context remains scarce, SLR enables researchers to systematically evaluate current findings and expose areas requiring further study. Similarly, Akhtar et al. (2024) demonstrated how SLR is effective in identifying gaps in research related to social influence theory and behavioral engagement. Their findings revealed that existing studies insufficiently explain how VIs influence consumers' attitudes and behaviors, thus opening up avenues for new theoretical development.

Furthermore, insights derived from SLR help researchers propose targeted directions for future research. For example, Laszkiewicz and Kalinska-Kula (2023) conducted a systematic review that illuminated how VIs shape consumer perceptions and behavior. They recommended that future research should compare the effectiveness of VIs and SMIs in brand endorsements, contributing to theory-building around technology acceptance. In addition, they highlighted a need for further exploration into the determinants of VI effectiveness, including consumer engagement, ethical concerns, and the uncanny valley effect. Drawing from their findings, they proposed a research agenda to better understand how consumers accept AI technology through the lens of VIs.

In conclusion, through a comprehensive analysis and integration of diverse studies, SLR enables researchers to build a solid knowledge foundation while exposing theoretical, methodological, and contextual gaps. These insights guide future research directions, ensuring scholars contribute meaningfully to their fields and effectively address critical knowledge gaps.

3.1.3: Effectiveness of SLR in minimizing bias

Researchers differentiate systematic literature reviews (SLRs) from traditional literature reviews by emphasizing their methodological rigor and objectivity. Traditional reviews often rely on well-known or classical studies within a field and tend to repeatedly cite the same foundational research, which can inadvertently introduce bias and limit the scope of understanding (Mallett et al., 2012). This selective approach may hinder a comprehensive view of the research landscape.

To address these limitations, systematic reviews adopt a more structured and transparent methodology that minimizes researcher bias. SLRs are defined as comprehensive and unbiased syntheses of existing evidence. Unlike narrative reviews, which often rely on expert judgment, SLRs are designed to collect and interpret

conflicting findings across multiple studies. This integrative approach enables researchers to reconcile inconsistencies in the literature and generate more balanced conclusions (Patole, 2021).

The strength of SLRs lies not only in their ability to handle large volumes of studies but also in their potential to evaluate the external applicability of findings. Especially in areas where primary research is scarce or results are mixed, systematic reviews provide a robust framework for synthesizing evidence. By doing so, they help determine whether existing findings can be generalized to other contexts and offer insights into gaps in current knowledge, which in turn inform future research directions.

Moreover, SLRs are widely recognized as a form of secondary research that goes beyond summarizing existing literature. They follow a rigorous, predefined process involving inclusion and exclusion criteria, comprehensive database searches, and structured data extraction. This process avoids reliance on authority-based selection and instead promotes transparency and replicability. As noted by Naseri and Malekzadeh (2006), such a methodology improves the credibility of research synthesis and reduces subjective interpretation, thereby enhancing the reliability of academic inquiry.

In conclusion, SLRs contribute significantly to academic research by reducing bias, ensuring methodological transparency, and generating theoretical insights through systematic comparison across studies. Their structured approach not only strengthens the trustworthiness of literature reviews for this study, but also offers a clear and evidence-based roadmap for guiding future research, especially in emerging or fragmented fields.

3.2: Data Sources

This study utilizes Scopus and Google Scholar as the primary databases for data collection. Scopus is recognized as one of the largest and most comprehensive databases, offering broad coverage across various academic disciplines (Pranckutė, 2021). As of the October 2019 update, Scopus includes approximately 23,452 active journal titles, 120,000 conference proceedings, and 206,000 books from over 5,000 international publishers (Singh et al., 2021). It offers broader interdisciplinary reach and up-to-date coverage, making it particularly suitable for capturing the diverse theoretical and empirical perspectives necessary for studying VIs impact on consumer's trust. Furthermore, it is particularly strong in certain subject areas such as marketing, communication, psychology, and technology that is relevant to the study of VIs. In addition, Scopus supports direct affiliation searches and provides detailed author profiles, including institutional affiliations, h-index values, and publication records. With its rigorous quality control and extensive historical coverage, Scopus is often considered a reliable database for conducting long-term research (Thelwall & Sud, 2022).

In addition to Scopus, Google Scholar is employed to supplement the data collection process. Unlike traditional databases that focus mainly on peer-reviewed journals, Google Scholar offers access to a wider range of academic

sources, including grey literature, unpublished reports, government documents, and ongoing studies. Its inclusive approach aims to reduce publication bias and ensure more comprehensive coverage. Recent studies estimate that Google Scholar contains over 300 million records (Delgado López-Cózar et al., 2019), significantly surpassing the publication and citation counts of Scopus and Web of Science (WoS). Research has shown that Google Scholar includes the majority of citations found in other databases while also capturing a broader set of references, making it particularly valuable for comprehensive academic exploration (Harzing, 2019). For example, it has been reported to collect 88% of all citations for a sample of highly cited documents, outperforming Microsoft Academic, WoS, and other smaller databases (Martín-Martín et al., 2021).

By combining the complementary strengths of Scopus and Google Scholar, this study ensures a comprehensive, inclusive, and relatively unbiased foundation for literature collection. This dual-database approach is particularly valuable for conducting a systematic literature review that adheres to principles of transparency and methodological rigor.

3.3: Searching keywords

The study selected a group of search terms related to consumer trust and VIs. Terms like "Virtual influencers" AND "trust," "AI-powered influencers" AND "trust," "Avatar influencers" AND "trust," and "Computer-generated influencers" AND "trust" will be used to find articles that examine how effective VIs are in building consumer trust. Additionally, search strings will be created by combining terms about consumer trust in VIs with related keywords, such as: ("Virtual influencers" OR "AI-powered influencers" OR "Artificial intelligence influencers" OR "Avatar influencers" OR "Computer-generated influencers") AND ("trust") (see Table 3).

Table 3

String Search Terms and Term Variations

String Searching	Terms
virtual influencer*	virtual influencer virtual influencers
AI-powered influencer*	AI-powered influencer AI-powered influencers
artificial intelligence influencer*	artificial intelligence influencer artificial intelligence influencers

avatar influencer*	avatar influencer avatar influencers
computer-generated influencer*	computer-generated influencer computer-generated influencers
trust	trust trusting trusted trustworthiness trustworthy brand trust product trust influencer trust source trust information trust cognitive trust affective trust interpersonal trust online trust
consumer trust	consumer trust consumer trusting consumer trusted
perceived trust	perceived trust perceiving trust perception of trust

3.4 Inclusion and exclusion criteria

The search criteria were limited to peer-reviewed academic journal articles and reviews written in the English language. The study excluded articles documented as conference papers, book chapters and reports. The year published of articles is during the period 2020-2025, corresponding with rapid advancements made in AI technology and VIs over recent years.

The market size of the global influencer marketing platform is expected to reach 84.89 billion USD by 2028 (Research and Markets, 2021). VIs, defined as computer-generated virtual agents with human-like appearances,

are providing new growth opportunities for the influencer market. For example, VIs are widely used in the fashion industry as endorsers due to their high flexibility in content creation. Many VIs have emerged globally. For instance, Lil Miquela has become one of the top AI-powered influencers on Instagram (Molenaar, 2021).

Previous research on influencer marketing has primarily concentrated on the impact of VIs with human-like appearances. Scholars suggest that VIs can enhance consumers' purchase intentions through their perceived expertise and trustworthiness (Feng & Chen, 2024). Research also finds that the effective use of VIs leads to a closer social distance with followers, which in turn fosters brand loyalty (Kholkina & Zelenskaya, 2025). Additionally, studies emphasize that when consumers have confidence in VIs, it reduces the perceived risks and uncertainties associated with a brand (Liu & Yu, 2024). These studies demonstrate that the VI market is growing alongside the development of AI technology, highlighting the increasing importance of VIs in shaping consumer behaviors.

The collected literature come from fields of marketing, consumer behavior, consumer trust, influencer marketing, and online marketing. Because Scopus and Google Scholar have different searching logics, the chosen subject areas include:

3.4.1: Scopus

Table 4 shows the inclusion criteria for all subjects on Scopus.

Table 4

Criteria for Selecting Subjects in Articles from The Scopus Database

Criterion type	Criteria
Database	Scopus
Publication type	Research article, literature review
Subject	<ul style="list-style-type: none"> – Business, Management and Accounting, – Psychology, – Economics, Econometrics and Finance,
Cover period	2020 – 2025 (February)

3.4.2: Google Scholar

Table 5 shows the inclusion criteria for all subjects on Scopus.

Table 5*Selection Criteria for Subjects in Articles from the Google Scholar Database*

Criterion type	Criteria
Database	Google Scholar
Publication type	Research article, literature review
Subject	Journal of Marketing Journal of Advertising Journal of Business Research Journal of Consumer Research Journal of Retailing and Consumer Services Psychology & Marketing Tourism Management Journal of Travel Research European Journal of Marketing International Journal of Advertising
Cover period	2020 – 2025 (February)

3.5: Data extraction

The first stage of the data extraction process involved searching each keyword in the database and applying criteria based on publication year and selected subject areas. In the second step, the study excluded non-English articles, conference proceedings, book chapters, and reports that did not meet the criteria. Records from Scopus and Google Scholar for each keyword search were saved separately. In the third step, the study combined all records taken from the Scopus and Google Scholar databases, including important information like author names, article titles, publication years, source titles, and abstracts. In total, the study collected 2,739 published articles from both databases that met the criteria. In the fourth step, the study refined the combined database by deleting duplicate records and articles published outside the 2020 to 2025 timeframe. This process removed 1,138 duplicate articles and 166 articles that were not academic research literature (such as conference papers or book chapters), while 24 papers were excluded for being non-English.

The search collects a total of 1,411 published articles. According to Table 7, the combination "Virtual influencers " AND "trust" had the highest number with 613 records, showing significant interest in how virtual avatars affect consumer trust. This was followed by "Avatar influencers" AND "trust" with 215 records. The terms "AI-powered influencers " AND "trust" and "Computer-generated influencers " AND "trust" generated 158 and 141 records, respectively. Lastly, a more complex search including all these terms returned 284 records (see Table 6).

