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Conveyed by Artificial Authenticity? The Impact of Virtual Influencers on Brand Trust

A Quantitative Study on Consumer Perceptions

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ABSTRACT

This study examines brand trust in the context of virtual influencers. Based on a sample of 155 respondents, the research investigates the mediating effects of consumers' perceived authenticity and credibility of influencers in shaping brand trust. A between-subject experiment was conducted, where influencer type was manipulated in three surveys. Findings revealed that influencer type, whether a human, a human-like virtual influencer, or an anime-like virtual influencer, does not directly affect consumers' trust in brands. However, the study underscores the importance of consumers' perceived authenticity and credibility of influencers in positively affecting brand trust, offering insights for marketers on strategically leveraging influencers for desired brand trust. Consumers' perceived authenticity of a human-like virtual influencer was higher than for a human influencer and was fully mediating the effect of influencer type on brand trust, contrary to an anime-like where this was not a significant mediator. Furthermore, consumers' perceived credibility of virtual influencers fully mediated the level of consumers' trust in brands, highlighting the importance of this component. Authenticity, characterized by genuineness and alignment with intrinsic motivations, emerges as a critical driver of consumer trust. Similarly, credibility, encompassing trustworthiness, expertise, and attractiveness significantly influences brand trust. Aligning brand values and product fit with influencer type is highlighted as a strategic imperative, emphasizing the need for genuine relationships between brands and influencers to improve consumers' perceptions and trust in brands. The study is not free from limitations, including challenges of manipulating the experiment, and suggests future research to explore industry variability and a broader demographic. Overall, this research provides valuable insights into the evolving landscape of virtual influencers, offering practical recommendations for marketers and paving the way for further exploration into the complexity of brand trust in the digital age.

Keywords: *Brand trust, Authenticity, Credibility, Influencer marketing, Virtual influencers, Artificial intelligence, Anthropomorphism, Uncanny valley Theory*

1. Introduction

Many scholars have argued that trust is essential for establishing successful and rich brand-consumer relationships (Chaudhuri & Holbrook 2021; Molinillo, Ekinci & Japutra 2019; Rajavi, Kushwaha & Steenkamp 2019). According to Chaudhuri and Holbrook (2021), brand trust positively impacts both business performance and customer loyalty, as well as consumers' purchase intentions and beliefs in the brand to perform as it promises. Brand trust is a major objective in marketing and branding since it is a crucial element in relationship building (Delgado-Ballester 2004; Molinillo, Ekinci & Japutra 2019). One way for brands to build relationships with their consumers is through collaborations with influencers in their marketing activities (Lee & Eastin 2021). Brands' collaborations with influencers can positively affect both consumer attitudes and brand performance (Lee & Eastin 2021), and the strength of the relationship between the consumer and the influencer determines the level of trustworthiness of the influencer (Chung & Cho 2017). Since trust is such a major part of the interplay between brands and consumers, there is a need to further explore this topic.

Today's technological advancements allow for innovation, such as the incorporation of artificial intelligence (AI), virtual reality (VR), and augmented reality (AR) in marketing and social media (Wang 2021). Wang (2021) expresses that today's interactive marketing is being advanced through AI, and is the fastest-growing business and comprises the interconnected and conversable consumer, co-creating value with the different connected actors in the digital landscape and social media. One of these technological advancements has allowed the creation of so-called Virtual Influencers (VIs) which are artificially created humans that are gaining popularity in today's social media environment and act as famous influencers (Thomas & Fowler 2021). This raises questions about their perceived authenticity (Lou et al. 2023; Sands, Campbell, Plangger, & Ferraro 2022) and credibility among consumers (Jhawar, Kumar & Varshney 2023).

As authenticity (Ilicic & Webster 2014; Portal, Abratt & Bendixen 2019) and credibility (Lou & Yuan 2019) are fundamental aspects of the decision-making process and trustworthiness of brands, there is a need to explore the interplay between the increasing use of VIs, consumers' perceptions, and the effect it has on brand trust. Most research today has examined the perceived credibility and trust of influencers and VIs as such, or the trustworthiness of a brand itself. Less has been studied on how the collaboration between VIs and brands affects consumers' trust in the brand in question. Thus, a gap in understanding the perceived authenticity and credibility of VIs and how that affects brand trust in marketing research is identified. As Sands et al. (2022) highlight in their study, there is a need for further research regarding consumers' perceived authenticity of VIs, and what qualities such as authenticity and credibility make them successful or not (Appel, Grewal, Hadi, & Stephen 2020). It would allow for a deeper understanding of consumer perceptions as AI is increasingly present in our society, and in the design of VIs to keep up with this growing market.