Table 6

The Results of Keyword Searches from the Scopus and Google Scholar Databases after Duplicate Articles were Removed

Keyword search	Google Scholar	Scopus	Total
"Virtual influencers" AND "trust"	611	2	613
"AI-powered influencers" AND "trust"	121	37	158
"Avatar influencers" AND "trust"	206	9	215
"Computer-generated influencers" AND "trust"	101	40	141
("Virtual influencers" OR "AI-powered influencers" OR "Artificial intelligence influencers" OR "Avatar influencers" OR "Computer-generated influencers") AND ("trust")	239	45	284
Total	1278	133	1411

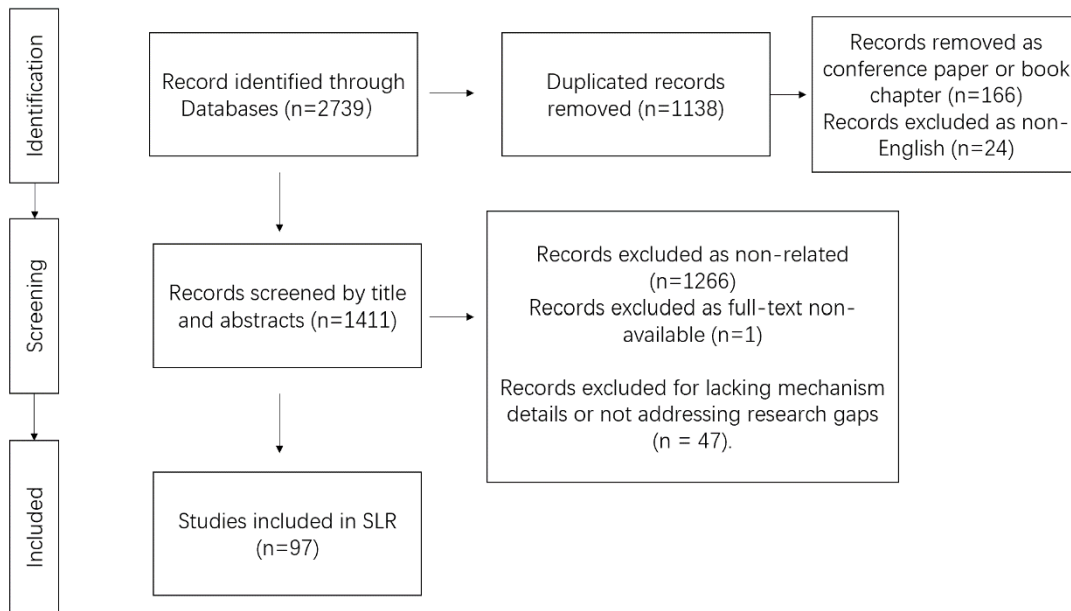
3.6: Screening

In the screening stage, this study adopts the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement 2020 to report data (Page et al., 2021). Originally published in 2009, PRISMA provides a transparent framework for reviewers to explain why a review was conducted, what methods were used, and what findings were obtained. By using PRISMA, scholars can summarize current knowledge in a field and highlight areas where future research is needed. It helps researchers identify research gaps that individual studies cannot address and pinpoint problems that should be explored further. Additionally, PRISMA can be used to evaluate or develop theories that explain how or why certain issues occur. As a result, systematic literature reviews (SLRs) can provide various types of knowledge for scholars in different fields, including healthcare, policymaking, and marketing. The authors therefore provide a transparent, complete, and accurate SLR based on PRISMA in the research methodology.

In the first screening, the study excluded 1,266 papers that were not related to VIs or that focused solely on AI technology outside the marketing field, based on reading the titles and abstracts. One paper was inaccessible in full text and were therefore excluded. In the second screening, the study removed 47 papers that either did not address how VIs affect consumer trust or lacked detailed methodologies or results. Finally, this research includes 97 high-quality and highly relevant papers for the systematic literature review (see Figure 2).

Figure 2

Flow Chart of Literature Selection for SLR Using the PRISMA



3.7: Data analysis

3.7.1: Method

To achieve the research goal of constructing a framework related to VIs and consumer trust, the study used thematic analysis, a widely recognized qualitative method for finding, examining, and describing themes in data. Several factors contributed to choosing thematic analysis as the method for data analysis.

First, thematic analysis (TA) can be performed within different ontological perspectives, each linked to particular epistemological approaches for interpreting data (Terry, Hayfield, Clarke, & Braun, 2017). Compared with other approaches such as grounded theory (Glaser & Strauss, 1967) and disclosure analysis (Cooke, 1998), TA can be utilized within most theoretical frameworks. As a result, TA is considered the most suitable data analysis method, especially for new researchers using qualitative methods. This study applied thematic analysis (TA) to systematically code, categorize, and interpret key themes emerging from the selected papers, which is well suited to complement a systematic literature review (SLR). By combining SLR with TA, the research ensures both rigorous data collection and in-depth qualitative analysis, providing a clear understanding of how VIs shape consumer trust and highlighting areas for future research.

Second, due to its flexibility, TA enables researchers to analyze and interpret various types of data. TA can be applied to analyze data collected through traditional face-to-face methods like interviews and focus groups (Joffe, 2011). It is also suitable for examining textual data from qualitative surveys (Braun & Clarke, 2023), as well as

online discussion forums (Gooden & Winefield, 2007). For a systematic literature review, rich and detailed data are highly valuable in qualitative research, as they provide nuanced understanding on the research topic. This study collects 97 papers that include various types of data, which can be effectively analyzed using TA.

Third, thematic analysis plays a crucial role in deepening the understanding of existing research (Liñán & Fayolle, 2015). Since the systematic literature review (SLR) aims to examine and integrate findings from various studies on VIs and consumer trust, thematic analysis is especially appropriate. This approach helps researchers link findings to broader theoretical or conceptual questions through coding processes and qualitative data interpretation (Clarke & Braun, 2014). Moreover, Braun and Clarke’s six-step framework includes building a conceptual model, which helps create a distinctive representation of the data. By completing the final stage of this process within the context of the selected literature and matching identified themes with an existing theoretical or conceptual framework, this method supports the development of a conceptual model on VIs and consumer trust. This model will provide a comprehensive understanding of the relationship between these two concepts, based on the themes identified in the reviewed studies. To clarify how this process is implemented, Braun and Clarke’s (2006) six-step framework for thematic analysis outlines a systematic procedure that involves a detailed review of the existing literature to identify themes and trends. This procedure aims to offer a thorough understanding of how VIs foster consumer trust (see Table 7).

Table 7

Braun & Clarke’s Six Phases Framework for Thematic Analysis

Analysis step	Process	Outcome
Reviewing and comprehending the data	Read essential sections of all articles to build a comprehensive view of studies focused on VIs and consumer trust.	Build an overview of literature examining the relationship between VIs and consumer trust, including results of such trust.
Developing initial codes	Highlight significant terms about VIs’ influence on consumer trust and collect related theories and concepts.	Use the initial codes as a foundation for developing a coding guide on factors shaping trust in VIs
Identifying themes	Examine the coded data to discover main themes and related subthemes that capture trends in how VIs relate to consumer trust across different studies.	Organizing the codes and categorizing them into themes helps highlight the main insights drawn from the reviewed literature.
Reviewing themes	Review the coded data for each subtheme to ensure that the connections between themes are appropriate.	All themes clearly reflected the patterns and connections between VIs and consumer trust found in the literature.

Identifying the names of themes	Clearly describe and name each theme, outlining its boundaries and content, to create a precise set of themes for the findings section.	Preparing a clear and organized set of themes for interpreting findings.
Complete the development of themes	Combine the themes and insights to form a thorough understanding of the impact of VIs on consumer trust, and prepare a coherent narrative for presentation.	The completed thematic analysis provided the basis for the discussion and conclusion.

3.7.2: Coding and identifying themes

This study conducts a coding process in four key steps, following the approach suggested by Braun and Clarke (2006). These steps include generating initial codes, organizing codes into groups and subgroups, evaluating and refining codes, and integrating related subgroups. The codes and groups were developed manually, using Excel to create code lists, identify subgroups, and organize all codes into broader categories. Additionally, Excel was employed to build a database that collects key information from the articles, such as sources, contexts, research methodologies, and factors related to how VIs affect consumer trust.

According to Braun and Clarke's (2006) thematic analysis framework, it is essential to become familiar with the raw data from the articles and organize it into appropriate groups for subsequent coding. Tuckett (2005) suggests that the processes of coding, writing, and theorising extend beyond simply reducing and summarizing data; these processes also structure the data, facilitating theme identification and comparison while enhancing the reliability of the findings. To interpret the codes, this study carefully reviewed the articles listed in the Excel database according to their journal rankings based on ABDC.

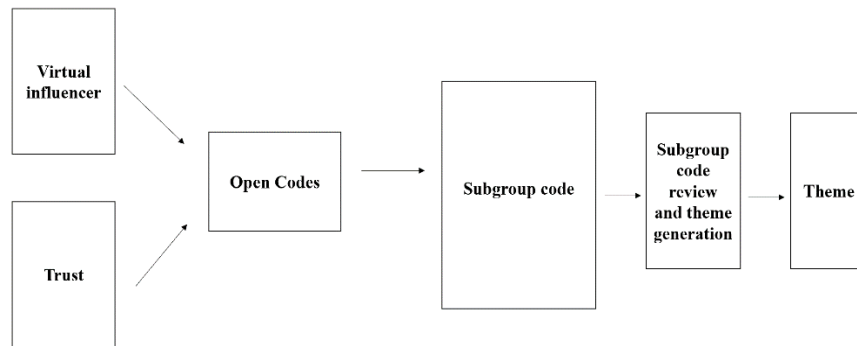
Furthermore, the study broke the data into pieces to validate existing concepts within the context of VIs and consumer trust across articles included in the systematic literature review (SLR). The selected articles, listed in alphabetical order in the Excel database, were thoroughly read. For the theme of VIs and trust, important trust-related factors of VIs, as well as relevant keywords or phrases linked to definitions, were documented in Excel.

After establishing initial codes based on relevant keywords and phrases, the study applied inductive coding to the literature. Thomas (2003) defined inductive coding as a method to generate research findings from significant themes in the original content without being constrained by structured methodologies. By conducting inductive coding, researchers can transform extensive and varied raw data into a clear and concise summary, building connections between research goals and findings derived from the data. Consequently, findings generated through inductive coding can support the development of theoretical models based on the summarized data, which is well-suited for most qualitative research.

Following the summary of initial codes, the study created named code groups and subgroups. The researcher examined relationships between these groups to identify potential themes. This involved analyzing the frequency of codes appearing in each article and their contextual use in the literature. The study also compared existing theoretical models of consumer trust in VIs found in the literature. As a result, similar codes were combined into the same groups. Subsequently, codes or groups unrelated to VIs and consumer trust were removed to generate coherent themes and frameworks (see Figure 3).

Figure 3

Coding Procedures and Theme Development of VIs’ Impacts in Consumer Trust and Outcomes



Themes were inductively generated through iterative coding of 97 peer-reviewed journal articles on virtual influencers and consumer trust. Initial codes representing key influencing factors (e.g., “visual realism,” “emotional expression,” “disclosure clarity”) were clustered into subthemes (e.g., “anthropomorphism,” “authenticity and transparency”) and further consolidated into four main themes: trust formation, Distrust formation, consequences of trust and consequences of distrust (see Table 8).

Table 8

Coding Framework of Themes Derived from the Systematic Literature Review

Initial codes	Sub-themes	Main Themes
Visual realism, emotional expression, emotional resonance	Anthropomorphism	Trust antecedents
Disclosure clarity, sponsorship transparency, sponsorship disclosure, disclosure	Authenticity and transparency	Trust antecedents
Source expertise, attractiveness	Credibility	Trust antecedents

Human–VI interaction, responsiveness, weak parasocial relationship	Interactivity	Trust antecedents
Technology familiarity	Autonomy	Trust antecedents
Perceived control and agency	Autonomy	Distrust antecedents
Hyper-realistic appearance, eerie cues, non-human nature	Uncanny valley effect	Distrust antecedents
Privacy concerns, data manipulation, lack of disclosure	Ethical and privacy concerns	Distrust antecedents
Enhanced brand trust, positive engagement	Consumer trust and engagement	Trust consequences
Purchase intention, brand loyalty	Behavioral outcomes of trust	Trust consequences
Perceived deception, reduced credibility	Consumer skepticism	Distrust consequences
Negative word-of-mouth, disengagement	Consumer behaviour changes of distrust	Distrust consequences

Chapter 4: Findings

Previous research on consumer trust in VIs reveals mixed findings, with some consumers showing trust in VIs while others remain doubtful. This section explores consumers’ perspectives on VIs and whether they are perceived as trustworthy. Four main themes categorize the antecedents of consumer trust or distrust in VIs and examine the behavioral changes that result from this trust. This chapter addresses the following research questions: (1) What factors affect consumers’ trust in VIs? (2) What are the underlying mechanisms involved in trust or distrust? (3) How does trust influence consumer behaviors? To answer these questions, the chapter provides a clearer understanding of how trust in VIs is formed and how it shapes consumer responses in the digital marketing context.

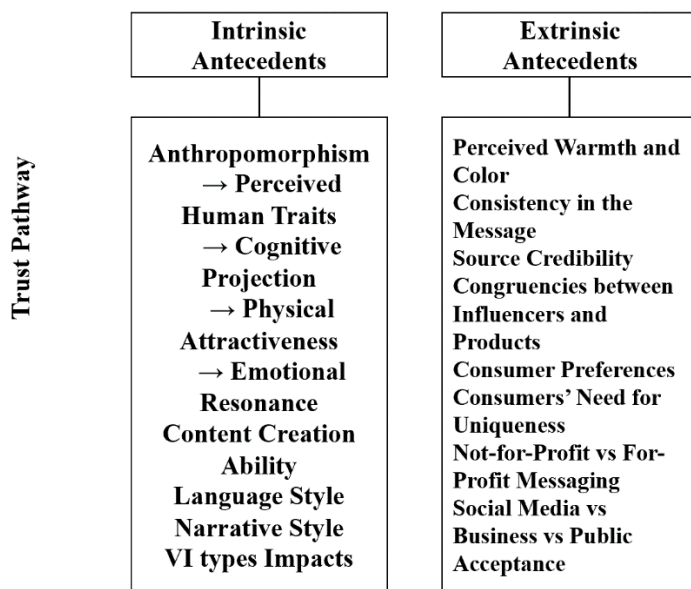
4.1: Determinants of Consumer Trust in Virtual Influencers

4.1.1 Functional Attributes of VIs as Drivers of Trust

This section includes the VI’s key functions which attract and build trust effectively with consumers. According to previous research in VIs field, researchers perceive that the physical appearance, content of posts, language used in narratives and interactivity would be main functions that influence audiences’ perception towards VIs, leading to positive response and solid consumer trust (see Figure 4).

Figure 4

Functions of VIs Affecting Consumer Trust



4.1.1.1: Anthropomorphism

Anthropomorphism is defined as the perception of human-like traits in non-human agents (Muniz et al., 2024). Research indicates that when consumers perceive an entity as human or human-like, they experience anthropomorphism. VIs, being highly human-like by design, often trigger a strong sense of anthropomorphism. This perceived humanness positively influences people's trust in technology (Muniz et al., 2024). Scholars describe anthropomorphism not only as perception but also as the active cognitive projection of human behaviors, emotions, and features onto non-human entities, which shapes how individuals interpret and engage with such agents, particularly VIs.

In the context of the post-fourth industrial revolution, the growing prevalence of Artificial Intelligence (AI) and Machine Learning (ML) technologies has transformed brand-consumer interactions. AI-based anthropomorphic online influencers on social media serve as effective tools to build consumer connections. Anthropomorphism involves applying human traits—intentions, emotions, motivations—real or imagined, to non-human agents. Anthropomorphic VIs, created using computer-generated imagery (CGI) and AI control to mimic human appearance and behavior, are perceived as highly engaging and relatable, thus gaining consumer trust (Sands et al., 2022).

Studies highlight the essential role of anthropomorphism in shaping responses to AI agents such as VIs and robots. Human-like features foster positive attitudes by increasing consumer confidence in AI avatars. These features enhance perceptions of reliability, intelligence, and trustworthiness, strengthening emotional connections between audiences and AI-driven influencers (Wan & Jiang, 2023). Research further finds that audiences' perceptions of VIs' human-like qualities play a key role in trust formation. For example, a higher degree of self-consistency in a brand spokesperson enhances consumer trust, a finding applicable to VIs. Attractiveness of VIs also significantly influences trust, indicating that both appearance and behavioral cues shape consumer evaluations (Nukhu et al., 2024). Consumers tend to anthropomorphize VIs when posts display physical looks, professional identity, and social activities, supporting the CASA theory that people treat AI agents as humans and apply human social norms when interacting with them (Nass et al., 1994).

Further research confirms that the greater the anthropomorphism of a virtual agent, the more trustworthy consumers perceive the VI to be. This aligns with the CASA framework, which posits consumers respond favorably to digital agents exhibiting strong human-like characteristics (Kim & Wang, 2024). Physical attractiveness and congruence between VIs and consumers are critical factors influencing trust and positive brand attitudes (Laszkiewicz & Kalinska-Kula, 2023). Consumers generally trust VIs resembling real humans in appearance and cognition (Goel & Garg, 2025). Attributes such as physical attractiveness, homophily, and congruence serve as key drivers of trust in VIs (Alboqami, 2023). This is consistent with source attractiveness and credibility frameworks, where perceived trustworthiness and reliability of VIs enhance consumer trust. Expertise is also an important factor increasing consumer trust (Alboqami, 2023). Moreover, six attributes—

anthropomorphism, attractiveness, luminary, quality, trendiness, and robophobia—have been identified as significant influences on consumer acceptance of VIs as brand endorsers (Feng & Chen, 2024). The perceived realism of VIs' physical appearance and social behavior facilitates trust and closeness (Feng & Chen, 2024).

As advances in AI, robotics, and computer graphics escalate, research findings on users' emotional responses to human-like robots and virtual avatars have produced mixed results. Some studies support the Uncanny Valley (UV) theory, which explains consumers' unpredictable emotional reactions to agents with human-like appearances (Cheetham et al., 2011; Jin, 2023). The UV theory suggests that as agents become more human-like, consumer comfort increases until a point of unease or discomfort arises, known as the valley (Nukhu et al., 2024). When encountering "unnatural" anthropomorphic VIs, the Uncanny Valley effect may cause discomfort and negative responses. People's responses increase positively with anthropomorphism until it becomes too realistic, triggering discomfort (Wan & Jiang, 2023). Although human appearances are generally viewed as more trustworthy than non-human faces, VIs with unrealistic appearances may evoke distrust due to the uncanny effect (Gerlich, 2023). The persuasiveness of VIs is linked to their level of humanness, with more human-like VIs having stronger influence (Block & Lovegrove, 2021). However, when a VI becomes almost but not perfectly human-like, subtle imperfections in appearance or behavior can trigger feelings of eeriness, discomfort, or distrust among consumers. These unsettling reactions arise because consumers detect inconsistencies that conflict with their expectations of human behavior or appearance, causing a cognitive dissonance that shifts comfort to discomfort, this phenomenon is known as the "uncanny valley" (Franke, Groeppel-Klein, & Müller, 2023).

Studies further show that the nature of the influencer (human or virtual) does not significantly affect user trust or attitudes. This supports the CASA paradigm, suggesting users apply social rules from human-human interaction to technology and in particular VIs (De Cicco, 2024). Highly anthropomorphized VIs did not trigger audience unease after disclosure, indicating social acceptance when VIs are perceived like SMIs. Anthropomorphic appearances mitigate negative impacts of VIs' artificial nature on perceived social presence, including warmth and emotional expression. Brand trust does not significantly differ whether the influencer is human or virtual, and disclosure of influencer type does not directly affect brand evaluations. Audiences tend to trust digital agents with higher anthropomorphism and social cues more easily than VIs with lower anthropomorphic attributes. This acceptance facilitates human-VI relationship building. Compared to animated-appearance VIs, human-like VIs possesses greater social presence (Wan & Jiang, 2023).

In summary, most studies support a positive relationship between anthropomorphism and consumer trust in VIs, as human-like cues enhance perceived warmth, authenticity, and social presence. This relationship is often mediated by perceived authenticity and emotional engagement, and moderated by factors such as congruence and transparency. However, several studies reveal a reversal effect when anthropomorphism becomes overly realistic, leading to discomfort or distrust, which is a phenomenon known as the "uncanny valley." This effect indicates that

while moderate anthropomorphism fosters trust and engagement, excessive humanness can undermine them. The strength of evidence is generally robust but not entirely consistent across contexts, suggesting that cultural background, platform design, and disclosure practices may influence how consumers interpret and respond to VIs' human-like features.

4.1.1.2: Content creation ability

Researchers highlight that VIs are perceived as more credible and trustworthy due to their flexibility in content creation and their ability to foster trust and perceived similarity with target audiences, which enhances their influence on consumers' purchase intentions. Additional studies emphasize that consistency and high engagement in VIs' content are essential for building consumer trust. While some research indicates that SMIs are still viewed as more trustworthy, findings show no significant difference between VIs and SMIs in certain contexts. For example, consumers are equally likely to follow both VIs and SMIs, and VIs can even generate higher electronic word-of-mouth intentions, demonstrating their potential as effective substitutes for SMIs. Moreover, VIs are capable of personalizing content and recommendations as effectively as SMIs. As familiarity with AI technologies grows, acceptance of VI is expected to increase accordingly (Gerlich, 2023; Nukhu, 2024; Sands, 2022).

4.1.1.3: Language style

Research indicates that the language style used by VIs plays a crucial role in shaping consumer perceptions and trust. High-arousing language tends to be more persuasive when used by VIs, while low-arousing language is more effective for SMIs. Furthermore, the typicality of language enhances trust in the product, which subsequently increases consumers' purchase intentions. Additional studies reveal that task-oriented language styles more effectively strengthen the influence of product-dependent VIs on purchase intentions by fostering both cognitive and emotional trust. In contrast, social-oriented language styles are more effective for product-independent VIs in enhancing purchase intentions through similar trust mechanisms (Wang et al., 2025; Wang and Zhang, 2025).

4.1.1.4: Narrative style

Studies have shown that narrative styles significantly influence consumer trust toward VIs. When consumers interact with VIs using non-linear narratives, stronger connections are formed, which lead to increased trust (Liu, Ye, & Yu, 2024). Moreover, thoughtfully constructed narratives, whether linear or non-linear, effectively guide consumers through the sensemaking process. This process helps develop parasocial interactions between consumers and VIs, which affect the relationship between narrative style and trust. As a result, enhanced parasocial interactions foster greater consumer trust and more favorable attitudes toward the endorsed brands (Liu, 2024).

4.1.1.5: Impact of VI Type on Trust Formation

Research has found that different types of VIs can influence consumer trust in distinct ways. Specifically, product-independent VIs tend to generate higher emotional trust, while product-dependent VIs are more effective at increasing cognitive trust. Further studies examining the impact of influencer type, such as micro versus macro influencers, reveal that these distinctions also apply within the VI context. Micro VIs, characterized by smaller but highly interactive follower communities, are more likely to foster positive perceptions and greater trust among consumers compared to their macro counterparts (Wang and Zhang, 2025; Lim et al., 2025).

4.1.2 Extrinsic Antecedents of Trust in Virtual Influencers

4.1.2.1 Perceived Warmth and Color

Research indicates that the perceived warmth of VIs' posts significantly influences consumer trust in VIs. Warm colors used in posts tend to increase perceived warmth, which enhances consumers' emotional trust toward VIs, while cooler colors do not enhance perceived competence and may lead to weaker trust (Chan et al., 2023). Since audiences are aware that VIs are artificially created and share similarities with AI robots, they inherently perceive these influencers as competent, so cool colors do not further boost competence perceptions (Kim et al., 2019; Hess & Melnyk, 2016). However, incorporating warm tones can increase perceived warmth, fostering emotional trust and encouraging favorable consumer behaviors such as higher purchase intentions.