Rasmussen (2021) states that VIs are the future of social media marketing with approximately three times higher engagement rates than human influencers. Additionally, VIs are a new phenomenon that is gaining visibility and attracting new and young consumer groups, they keep the brand at the forefront of technological advancements and offer stability with the brand ambassador (i.e. the face of the brand). This minimizes any potential scandals with human influencers that can threaten the brand image, putting the brand at risk (Rasmussen 2021). Furthermore, Appel et al. (2020) argue that VIs have no limitations as to humans who simply cannot be connected every second of the day due to the need to eat and sleep, and believe that VIs will only continue to advance in technology and grow in presence across social media. On the other hand, VIs are computer-based characters and can be seen as less trustworthy (Portal, Abratt & Bendixen 2019). The collaborations between brands and VIs can affect brand trust because brands are seen as authentic when having human-like characters (Sands et al. 2022), which is quite paradoxical to VIs as they are crafted through AI, and could therefore result in lower brand trust. Brands need to create innovative marketing strategies due to the increasingly competitive marketing landscape (Jhawar, Kumar & Varshney 2023), and several global brands have already implemented collaborations with VIs, giving more emphasis on the dynamics of VIs and their impact on consumer behavior. Porsche has established a collaboration with Chinese iMaker (Porsche Newsroom 2022) and partnered up with VIs such as the Japanese @imma.gram, who is also driving the virtual Porche Taycan (Ag 2022). In an online survey from 2022 with over 1000 American respondents ranging from the age of 18 to 55+ years, 58% were following a VI, and 35% stated that they had bought an item promoted by a VI (The Influencer Marketing Factory 2022). According to Garbin (2020) and Mutani (2022), the market for VIs was worth 4.6 billion dollars in 2018, having an expected compound annual growth rate of 26% by 2025. This is a huge market expansion, highlighting the importance of VIs as a means of marketing and business growth.

The proposed research delves into the phenomenon of VIs, and their gaining visibility and popularity on social media. This study aims to examine brand trust in the context of VIs and their perceived authenticity and credibility from a consumer perspective. To further deepen the research, the influencer type, such as human influencer, human-like VI (HVI), and anime-like VI (AVI), will be investigated to detect any potential differences in the perception of perceived authenticity and credibility of VIs, and the effect it has on brand trust. In summary, this research would bridge the gap between theory and practice by providing a deeper understanding of the role VIs play in shaping brand trust. The theoretical contributions would advance academic discussions with an insight into consumers' perception of authenticity and credibility regarding VIs and how this affects brand trust (Appel et al. 2020; Lou & Yuan 201; Portal, Abratt & Bendixen 2019; Sands et al. 2022). This is an important aspect since AI is only becoming more integral and advanced in our society. The practical implications would guide marketers in developing more trustworthy, and therefore effective, marketing strategies with VIs. It would also guide the design process for the creation of the most effective type of VI, such as human-like or anime-like when marketers incorporate this into the strategies. This would allow marketers to benefit from the growing billion-dollar

market and the advantages of using VIs in influencer marketing. The following research questions will guide the quantitative investigation of this research:

- How do different influencer types affect consumers' trust in brands?
- How do the perceived authenticity and credibility of virtual influencers affect brand trust?

2. Theoretical Framework & Literature Review

2.1 Brand Trust

With the increasing relationship marketing since the 1980s, trust has emerged as a pivotal element within the realm of branding (Delgado-Ballester 2004). Establishing brand trust is essential for fostering successful brand-consumer relationships and the primary objective in marketing is to cultivate strong connections between a brand and its consumers, which builds on trust (Molinillo, Ekinci & Japutra 2019). This will lead to customers recommending the brand and its products and services, and by surpassing a violation, the trust can be broken and hurt the relationship and future businesses with the brand. One factor influencing the strength of the brand-consumer relationship is the brand personality, which Aaker (1997, p. 347) defines as "the set of human characteristics associated with the brand". Therefore, a brand can be viewed as human-like or as a friend (Aaker, Fournier & Brasel 2004). Keller (1993) believes that the brand personality and the beliefs of consumers must be congruent for the relationship to be strong, which is also supported by Aaker (1999). In more recent research, Leckie, Dwivedi, and Johnson (2022) found that the congruence between the self and the brand positively impacts brand trust, aligning with previous research on brand-consumer congruence.