4.1.2.2 Consistency in the Message

Consistency in the message delivered by VIs plays a crucial role in fostering brand trust. Studies show that VIs are particularly effective at maintaining message consistency, which helps consumers better understand the brand's message and develop favorable attitudes (Choi, 2024). Message consistency strengthens the trust relationship between brands and consumers by providing reliable and coherent information.

4.1.2.3 Source Credibility

Source credibility is another essential factor impacting consumer trust and engagement. Research demonstrates that the credibility of VIs influences trust in both the endorsed products and the influencers themselves, contributing to the development of parasocial relationships and ultimately increasing purchase intentions. Trust transfer theory explains that trust in VIs can directly influence trust in the products they promote (Yu et al., 2025). Supporting this, further studies find that brand trust can directly affect the perceived trustworthiness of VIs, which influences the relationship between brand trust and consumer purchasing behavior. Although trust in VIs alone may not directly influence purchase intentions, it plays a vital role in connecting brand trust with consumer behavior changes (Chaihanchai, 2024).

4.1.2.4 Congruencies between Influencers and Products

The congruence between VIs and the products they endorse fosters positive consumer attitudes and enhances trust in the influencer. This finding aligns with classic source attractiveness and credibility frameworks, which suggest that perceived trustworthiness and reliability increase consumer trust when influencer and product attributes are congruent (Alboqami, 2024; Hovland et al., 1953).

4.1.2.5 Consumer Preferences

Consumer preferences also shape trust in VIs. Research shows that individuals who follow and trust SMIs tend to demonstrate higher engagement and purchase intentions when interacting with VIs, suggesting that a positive disposition toward SMIs can translate into greater trust toward VIs (Jayasingh, 2025).

4.1.2.6 Consumers' Need for Uniqueness: Acceptance of Virtual Influencers

Consumers with a high need for uniqueness prefer to interact with VIs as a way to distinguish themselves and express their identity in the online world. This leads to greater acceptance of VIs among this group. However, this need for uniqueness does not significantly impact consumers' trust in VIs (Sands et al., 2022).

4.1.2.7 Not-for-Profit vs For-Profit Messaging

The context of messaging influences trust in VIs. Studies show that in not-for-profit messaging contexts, VIs can demonstrate source credibility and trust levels comparable to those of SMIs (Kim & Wang, 2024). However, in for-profit contexts, consumer trust in VIs drops significantly, aligning more closely with their trust in fully animated virtual agents.

4.1.2.8 Social Media vs Business vs Public: Acceptance of Virtual Influencers' Non-Human Nature

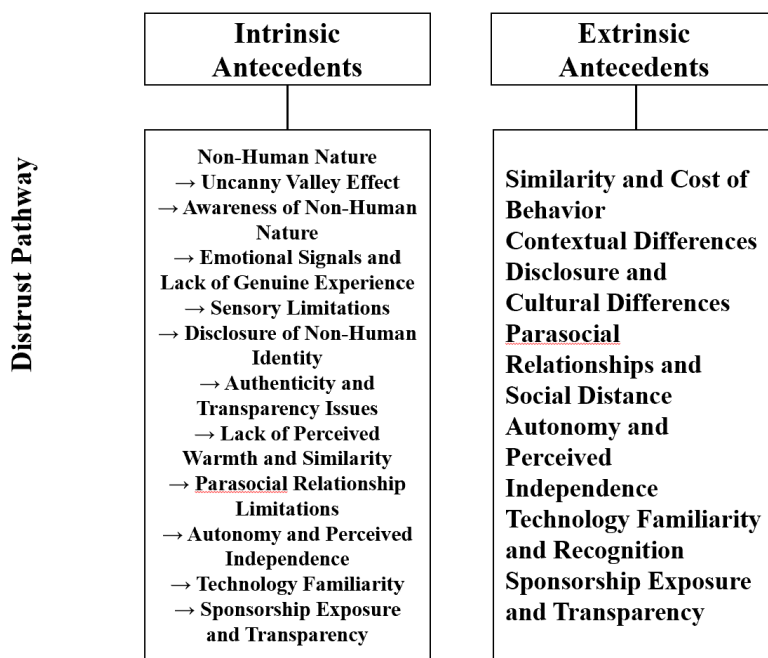
Context also plays a critical role in the acceptance and trust of VIs after the disclosure of their virtual nature. Virtual humans are more readily accepted and trusted in social media environments than in business contexts. Trust is a key factor influencing this acceptance, as VIs maintain higher trust and favorable perceptions through social media interactions, which is less achievable in professional environments (Gerlich, 2024). One study found that disclosing the virtual nature of VIs causes a significant negative impact on audience trust, although trust remains positive overall. Conversely, in professional settings, trust increased after disclosure, suggesting that transparency can enhance trust and acceptance in business contexts. These findings underscore the importance of context and transparency in shaping consumer attitudes toward VIs.

4.2: Determinants of Consumer Distrust in Virtual Influencers

This section highlights key functions of VIs that may trigger consumer distrust. Previous research in the field of VIs suggests that factors such as unnatural or uncanny physical appearance, irrelevant or overly promotional content, impersonal language, and lack of genuine interactivity can negatively affect audiences’ perceptions of VIs. These factors may lead to skepticism and weaken consumer trust, resulting in cautious or adverse consumer responses (see Figure 5).

Figure 5

Functions of VIs Affecting Consumer Distrust



4.2.1 Limitations of Virtual Influencers as Sources of Distrust

4.2.1.1 Non-Human Nature and Parasocial Relationship Limitations

Studies reveal that uncanniness is a key factor influencing consumers’ trust in VIs, stemming from their non-human nature. Negative emotions such as fear and disgust arise from the “uncanny valley” effect, which occurs when VIs have an almost-human but still unnatural appearance, leading to discomfort and distrust (Nukhu and Ali, 2024). According to the CASA framework, while consumers understand that computer-generated agents lack genuine human traits and emotions, they unconsciously apply social norms and expectations to these non-human agents, generally responding more positively to human-like appearances, voices, or behaviors (Reeves & Nass, 1996; Wan and Jiang, 2023; Nass et al., 1994). However, this relationship is complex. The uncanny valley

specifically captures the discomfort caused by VIs' non-human but highly humanlike characteristics (Ahn et al., 2022; Mori, 1970; Lou et al., 2023). Research shows that consumers exhibit fewer negative attitudes toward animated or stylized VIs compared to hyper-realistic ones, with anime-style VIs eliciting more favorable responses than highly human-like VIs, consistent with the uncanny valley theory (Qu and Baek, 2024). While SMIs are generally perceived as more trustworthy, these findings underscore how the non-human nature and varying degrees of anthropomorphism distinctly impact consumer trust and attitudes toward VIs.

4.2.1.2 Similarity and Cost of Behavior

Studies show that animated or foreign-appearance VIs with low racial similarity tend to generate greater consumer distrust, particularly when promoting low-cost pro-environmental behaviors such as signing petitions or simple recycling habits. This distrust stems from perceived social distance and lack of cultural relatability. However, in contexts that involve high-cost pro-environmental behaviors, such as purchasing expensive sustainable products or making long-term lifestyle changes, human-like and foreign-looking VIs elicit stronger trust and engagement. Wan and Ng (2024) argue that in high-cost contexts, consumers focus more on the influencer's credibility and authenticity cues, rather than racial or cultural similarity, allowing more anthropomorphic and competent-appearing VIs to gain persuasive power. This highlights the importance of matching VI appearance with behavioral cost level in sustainability campaigns (Wan & Ng, 2024).

4.2.1.3 Awareness of Non-Human Nature and Its Impact

Some scholars argue that awareness of VIs artificiality does not necessarily undermine consumer trust. Studies have found that consumers generally accept the synthetic and AI-generated nature of VIs, recognizing that they are not real humans. This awareness helps shape realistic expectations and perceptions, which may reduce feelings of deception and enhance perceived transparency (Feng, 2024; Choudhry et al., 2022).

4.2.1.4 Authenticity and Transparency

Research shows that although audiences express positive emotions toward VIs, some followers experience a lack of emotional resonance due to the absence of a "real" human identity behind the content, leading to diminished credibility (Tung, 2024). VIs may cause distrust toward endorsed brands due to perceived lack of authenticity and transparency (Lou et al., 2023). Participants tend to trust social media influencers more than VIs and show lower purchase intentions toward brands endorsed by VIs, partly because of VIs' lower similarity to consumers which hinders parasocial relationship development and perceived authenticity (Lou et al., 2023; Xie-Carson & Benckendorff, 2024).

4.2.1.5 Contextual Differences: General Public vs Social Media and Professional Audiences

Research comparing VIs' trust performance across social media, professional, and public contexts finds that perceived human authenticity strongly influences public trust. The general public shows lower trust in VIs, likely due to skepticism around their non-human identity and ethical concerns (Gerlich, 2024). Scholars suggest VIs be used as supportive tools rather than full human replacements to build long-term trust and acceptance.

4.2.1.6 Disclosure of Non-Human Identity and Cultural Differences

Disclosure of VIs' non-human nature negatively affects consumer perceptions of anthropomorphic traits, reducing credibility and trust in the brand (Muniz, 2024). Cultural differences also matter: in the U.S., such disclosure lowers purchase intentions, while in Brazil it has no significant effect, indicating culture shapes trust responses.

4.2.1.7 Emotional Signals and Lack of Genuine Experience

Researchers find that VIs, despite their human-like appearances and cognitive abilities, often display emotional signals that audiences perceive as unnatural, which limits both cognitive and emotional trust (Goel and Garg, 2025). While perceived authenticity can foster affective trust, it does not fully translate into cognitive trust because consumers acknowledge that content backed by reputable brands is credible, but also understand that VIs cannot independently generate content (Goel and Garg, 2025). This gap in emotional authenticity leads researchers to suggest that consumers generally place more trust in SMIs, who can provide direct, lived experiences and genuine emotional resonance, thereby strengthening brand image and consumer engagement—especially in testimonial-based contexts where authenticity is vital (Hidayat, 2024; Keller, 2016). Moreover, scholars highlight that this challenge is further compounded by increasing public skepticism toward social media content as a whole, which undermines trust in VIs (Yusuf et al., 2022). Some studies report that participants describe VIs as “authentically fake,” contributing to consumer distrust. Nevertheless, researchers note that audiences may still accept the carefully crafted persona of VIs, which can help mitigate negative reactions associated with the uncanny valley effect (Lou et al., 2023).

4.2.1.8 Sensory Limitations and Promotional Perception

Scholars emphasize that VIs cannot provide proximal sensory experiences such as haptic, olfactory, and gustatory cues, unlike SMIs. This limitation poses challenges for building trust in product endorsements that rely on such direct sensory experiences. However, for distal sensory experiences, including visual and auditory cues, VIs perform comparably to SMIs (Zhou and Jiang, 2024). Additionally, studies show that consumers tend to perceive content from VIs more as promotional material than content shared by humans. This perception contributes to VIs being less effective in fostering positive brand attitudes. Furthermore, higher sensory realism in VIs may reduce consumers' ability to recognize advertising content, which can weaken the overall effectiveness of advertisements (Deng et al., 2024).

4.2.1.9 Lack of Perceived Warmth, Similarity, and Social Distance

VIs frequently lack perceived warmth and tend to maintain a greater social distance from their followers, which hampers the formation of authentic and trusting relationships. In comparison to SMIs, VIs are seen as less warm and trustworthy, offer less engaging live streaming commerce experiences, and participate in fewer interactive conversations (Wan and Jiang, 2023). Furthermore, similarity between the influencer and the consumer plays a vital role in building trust. Lower resemblance in appearance and behavior weakens parasocial relationships and diminishes perceived authenticity, resulting in reduced trust in VIs compared to SMIs (Lou et al., 2023).

4.2.2 External and Psychological Factors to Trust Formation

4.2.2.1: Parasocial Relationships and Social Distance

Parasocial relationships (PSRs) play a crucial role in building trust between VIs and consumers. PSRs are key drivers of effective influencer marketing and are especially relevant to VIs. Audiences tend to respond more positively to influencers who appear socially closer and more approachable. However, VIs generally evoke a greater sense of social distance compared to SMIs, making it harder for consumers to connect with them. Additionally, micro-VIs are perceived as more approachable than macro-VIs, resulting in stronger positive effects on trust and engagement (Sands et al., 2022). Limited consumer knowledge of VIs and lack of experience with AI-driven services also present significant barriers to establishing trust in VIs.

4.2.2.2: Autonomy and Perceived Independence

Autonomy and perceived independence are essential factors influencing trust in VIs. VIs are commonly perceived as having lower autonomy than SMIs, which contributes to reduced consumer trust. Nonetheless, the novelty of VIs increases users' willingness to follow and engage in word-of-mouth promotion, despite lower trust levels (Laszkiewicz & Kalinska-Kula, 2023). Consumers often view VIs as controlled by brands and lacking the independent agency that SMIs possess, further weakening trust.

4.2.2.3: Technology Familiarity and Recognition

Consumer familiarity with technology also shapes trust in VIs. When consumers lack sufficient understanding of the technology behind VIs, they tend to perceive these influencers as less warm and trustworthy compared to SMIs (Wan & Jiang, 2023). Interestingly, consumers experienced in immersive digital environments such as the metaverse show less interest in engaging with both SMIs and VIs, preferring SMIs due to perceived greater similarity, attractiveness, and authenticity (Haikel-Elsabeh, 2023). Conversely, consumers new to such environments tend to accept VIs more readily but still exhibit lower trust, largely because they perceive VIs as lacking autonomy and relate less to their non-human nature.

4.2.2.4: Sponsorship Exposure and Transparency

Transparency plays a critical role in maintaining consumer trust toward VIs. Studies reveal that while VIs with human-like appearances can enhance purchase intentions and consumer engagement, their trustworthiness significantly decreases when sponsorship disclosures are made public (Kim & Zihang, 2025). This finding underscores the delicate balance between promotional effectiveness and perceived authenticity in VI marketing.

4.2.2.5: Contextual Factors: Real Environment and Companions

Contextual factors further influence trust in VI. Research shows that VIs placed in real-world environments experience decreased consumer trust. This decrease becomes more pronounced when a VI appears alongside a human companion, which may heighten perceptions of inauthenticity. Conversely, when VIs are accompanied by other virtual agents, this negative impact on trust disappears, suggesting that audiences may accept and trust VI to a similar degree as SMIs in fully virtual or digital settings (Qu & Baek, 2024).

This study covers how the key functions of VIs such as their physical appearance, content quality, narrative style, and interactivity directly affect consumer trust or distrust. It also explores important factors including consumer characteristics, cultural background, and technology acceptance, as well as other factors like perceived authenticity, cognitive processing, and emotional engagement which influence the strength and direction of these effects. The outcomes of trust and distrust lead to different consumer behaviors. Trust encourages positive responses such as brand loyalty, purchase intentions, and favorable word-of-mouth, while distrust results in skepticism, avoidance, and negative word-of-mouth.

4.3: Consequences of Consumer Trust in Virtual Influencers

4.3.1: Trust and Purchase Intention

Recent studies confirm that consumers' trust in VIs significantly drives their purchase intentions for endorsed products (Feng & Chen, 2024). Earlier influencer marketing research similarly found that influencer expertise and trustworthiness enhance followers' intentions to buy promoted brands (Koay et al., 2022). When trust is established, consumers value influencer recommendations more, increasing brand acceptance. Trust also generates positive consumption reactions such as favorable attitudes toward advertisements and brands, as advertising spokespeople are viewed as credible sources with necessary expertise and knowledge, shaping consumer behavior (Li & Lee, 2024).

4.3.2: Social Distance, Brand Trust, and Emotional Attachment

A closer social distance between audiences and VIs results in more positive consumer behaviors, especially among Gen Z (Kholkina & Zelenskaya, 2025). Younger consumers tend to trust, share content, and develop emotional connections with brands promoted by influencers. VIs are generally perceived as reliable, enhancing brand image, transparency, and authenticity (Nukhu, 2024). Despite consumer skepticism, VIs remain persuasive and popular in industries like fashion and luxury marketing, where they have found acceptance. Moreover, emotional engagement fostered by human-like features enhances trust and purchase intention (Lee & Shen, 2025; Volles et al., 2024).

4.3.3: Consumer Confidence, Attitudes, and Reduced Risk

Trust in VIs increases consumer confidence in information sources, leading to more positive brand attitudes and reduced perceived risks, especially in service industries such as hospitality (Liu & Yu, 2024). Cognitive trust formed through narrative style influences overall brand trust and consumer attitudes.

4.3.4: Engagement, Social Influence, and Behavioral Change

Extending social influence theory to VIs, research shows that their high credibility shapes consumer behavior through normative and informational social influence, increasing engagement and shifting attitudes and purchase intentions (Hu et al., 2019; Akhtar & Kuzior, 2024). Consumers perceiving higher interactivity with VIs are more receptive to endorsements, resulting in greater engagement on online platforms.

4.3.5: Human-likeness, Trust, and Behavioral Responses

Studies find that human-like VIs inspire greater trust and engagement due to their realistic appearance and social cues, leading to increased purchase intentions (Kim & Zihang, 2025). The perceived humanness of VIs plays a key role in trust formation and consumer behavior, as reflected by higher user engagement and emotional attachment (Belanche, 2021; Xie-Carson et al., 2023).

4.3.6: Trust Transfer and Parasocial Relationships

Trust in VIs often transfers to the products they endorse, boosting consumer confidence in product quality and increasing purchase intentions (Laszkiewicz & Kalinska-Kula, 2023; Yu et al., 2025). Perceived expertise enhances trust not only in streamers but also in endorsed products and the broader digital community. Emotional engagement fostered by trust builds parasocial relationships with audiences, deepening consumer-influencer connections.

4.3.7: E-WOM Sharing and Relationship Building

Anthropomorphic cues from familiar brands strengthen consumers' affective trust, particularly emotional trust, which affects customer engagement and electronic word-of-mouth (E-WOM) sharing (Goel & Garg, 2025). Stronger trust leads to more positive feedback and repeated interactions, reinforcing consumer relationships with VIs and building long-term trust in the technology.

4.3.8: Communication Effectiveness and Behavioral Intentions

Trust in VI enhances communication success, especially in green marketing. Perceived warmth and credibility of VIs foster positive attitudes toward pro-environmental behaviors and increase consumer engagement in such activities (Gerrath, 2024; Wan et al., 2024). Building rewarding relationships with followers through trusted VIs strengthens intentions toward sustainable consumption.

4.4: Consequences of consumers' distrust in Virtual influencers

4.4.1: Negative Impact of Consumer Distrust on Purchase Intention

Consumer distrust toward VIs significantly harms the brands they endorse. The Meaning Transfer Model explains that influencers' misbehavior can erode consumer trust in brands and products, reducing purchase intentions and weakening positive electronic word-of-mouth (E-WOM) (Dondapati & Dehury, 2024). Similarly, deceptive promotional behavior by VIs negatively affects consumer trust, leading to unfavorable attitudes toward endorsed brands (Joel-Edgar et al., 2025). Authenticity—commonly defined as “not to be a copy or an imitation” (Grayson & Martinec, 2004)—is critical; many consumers hesitate to trust VIs because they cannot provide real

product experiences, resulting in weaker purchase intentions (Lou et al., 2023). These factors collectively show that distrust due to misbehavior, deception, or lack of authenticity can substantially lower consumers' willingness to purchase.

4.4.2: Weak Public Trust, Source Credibility, and Message Effectiveness

When VIs fail to communicate with integrity and credibility, public trust declines, diminishing message acceptance and effectiveness (Hidayat, 2024). VIs often generate lower source trust, intentions to follow, and brand attachment compared to SMIs. However, VIs may still stimulate stronger electronic word-of-mouth, indicating that despite weaker trust and attachment, other forms of engagement remain effective (Kholkina et al., 2025).

4.4.3: Limited Impact of Trust on Purchase Intentions but Maintaining Persuasiveness

Some scholars argue that limited trust in VIs may not significantly reduce consumer purchase intentions. Although VIs are perceived as less warm and provide less engaging live-streaming commerce experiences than humans, they can evoke similar levels of perceived social closeness and purchase intentions (Wan & Jiang, 2023). Consumers tend to trust SMIs more but may form positive perceptions of products endorsed by VIs when these VIs are seen as unique. This uniqueness captures audience attention and sustains VIs' persuasiveness as brand endorsers (Volles et al., 2024). Thus, even when trust is constrained, attributes like perceived uniqueness and social closeness can mitigate negative effects and preserve persuasiveness and engagement.

4.5: Underlying Mechanisms of Trust Formation in Vis

This section examines how trust in virtual influencers is formed and the underlying mechanisms that drive this process. It discusses trust-related theories applied in virtual influencer research to explain how they can foster trust in marketing contexts.

4.5.1: Trust transfer theory

Scholars adopted trust transfer theory to underscore how trust is established in VIs. For instance, researchers indicate that the perceived source credibility of VIs as endorsers can positively affect both product trust and VI trust simultaneously (Yu et al., 2025). This finding aligns with trust transfer theory, which proposes that trust in a live-streamer will be transferred to the products or brands they endorse. The research underscores the dynamic nature of trust transfer theory in the VI context, in which consumer trust in VIs can significantly influence trust in the brands they endorse. According to the findings, the perceived credibility of VIs impacts both trust in products and the emotional engagement of consumers. This emotional engagement, together with trust in VIs, leads to solid parasocial relationships between audiences and VIs, which in turn positively influence purchase intentions.

Some studies have examined, through the lens of trust transfer theory, how the brand prominence can enhance consumer confidence in VIs by shifting the trust associated with the brand to the VI (Wang & Zhang, 2025). According to trust transfer theory, consumers can transfer their trust from a familiar object to an unfamiliar one when the two are connected. The study discovered that when brand prominence is high, consumers exhibit greater brand recognition, increased confidence in products endorsed by VIs, and stronger cognitive and emotional trust.