Chaudhuri and Holbrook (2001, p. 83) define brand trust as "*the willingness of the average consumer to rely on the ability of the brand to perform its stated function*". Thus, consumers trust brands to achieve what they promise to perform, which is a thoughtful cognitive process for consumers. Moreover, high brand trust has positive outcomes on the overall business and size of market share, due to that trust amplifies consumers' loyalty to the brand in question which increases their purchase frequency (Chaudhuri & Holbrook 2001). Similarly, Rajavi, Kushwaha, and Steenkamp (2019) argue that consumers' trust in brands affects overall brand performance and is a determining factor of the consumer mindset of brands. Eggers, O'Dwyer, Kraus, Vallaster, and Güldenberg (2013) believe that as part of brand trust, brand authenticity plays a role in determining the perceived brand trust of consumers. This belief is also supported by Portal, Abratt, and Bendixen (2019), Huang and Guo (2021), and Schallehn, Burmann, and Riley (2014), who argue that brand authenticity positively affects brand trust due to authentic brands carrying out what they promise and thus, staying true to themselves and consumers. This is, as aforementioned, also supported by Chaudhuri and

Holbrook (2001). Furthermore, successful brands are those that consumers perceive as authentic and have human-like characteristics (Portal, Abratt & Bendixen 2019).

There are other antecedents to brand trust that could be discussed. It has been found that there is a positive relationship between brand familiarity and brand trust (Dawar & Lei 2009). People are more positive towards familiar brands than unfamiliar ones since that helps them to reduce the time for processing information about new brands, which builds better brand trust (Ha, Pham & Le 2022). This is also supported by Akoglu and Özbek (2022), who found previous brand experience to positively impact brand trust among consumers. Another factor that contributes to brand trust is the emotional attachment consumers develop with the brand, where positive emotions strengthen consumers' trust in the brand in question (Bidmon 2017). Bidmon (2017) suggests that a way of building these connections is for brands to create communities and maintain positive emotions within these. As this research does not examine consumers' direct interactions with brands per se, but instead with influencers, brand familiarity, previous experience, or emotional attachment will not be included. Examining previous literature on brand trust and that, as aforementioned, authenticity and credibility strongly influence consumers' decision-making process and level of brand trust (Ilicic & Webster 2014; Lou & Yuan 2019; Portal et al. 2019), this research proposes that brand trust is affected by consumers' perceived authenticity and credibility in the context of influencer marketing.

2.2 Influencer Marketing and Virtual Influencers

Different marketing strategies of how to best convey a message have emerged and developed over time, from the use of traditional celebrity endorsement to influencer marketing. Lee and Eastin (2021) found that what differentiates influencers from celebrities is the relatability to the influencer, contrary to a celebrity. Also, Djafarova and Rushworth (2017), support this with their finding that influencers are more influential and credible than traditional celebrities. Influencers are famous for their activity on social media rather than for a specific occupation and are perceived as more relatable to consumers (Meyers 2017; Silva, Farias, Grigg & Barbosa 2020; Wang 2021). However onward, throughout this research, influencers, and thus VIs, will be viewed and measured similarly to celebrities and celebrity endorsement, which have been carried out in the same way by several researchers and seem to currently be the only scale to use for this purpose (Belanche, Casaló, Flavián & Ibáñez-Sánchez 2021; Jhawar, Kumar & Varshney 2023; Lou et al. 2023; Stein, Breves & Anders 2022).

The phenomena of VIs combine the aspects of influencer marketing and AI, and VIs are computer-based characters that, for some, are perceived as less trustworthy, but for others as equal to human influencers (Sands et al. 2022). There are different types of VIs, those that are very human-like in their design and attempt to mimic humans and human behavior as closely as feasible, and those that are less human-like and designed more as anime-like characters (Arsenyan & Mirowska 2021). According to Molenaar (2023) and VirtualHumans (n.d.), some of the most popular women VIs are (1) the Brazilian Lu do Magalu, @magazineluiza,