4.5.2: Source credibility

Source credibility model is widely utilized in VIs research, suggesting that in VIs context, the perceived credibility of an informational message will influence VIs' perceived characteristics and trust, leading to impacts on consumers behaviour on online platforms (Akhtar et al., 2024). At the same time, some scholars also explore how source credibility theory helps build VIs' trustworthiness and ultimately inspires people's behavior on social media (Tung & Lan, 2024). Researchers found that expertise, as a key factor in credibility, plays a crucial role: when VIs demonstrate their knowledge of green consumerism through storytelling, audiences perceive them as trustworthy due to their storytelling ability, which inspires sustainable actions. This study emphasizes the emotional power of visual communication in environmental advocacy between VIs and audiences.

4.5.3: Trust theory

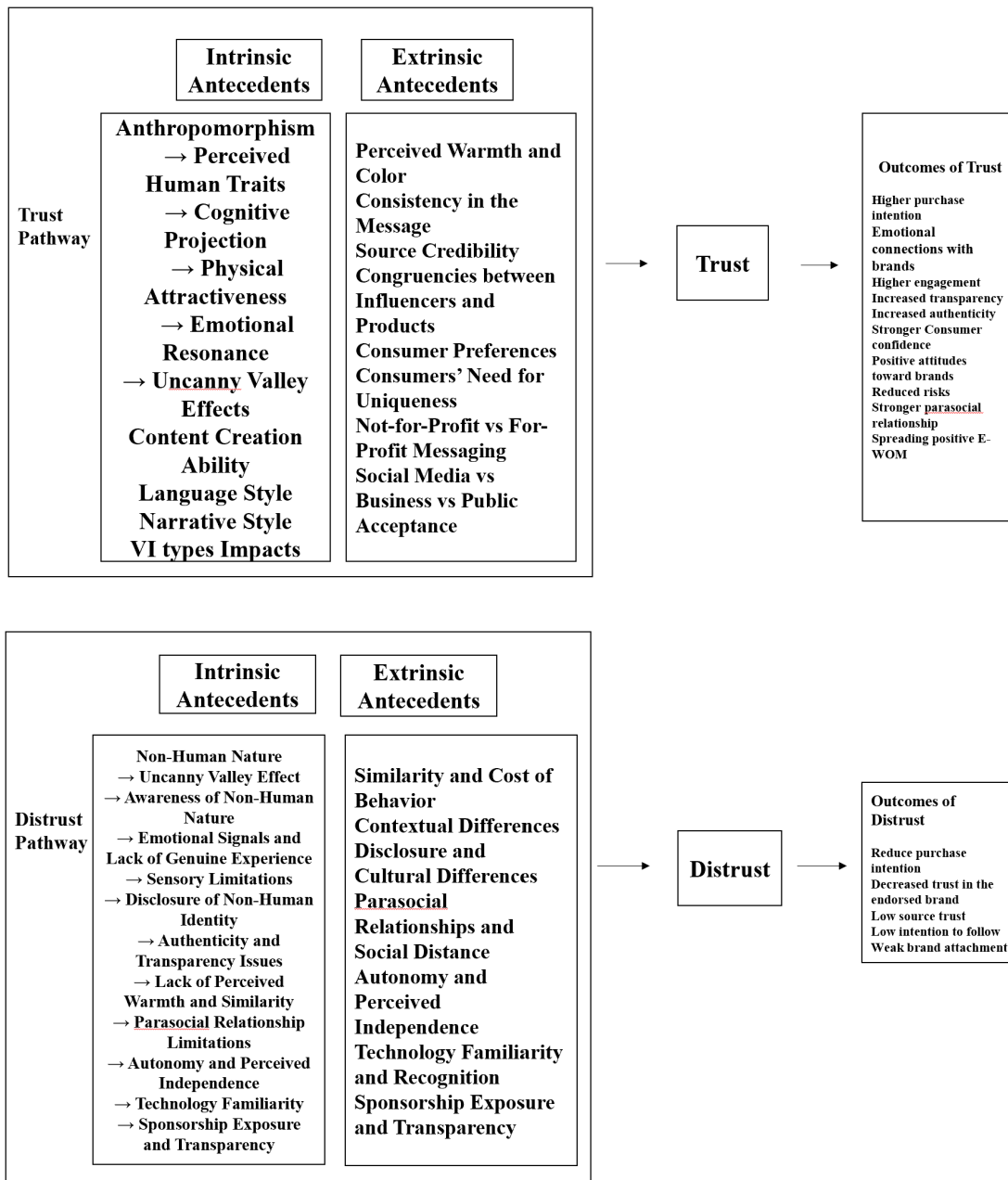
Trust theory indicates that the level of trust directly affects users' behavioral intentions and their willingness to engage with AI systems or digital entities (Moussawi & Benbunan-Fich, 2021). This highlights the importance of trust in reducing perceived risks and uncertainties when consumers interact with novel technologies like virtual influencers (VIs). Researchers apply trust theory to identify that the anthropomorphic traits of VIs can foster trust among consumers by adding more human touch to VIs, thereby strengthening trust in the influencer. Once consumers perceive VIs as trustworthy, this increases customer engagement and ultimately motivates them to spread positive word-of-mouth (Goel & Garg, 2025).

4.6: Integrated synthesis Dual-Pathway Model

The findings of this review were synthesised into an integrated dual-pathway conceptual model that maps the antecedents, mechanisms, and behavioural outcomes of both trust and distrust in virtual influencers (VIs). The model (Figure 6) provides a visual representation of how these pathways operate in parallel, informed by empirical evidence from 97 peer-reviewed studies across marketing, communication, human-computer interaction, and AI-related disciplines.

Figure 6

The Dual-pathways Model of Trust and Distrust in VIs: Antecedents and Outcomes



The synthesis of findings from the 97 included studies has been consolidated into a dual-pathway conceptual model (Figures 6), which maps the intrinsic and extrinsic antecedents, mechanisms, and behavioural outcomes of both trust and distrust in virtual influencers (VIs). This framework offers a structured understanding of the distinct yet interconnected processes that drive consumer responses toward VIs.

The trust pathway is initiated by intrinsic antecedents such as anthropomorphism—manifested in perceived human traits, cognitive projection, physical attractiveness, emotional resonance, and in some cases moderated by uncanny valley effects—alongside content creation ability, language and narrative style, and VI type effects. Extrinsic antecedents include perceived warmth and colour, message consistency, source credibility, brand–VI congruence, consumer preferences and need for uniqueness, the nature of messaging (not-for-profit vs for-profit), and contextual acceptance across platforms and domains. These antecedents influence cognitive and affective mechanisms that strengthen perceptions of credibility, authenticity, and relational closeness. The resulting positive behavioural outcomes include increased purchase intention, higher engagement, and positive word-of-mouth, as well as enhanced perceptions of social presence, homophily, and brand alignment.

Conversely, *the distrust pathway* is triggered by intrinsic antecedents such as the awareness of the VI’s non-human nature, uncanny valley effects, limited capacity for genuine emotional signalling, sensory limitations, and the disclosure of non-human identity. These are often compounded by authenticity and transparency issues, weak parasocial relationship development, reduced perceived warmth and similarity, autonomy and independence concerns, and technology familiarity effects. Extrinsic antecedents include similarity and cost of behaviour, contextual and cultural differences, social distance in parasocial relationships, lack of perceived autonomy, and sponsorship exposure. These factors activate mechanisms such as scepticism, perceived manipulation, and reactance, which in turn lead to negative behavioural outcomes including reduced purchase intention, diminished trust in the endorsed brand, lower source trust, reduced intention to follow, and weaker brand attachment.

A key insight from this model is that trust and distrust operate as parallel, partially independent processes rather than as polar extremes of a single continuum. Certain antecedents—such as authenticity, message congruence, and anthropomorphism—can function as bivalent triggers, capable of reinforcing trust when perceived positively or accelerating distrust when perceived negatively. This duality reinforces the relevance of Attitudinal Ambivalence Theory in explaining how consumers can simultaneously hold favourable and unfavourable evaluations of VIs.

4.7: Summary of key findings

The findings from previous research contribute to addressing the research questions of this study. First, the study explains why and how VIs can affect consumer trust. Scholars have found that both physical appearance and emotional expression can affect their perceived warmth and consumers’ psychological distance from them, influencing trust in VIs. Although highly anthropomorphic virtual agents are more easily accepted by people, they may also trigger the Uncanny Valley effect when interacting with audiences. As a result, they may struggle to build parasocial relationships with consumers, which reduces trust. Additionally, the perceived lack of sensory

capabilities means that VIs cannot endorse products by providing real usage experiences like SMIs, leading to lower trust in the brands they promote.

Second, the findings demonstrate the consequences of trust and distrust in VIs. When VI endorsers are perceived as trustworthy, brands can strengthen their connection with audiences and boost purchase intentions. In addition, VIs can generate higher consumer engagement on social media platforms effectively and efficiently, leading to positive electronic word-of-mouth. On the other hand, when VIs fail to build trust with consumers, they may be perceived as less authentic, which reduces purchase behavior. When their non-human nature is revealed, VIs tend to be less persuasive in influencing consumer attitudes.

Finally, this study develops an integrated theoretical framework to explain the formation of trust and distrust and their impact on consumer actions. The Dual-Pathways Trust Framework shows the antecedents and consequences of trust, as well as all influencing factors in the trust formation process, providing a solid foundation for future research in the VIs field.

Chapter 5: Discussion and limitation of the research

5.1: Theoretical Framework: Dual Pathways to Trust and Distrust

This research provides insights into identifying factors that influence consumers' trust in VIs. Drawing on previous studies in the VI context, it develops a dual-pathway theoretical model that illustrates the two routes to two contrasting outcomes: Trust and Distrust. The study further identifies the antecedent conditions and the outcomes of VIs trust or distrust creation. A key perspective related to the systematic literature review, is that the existing research on brand crisis and brand legitimacy mainly relies on traditional theories related SMIs, while there has been relatively little progress in developing new theoretical models specifically focused on VIs.

Compared with traditional theoretical model, the dual-pathway model advances the literature on VIs by integrating trust and distrust mechanisms within a single framework. Unlike CASA (Reeves & Nass, 1996), which focuses on how consumers apply social norms to non-human agents, this model captures parallel and potentially simultaneous trust and distrust processes. Factors such as anthropomorphism, authenticity, and congruence can foster trust or provoke distrust, depending on the context and intensity of their expression. In contrast to the source credibility model, which treats trust as a straightforward function of expertise and attractiveness, the dual-pathway model highlights moderators, including transparency, congruence, and platform norms, which can strengthen, weaken, or even reverse the effects of key antecedents on trust and distrust. While trust transfer theory focuses on trust spillovers between entities, the dual-pathway model distinguishes the cognitive and emotional processes underlying consumers' evaluations of VIs and their associated brands. The dual-pathway model enables researchers to predict situations where trust and distrust coexist, and apply the framework broadly to AI communication contexts.

Regarding the theories applied by researchers, the majority of studies ($n = 45$) utilized classical theories in the context of VIs. Among these studies, the Uncanny Valley theory was the most frequently used ($n = 23$), followed by anthropomorphism ($n = 11$), source credibility theory ($n = 10$), and parasocial relationship theory ($n = 8$). Other theories, such as trust transfer theory, technology acceptance theory, and social distance theory, were applied only minimally (once or twice) in prior research either. This limited theoretical diversity in VI research studies highlights a significant gap in developing new theoretical models to explore how VIs build trust with consumers, integrating the factors and outcomes associated with consumers' trust in VIs..

To address the theoretical gap, the Dual-Pathway Trust Model builds on prior research in influencer and AI trust while extending existing frameworks in the VIs field. Unlike traditional models, it distinguishes between trust and distrust, treating them as separate but interrelated processes. The model also identifies both intrinsic and extrinsic antecedents for each pathway, specifying the factors that uniquely influence trust versus distrust toward VIs. By

integrating cognitive and affective routes, it explains how these antecedents shape consumer trust and distrust in VIs. Overall, the Dual-Pathway Trust Model not only advances traditional trust theories for the VI context but also provides a more comprehensive understanding of trust formation, demonstrating the model's originality and theoretical contribution.

As a result, this study examines the antecedents and consequences of how VI influence consumer trust and develops a dual-pathway theoretical framework. The new framework integrates variables influencing consumers' trust in VIs along with the changes in consumer behavior that result from the formation of trust or distrust, helping scholars understand the relationships among these variables and facilitating further research.

5.2: The factors leading to Trust & Distrust

This study explores various factors that influence trust and distrust in VIs, including both psychological and contextual dimensions. However, it does not empirically test or confirm these roles, which would require quantitative analysis beyond the scope of this study. Regarding factors that lead to consumer trust in VIs, most studies have utilized anthropomorphism as a key theory to explain why VIs appeal to audiences, as their human-like physical appearance helps reduce skepticism about their non-human nature and fosters trust between VIs and consumers. Researcher highlights that VIs' content creation flexibility can enhance their perceived similarity to human beings, leading to trust between consumers and VIs (Gerlich, 2023). At the same time, the narrative style used in VIs' content affects their perceived warmth, which subsequently impacts their source credibility and the level of trust consumers have toward them (Wang, Han, Kandampully, & Lu, 2025; Liu, Ye, & Yu, 2024; Wang & Zhang, 2025). Furthermore, congruencies between influencers and products are viewed as a crucial factor in building consumer trust in VIs. Scholars found that different types of VIs influence consumer trust in distinct ways (Wang and Zhang, 2025). Product-independent VIs tend to generate higher emotional trust, while product-dependent VIs foster greater cognitive trust.

Regarding factors that affect consumer trust in VIs, language style, narrative style, and influencer type have been shown to play important roles (Wang, B., Han, Kandampully, & Lu, 2025; Liu, Ye, & Yu, 2024; Wang, X., & Zhang, 2025). Some researchers find that high-arousing language tends to be more persuasive when used by VIs, while low-arousing language is more effective for SMIs (Wang, Han, Kandampully, and Lu, 2025). The highly arousing language style enhances trust in the product, which further encourages purchase intentions. In addition, other researchers show that task-oriented language style strengthens the effect of product-dependent VIs on consumer trust by building both cognitive and emotional trust (Wang and Zhang, 2025). In contrast, social-oriented language better supports product-independent VIs in fostering trust and purchase intention through emotional engagement. Meanwhile, narrative style also matters, researchers demonstrate that well-designed narratives,

whether linear or non-linear, can help VIs establish parasocial interactions with consumers, which in turn strengthen trust and positive attitudes toward the promoted brand (Liu, Ye, and Yu, 2024). Furthermore, scholars find that micro-VIs, with smaller but more engaged follower communities, tend to create stronger trust compared to macro-VIs, similar to findings in SMIs research (Kim et al., 2025). Overall, these factors reveal that consumer trust in VIs depends not only on the influencers' attributes but also on how language style, narrative, and influencer type align with consumer preferences and expectations.

Context factors significantly influence consumer trust in VIs, with variations observed between different communication environments and message purposes. Scholars compare trust levels toward VIs in non-profit and for-profit messaging contexts, finding that VIs enjoy higher source credibility and trust in non-profit settings, performing oppositely to SMIs (Kim and Wang, 2024). However, in for-profit contexts, consumers tend to trust human-like VIs less, viewing them similarly to animated VIs with lower trustworthiness. This suggests that the purpose behind the messaging shapes how consumers respond to VIs. Furthermore, research highlights differences in societal acceptance and trust toward VIs across social media and business contexts (Gerlich, 2024). After disclosing their virtual nature, VIs are more readily accepted and trusted within social media environments, where interactive engagement fosters trust over time. While in the public context, trust tends to be lower. Interestingly, transparency about the digital nature of VIs can increase trust in professional environments, emphasizing the role of trust disclosure in consumer acceptance. These findings underscore the importance of context in shaping consumer attitudes, revealing that trust in VIs is deeply affected by where and how they communicate, as well as by the level of perceived transparency.

5.3: Pathway to Distrust in VIs

In terms of factors contributing to consumers' distrust in VI, several studies have identified the non-human nature of VIs as a crucial source of skepticism. Muniz et al. (2024) found that disclosing the artificial identity of VIs diminishes perceptions of their human-like qualities, leading to uncanny valley effects and lower credibility, which subsequently reduce trust in the brands they endorse. Similarly, the inability of VIs to build strong parasocial relationships limits their capacity to foster trust with audiences, as parasocial connections are one of the key factors of consumer loyalty and brand perception (Dondapati & Dehury, 2024; Sands et al., 2022). Moreover, the lack of authentic emotional cues in VIs' communication hinders both cognitive and emotional trust, as consumers perceive their expressions as unnatural and disconnected from genuine human experience (Goel & Garg, 2025). Researchers further observed that low perceived warmth and greater social distance contribute to difficulties in establishing authentic and trusting relationships between VIs and their followers (Wan and Jiang, 2023). Additionally, the absence of direct personal experiences with products reinforces consumer distrust, since testimonials and lived experiences are often essential in building credibility and emotional resonance (Hidayat et al., 2024). Furthermore,

VIs face limitations in delivering sensory experiences, particularly those requiring proximal cues such as touch or taste, which reduces their effectiveness in fostering trust in product endorsements (Zhou et al., 2024; Deng et al., 2024). Scholars also noted that the lack of perceived autonomy and independence among VIs can further weaken consumer trust, as audiences view VIs as controlled marketing tools rather than authentic, independent entities (Laszkiewicz & Kalinska-Kula, 2023). Collectively, these factors illustrate the multifaceted challenges VIs face in building trust, underlining the importance of authenticity, emotional connection, and human-like presence in influencer marketing.

Technological familiarity plays a significant role in affecting consumer distrust in VIs. Scholars found that when consumers lack sufficient knowledge about digital technologies, they tend to perceive VIs as less warm and engaging than SMIs (Wan and Jiang, 2023), which ultimately weakens trust. Similarly, researchers observed that individuals with prior experience in the metaverse also demonstrate low levels of trust in VIs (Haikel-Elsabeh, 2023). These consumers often prefer SMIs due to the perceived lack of similarity, attractiveness, and authenticity in VIs. On the contrary, consumers without metaverse experience showed greater openness toward VIs in certain product contexts, although they still exhibited skepticism about the trustworthiness of VIs and considered them as brand-controlled and lacking autonomy. Another important factor is sponsorship disclosure. Researchers found that while VIs can enhance consumer engagement and purchase intention, their perceived trustworthiness declines when sponsorship has been exposed (Kim et al., 2025). This suggests that transparency may reduce consumer trust when VIs are perceived as a commercial tool. Together, these findings indicate that technological experience, platform familiarity, and sponsorship disclosure can shape how consumers assess and respond to VIs, particularly in terms of trust and authenticity.

In terms of factors that influence consumer distrust in VIs, the environment in which VIs appear plays a crucial role. Scholars investigated how different social contexts affect trust in VIs and found that consumers tend to exhibit lower trust toward VIs when they are depicted in real-world environments (Qu et al., 2025). This decline in trust becomes even more pronounced when a VI is shown alongside a human companion, possibly due to heightened perceptions of the VI's artificial nature in contrast to real people. Conversely, when VIs appear with other virtual agents rather than humans, the negative effect on trust diminishes. In such settings, consumers may extend trust toward VIs to a degree comparable to that placed in SMIs, suggesting that contextual alignment between VIs and their surroundings can help mitigate consumer skepticism. These findings highlight the importance of carefully considering the social and visual context in which VIs are presented to maintain or enhance consumer trust.

5.4: Suggestion - direction for future research

5.4.1 New theoretical models targeted at VIs

Although theories like anthropomorphism, CASA, and the Uncanny Valley play a crucial role in VI research, some researchers have also incorporated concepts such as parasocial relationships, trust transfer, source credibility, and social distance. Nevertheless, new theoretical frameworks are needed to further explore how VIs build trust and influence consumer behavior. For example, scholars made an important contribution to developing the conceptual model of VI acceptance. The authors integrate and extend two theoretical frameworks, anthropomorphism and technology acceptance theory, developing a new model examining VIs (Feng et al., 2024).

5.4.2 Interaction between antecedents

While prior studies have examined individual antecedents of trust and distrust in virtual influencers (VIs), the synthesis in this review reveals that most research has treated these factors in isolation. Future research could adopt integrative approaches that examine how multiple antecedents interact simultaneously within real-world communication environments. For example, studies could investigate how anthropomorphic design interacts with message consistency or sponsorship transparency to jointly influence trust. Similarly, experimental and field studies could be designed to capture potential trade-offs between intrinsic and extrinsic cues when they are presented together. Another promising direction lies in exploring temporal and adaptive dynamics. The reviewed literature predominantly employs cross-sectional designs, leaving open questions about how trust or distrust evolves over time as audiences repeatedly interact with VIs. Longitudinal or panel-based research could track shifts in perceptions as familiarity grows, new technologies emerge, or disclosure practices change. This would be especially relevant in contexts where initial novelty effects wear off, revealing more stable consumer attitudes toward VIs.

5.4.3 Cultural impact on VI trusts needs further exploration

According to previous research, the cultural difference between American and Brazilian consumers may have impacts on people's perception of VIs, leading to different consumer responses (Muniz, 2024). The results indicated that when consumers were informed of the VIs' non-human nature, both American and Brazilian consumers experienced discomfort, which led to a decrease in their perceived anthropomorphism and credibility of the VIs. Although the distrust in VIs causes negative impacts on the brand trust for American audiences, this effect was not significant in influencing Brazilian consumers' trust in brands endorsed by VIs. In contrast to the U.S., Brazilian consumers did not rely on VIs' lower perceived anthropomorphism or credibility when evaluating brands. The authors offer an explanation of this phenomenon, suggesting that collectivism and individualism may lead to differences between consumers in the two countries.

This study highlights the importance of considering cultural influences on how VIs shape consumers' perceptions and purchase behaviors. Given that perceptions of anthropomorphism, authenticity, and parasocial relationships may differ significantly across cultural backgrounds, comparative cross-country studies could provide valuable insights into whether the same trust and distrust mechanisms operate universally. It suggests that the trust or distrust consumers place in VIs may not always transfer to the endorsed products, depending on cultural contexts. Therefore, future research should explore a broader range of cultural factors beyond just collectivism and individualism to better understand their role in the trust transfer process across different countries.

5.4.4: VIs' effects in another Context

Current studies focus on employing VIs as endorsers, especially in the luxury industry, as VIs are generally perceived to have the ability to convey distal experiences similarly to SMIs. There is a growing scholarly interest in identifying new opportunities for employing VIs in diverse industries and contexts beyond those currently studied.

For instance, some researchers suggest that the recreation industry may emerge as a key context in which VIs can be effectively utilized (Dabiran et al., 2024). Although current studies have offered limited exploration of VIs in gaming and recreation, it is noteworthy that discussions about VIs often intersect with conversations about gaming. It is further indicated that VIs may have a similar target audience to gaming. Furthermore, as players often separate their satisfaction with gameplay mechanics from their feelings toward game characters, this highlights an opportunity for VIs to serve as effective alternatives, with customizable personas that can avoid the negative attitudes and discomfort associated with game characters. Future research could examine sector-specific contexts (e.g., fashion, gaming, education) to determine whether certain antecedents carry more weight in particular industries or audience segments.

Technological change represents another fertile research avenue. As generative AI, real-time rendering, and deep learning-driven emotional modelling advance, it will be important to investigate whether the identified distrust triggers—such as sensory limitations or perceived lack of genuine experience—remain relevant. Future research could also examine how these technological improvements interact with ethical concerns, disclosure regulations, and evolving consumer expectations.

Finally, while the literature has documented brand-related outcomes of trust and distrust, little is known about downstream behavioural and social effects. Future studies could investigate how trust in VIs influences not only purchase intentions but also brand advocacy, online community formation, and resistance to competing messages. Similarly, research could explore the resilience of VI–consumer relationships in the face of crises, scandals, or technological failures, thereby testing the robustness of the dual-pathways model in high-risk scenarios.

5.5: Threats to Validity and Robustness of the Synthesis

While this dissertation provides an integrated conceptual synthesis of how virtual influencers foster consumer trust, several threats to validity should be acknowledged.

First, selection bias may exist, as the study relied primarily on English-language and Scopus-indexed articles, potentially overlooking relevant non-English or regional studies. This focus potentially excludes relevant non-English or region-specific studies, which may offer distinct cultural or contextual insight into VI phenomena. Additionally, the main databases used in this research are Scopus and google scholars, the limited number of databases may have restricted the scope of retrieved literature, as relevant works indexed in other databases might have been overlooked.

Second, construct validity is a concern, given the inconsistent definitions of key constructs such as anthropomorphism, authenticity, and trust across studies and disciplines. These concepts are often shaped by the disciplinary lens-whether from marketing, psychology, communication or human-computer interaction etc. which complicates cross study comparisons and synthesis.

Third, confirmation and publication bias may have shaped the thematic synthesis. Studies reporting positive or significant effects of virtual influencers on trust are more frequently published than null or negative findings, reflecting a broader publication bias within the literature. This imbalance could distort the perceived strength of certain relations within the conceptual model.

Furthermore, the temporal and technological fragility of the synthesis must be acknowledged. The dynamics of VI are deeply embedded in the platform-era evolutions, including : advanced inAI capabilities, \shifts in social media affordances and change audience expectations of digital authenticity. As these factors evolve rapidly the mechanisms and mediating relations proposed in the current conceptual framework may require continuous reevaluation.

Future research could perform sensitivity analyses to strengthen the generalizability of the findings. For instance by excluding studies focused solely on social media influencers or by comparing pre- and post-AI-generated influencer studies, to test the robustness of the conceptual framework.

5.6: Practical Implications

The study offers practical insights to help VIs developers and managers navigate the complexities involved in establishing effective marketing strategies within VI campaigns. The VI trust formation model can help marketers better understand how VIs can endorse brands effectively and shape consumer trust.

To effectively utilize VIs as a marketing tool, managers must understand the antecedents that can foster consumer trust. This study provides practical insights for advertisers and VIs managers considering the application of VIs in their marketing strategies. VIs can strengthen parasocial relationships with consumers through their highly human-like appearance and behavior on social media platforms, leading to greater trust in the products and brands they endorse. Current research generally suggests that VIs are becoming substitutes for SMIs. However, practitioners need to understand which variables influence consumer trust in VIs, what outcomes may result from this trust, and whether VIs are suitable for endorsing their specific products.

Furthermore, at the current stage, the findings demonstrate that VIs are perceived as less trustworthy than SMIs, while VIs with animated appearances have lower trust levels compared to human-like VIs. However, this result is limited by the current reality that VIs cannot perfectly mimic human physical appearance and behaviors. In the future, as AI technologies continue to develop, VIs may gain the ability to behave just like human. As a result, marketers should keep up with evolving technology and the emerging contexts in which VIs may be utilized.

Another important insight for brand managers is understanding the factors behind consumers' distrust in VIs marketing strategies. Beyond the Uncanny Valley effect, which has been examined in most previous studies, this article highlights the impact of factors beyond the functions of VIs. and consumer characteristics on the effectiveness of VIs. For instance, consumers with limited experience in technology may find it harder to build connections and trust with VIs (Wan & Jiang, 2023). The study shows the connections between the antecedents of distrust and their outcomes, helping managers avoid risks when utilizing VI.

According to the findings, it is recommended that VI developers prioritize designing VIs with highly human-like appearances to enhance the perceived warmth and trustworthiness of VIs. Existing research has demonstrated that VIs with detailed human-like features can strengthen brand value, leading to psychological closeness, increased trust, and improved consumer behavior.

Meanwhile, although previous research on disclosure has indicated the negative consequences of VIs' non-human nature, there are also studies suggesting that disclosing the non-human nature of VIs can mitigate these negative effects (Muniz, Stewart, & Magalhães, 2024). Future research should explore how disclosing VIs' non-human nature might positively influence consumer trust in certain contexts.

5.7: Limitations of the research

Although this systematic literature review offers valuable insights from previous studies and proposes directions for future research, it has several limitations that may inspire further reviews in the field of VIs. First, this study focuses on the relationship between VIs and consumer trust, drawing primarily from literature published in journals ranked between A and B levels according to the Australian Business Deans Council (ABDC) Journal Quality List. Future reviews could expand the scope by including sources from other recognized rankings such as Scopus, Web of Science (WoS), or other relevant databases to capture a broader range of studies. Although this approach ensures the quality of the reviewed literature, it inevitably limits the scope of the literature. To broaden the literature scope, researchers should consider incorporating a wider range of emerging journals and conference papers related to VIs. In the future, researchers could broaden the range of databases to address the gap (e.g., Scopus, Web of Science, Emerald Insight, and JSTOR) and diversify their sources, including books, conference proceedings, and journals.

As this is a systematic literature review focusing on the relationship between VIs and consumer trust, the current study provides a summary of relevant literature, theories, research methods, and key factors, covering antecedents, influencing factors, and outcomes. However, it does not resolve potential inconsistencies among these conceptual relationships, mainly because most research in this field is quantitative, and there is not enough qualitative data to examine how variables are connected.

In conclusion, this research provides a structured synthesis of current literature on VIs and consumer trust, identifying key antecedents such as perceived similarity, authenticity, and visual appeal. By adopting a systematic literature review research method, it clarifies how various characteristics of VIs shape consumer perceptions and behavioral responses. These insights contribute to a deeper understanding of the mechanisms underlying trust and distrust of VIs in digital environments. Future studies are encouraged to investigate the underlying mechanisms of trust or distrust in VIs with particular attention to different types of VIs, evolving AI-capabilities, and the role of consumer skepticism in shaping these perceptions.

Chapter 6: Conclusion

With the rise of VIs, it is essential for both scholars and practitioners to explore how VIs can more effectively endorse brands and products. Trust, as a key factor influencing consumers' purchasing and engagement behaviors, should be considered in VIs marketing. To fill the research gaps, this study focused on main questions: How do virtual influencers shape consumer trust, and through what mechanisms do these processes influence consumer behaviour? With following sub questions: (RQ1) What factors affect consumers' trust in VIs? (RQ2) What mechanisms behind the trust or distrust formation? (RQ3) How does trust or distrust influence consumer behavior? The findings which drawn from a systematic literature review of 97 high-quality papers, suggesting that trust and distrust in VIs are shaped by a range of factors influencing trust and distrust. Based on the findings, (RQ 4) the study introduces a dual-pathways theoretical model that helps clarify how consumer trust is built or eroded in VIs marketing.

This research developed a Dual-Pathways Model of Trust and Distrust in Virtual Influencers, revealing that these processes operate in parallel rather than as simple opposites. Trust is built through intrinsic factors such as anthropomorphism, emotional resonance, and creative content quality, alongside extrinsic factors like brand–VI congruence, message consistency, and source credibility. These drivers lead to positive outcomes including purchase intention, engagement, and brand attachment. In contrast, distrust arises from antecedents such as uncanny valley effects, poor emotional authenticity, over-commercialisation, and transparency mismanagement, resulting in reduced purchase intention, disengagement, and negative word-of-mouth. Notably, some attributes—particularly authenticity, anthropomorphism, and congruence—act as bivalent triggers, capable of fostering trust or distrust depending on context and consumer perception.

Theoretically, this research contributes to the current literature of VIs by highlighting the roles of anthropomorphism, language style, and parasocial connection in trust development, while the factors such as Uncanny Valley effects and non-human nature lead to consumer skepticism. According to findings, this study provides an understanding of how trust or distrust influence consumer behaviour changes. Demonstrates that trust and distrust are independent, parallel processes with distinct antecedents, mechanisms, and outcomes, challenging the traditional view of distrust as merely the absence of trust.

Practically, the Dual-Pathways Model provides actionable insights for marketers, brand managers, and platform designers aiming to maximise the effectiveness of VIs, while minimising the risks of distrust. Human-like traits should be applied in a balanced manner to enhance relatability without crossing into the uncanny valley, while strong brand–VI congruence in visual style, tone, and values can strengthen trust transfer. Transparency regarding a VI's artificial nature should be managed strategically, ensuring ethical disclosure without undermining immersion. Over-commercialisation should be avoided through careful moderation of sponsorship frequency and

intensity, and content should prioritise authenticity, creativity, responsiveness, and emotional resonance to sustain trust. In addition, platform algorithms should be leveraged to regulate exposure patterns, maintaining novelty and preventing consumer fatigue. By applying these principles, practitioners can design VI campaigns that actively foster trust while reducing the triggers of distrust, thereby supporting sustained consumer engagement.

While this study offers theoretical and practical contributions, several limitations should be acknowledged. First, the scope was limited to peer-reviewed, English-language literature, which may have excluded relevant insights from non-English studies or industry reports. Second, the Dual-Pathways Model is based on conceptual synthesis rather than primary empirical data, meaning its relationships and mechanisms require empirical validation. Third, the rapidly evolving nature of VI technology and consumer attitudes may affect the long-term applicability of some findings, as design trends, platform algorithms, and cultural norms continue to change. Recognising these limitations provides a foundation for refining the model.

Future research should empirically test the Dual-Pathways Model using both qualitative and quantitative methods, including longitudinal and experimental designs, to validate the proposed antecedents, mechanisms, and outcomes of trust and distrust in virtual influencers (VIs). Cross-cultural studies could explore how cultural norms, values, and platform preferences shape these processes, while longitudinal research could examine the evolution of trust and distrust over time, including mechanisms for trust repair after breaches. Further investigation is also needed into the role of platform algorithms in influencing VI visibility and consumer perceptions, as well as the effectiveness of hybrid campaigns combining human and virtual influencers. Finally, researchers should develop and evaluate ethical guidelines for sponsorship transparency and disclosure in AI-mediated marketing, ensuring consumer protection while maintaining campaign effectiveness.

Lastly, as digital environments increasingly blur the boundaries between the authentic and the artificial, the ability to manage both trust and distrust will become a defining factor in the sustainable, ethical, and effective use of VIs. By addressing both pathways simultaneously, brands and platforms can move beyond transactional interactions to cultivate meaningful, lasting relationships with consumers in an evolving digital marketplace.

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