with 6.7 million followers on Instagram, (2) the Brazilian-American Michela Sousa aka Lil Mequela, @lilmequela, with 2.6 million followers on Instagram, (3) the Japanese Imma, @immagram, with 393 thousand followers, (4) the English Shudu Gram, @shudu.gram, the first digital supermodel with 240 thousand followers on Instagram, and, (5) the anime-like German Noonoouri, @noonoouri, with 437 thousand followers on Instagram. VIs act as "normal" human influencers on social media and are often created by large media agencies or programmers (Stein, Breves & Anders 2022). They are precisely designed, have their own defined personality, and create and post the same type of content as human influencers. VIs can act as either "regular" people, or be experts in certain fields such as fashion on Instagram or, what is known as a vTuber, for entertainment and streaming on YouTube (Stein, Breves & Anders 2022).

To create long-term relationships with followers, influencers try to develop deep psychological bonds (Belanche et al. 2021). Followers' perceptions of influencers are based on the content and promotions the influencer posts about products and brands. When there is a mutual interest between the influencer and their followers, the strength of the relationship is enhanced (Belanche et al. 2021). In their research, Lou et al. (2023) argue that people, in general, follow VIs to the same extent as human influencers and that most have bought a product recommended by an influencer due to their perceived strong relationship and trustworthiness. On the contrary, people tend to distrust VIs due to their lack of authenticity, and weaker relationships, and perceive them as fake since they post fabricated "human-like" stories. Similarly, Sands et al. (2022) believe VIs not to be as relatable as human influencers and are perceived to be socially distant, thus, providing weaker relationships. This would be problematic due to relatable influencers usually being more successful than those who are not. Furthermore, Lou et al. (2023) argue that one factor that contributes to the perception of VIs to be inauthentic is the impossibility of them actually trying out a product, especially if the product is a physical one. What could be perceived as more trustworthy is if the VI recommends something virtual, like music, that fits with the expertise and image of the VI. However, most people do believe that the use of VIs can help boost brands' awareness and add to the brand image to be, for example, trendy and up-to-date with technology (Lou et al. 2023).

2.2.1 Anthropomorphism & The Uncanny Valley Theory

Huang and Rust (2021, p. 31) conceptualize AI as "*the use of computational machinery to emulate capabilities inherent in humans, such as doing physical or mechanical tasks, thinking, and feeling*", which take the shape either virtually or as robots. The interactions with robots and AI in people's daily lives are increasing, and emotions toward robots play a big role in the willingness to interact with them (Smith, Sherrin, Fraune & Šabanović 2020). Today, critical discussion about the social and ethical implications of AI and technical problems possibly arising from it is detrimental (Hrastinski, Olofsson, Arkenback, Ekström & Ericsson 2019). People are questioning AI as they previously did with robots; "will it surpass human intelligence and trick humans?". Nakada, Kavathatzopoulos, and Asai (2021) argue that interactions with robots can give comfort or anxiety in different ways, but mainly people

want robots to solve their problems without them even having to think, although humans are the creators and therefore the ones coming up with the solutions that the robots later display. On the other hand, Panjrath and Tiwari (2021) argue that AI-powered VIs have the ability to reduce people's anxiety that otherwise could occur with human influencers. As seen throughout the literature review and theoretical framework, the current research shows contradictory results. This could be due to the fact that VIs, as a marketing tool, are a new phenomenon and have not yet been thoroughly examined.

People tend to ascribe human attributes and characteristics, both psychological and physical, to robots when being exposed to them in the marketplace, which is the phenomenon of Anthropomorphism (Kim, Schmitt & Thalmann 2019). Making robots and AI technology, like VIs, appear human-like is, according to Han and Yang (2018), crucial to driving people to develop relationships and be willing to interact with them. They also highlight the need to design robots with physical and psychological human traits to keep customer satisfaction and interaction high. Dabiran, Farivar, Wang, and Grant (2024) found that physical anthropomorphism did not affect the perceived credibility of VIs, but what affected this was instead psychological anthropomorphism such as their moral and cognitive behavior. However, Kim, Schmitt, and Thalmann (2019) found that when people face an anthropomorphized robot, their perception of the robot's warmth negatively affects their attitudes toward the robot. That is, the more warmth the robot portrays, the more negative attitudes people get, which sounds contradictory. This is due to the phenomenon of the Uncanny Valley Theory, a feeling of unease for the robot or artificial entity when it gets too close to humans in its appearance and fictional personal traits. Additionally, Kim, Schmitt, and Thalmann (2019) state that, especially, giving a robot a human-like mind, induces people's feeling of uncanniness. As aforementioned, Lou et al. (2023) found that when people know that the VI they see is, in fact, artificially created, they tend to perceive the VI as inauthentic and distrust the VI, due to their fabricated "human-like" stories. Following research on influencer marketing, Anthropomorphism, and The Uncanny Valley Theory, the first hypothesis is as proposed:

H1: *Influencer type has a direct effect on brand trust*

2.3 Authenticity

The level of trust can be increased with perceived authenticity (Schallehn, Burmann & Riley 2014). Regardless of one's goals, consumers seek the same three characteristics of "real", "true", and "genuine", which make up the concept of authenticity (Beverland & Farrelly 2010). Beverland and Farrelly (2010) believe that authenticity can mean different things to different people and is a process of interpretation that varies depending on the personal goals of the consumer. Thus, one consumer can perceive a brand or an object to be authentic, and another to perceive the same brand or object as inauthentic. Overall, an authentic brand is often considered to have high values and care for its consumers (Morhart, Malär, Guèvremont, Girardin & Grohmann 2015). An authentic brand also has its identity clear,

keeps its brand promises, and is not attributed to external forces (Schallehn, Burmann & Riley 2014). Interactions with authentic individuals add trustworthiness in terms of what they have demonstrated in past behavior and will make them more likely to continue behaving predictably in the future. This reduces any risk, and thus, fosters better trust, which makes the relationship more manageable (Schallehn, Burmann & Riley 2014).

> **H2:** *Consumers' perceived authenticity of an influencer is positively affecting brand trust*

2.3.1 Self-Determination Theory

According to Moulard, Garrity, and Rice (2015, p. 175), influencers', previously celebrities', authenticity is defined as "the perception that a celebrity behaves according to his or her true self", and thus, being genuine, original, and true to oneself's feelings and beliefs (Ilicic & Webster 2016; Moulard, Garrity & Rice 2015). Consumers perceive influencers as authentic when the behaviors of the influencers align with the influencers' values and, indeed, stay true to themselves (Ilicic & Webster 2016). This view of authenticity stemming from an individual being true to oneself, is in line with the Self-Determination Theory (SDT) (Ryan & Deci 2000). Ryan and Deci (2000) propose, according to the SDT, that authenticity is determined by an individual behaving according to its intrinsic motivations, and thus, being true to the self. Behaving in an intrinsically motivated manner is acting in such a way that is truly satisfying the inner desires and beliefs. In contrast, if an individual behaves following extrinsic motivation, this would result in actions only satisfying external desires, or acting to gain an external reward such as compensation, which is common in influencer marketing (Giardino 2021). Thus, intrinsically motivated behavior is perceived as authentic, whereas extrinsically motivated behavior is deemed inauthentic (Ryan & Deci 2000). Also, Audrezet, De Kerviler & Moulard (2020) support this view and argue that influencers behave authentically when they collaborate with brands that align with their interests and beliefs. This makes them behave in an intrinsically motivated manner when creating content to promote.

> **H3:** *The perceived authenticity of an influencer is mediating the effect of influencer type on brand trust*

2.4 Credibility

Viviani and Pasi (2017) argue that credibility is an element that is perceived by individuals, who can assess the level of credibility of sources of information they come in contact with. The concept of credibility has been investigated over many years, and is often linked to trustworthiness, reliability, and expertise, and can measure to what extent users think sources are truthful, unbiased, and accurate (Viviani & Pasi 2017). The trustworthiness of an influencer positively impacts brand credibility (Hussain 2020). Therefore, it is effective for brands to collaborate with influencers since they are perceived as relatable and credible by

consumers and have a positive return on investment for brands (Lee & Eastin 2021). Consumers' perceived credibility of an influencer positively affects their attitudes toward the influencer in question, and in turn, the brand being promoted (Belanche et al. 2021). A credible influencer will push consumers to react to the content shared and direct their behavior in a desired way such as continuing to follow the influencer or doing as they propose, as well as developing positive attitudes toward the brand being promoted. According to Belanche et al. (2021), one crucial factor that determines the level of perceived credibility is the fit between the influencer's image or field of expertise and the product or brand they promoted. If these align with one another, the influencer is viewed as an expert and thus, perceived as more credible. What could instead decrease the level of credibility is if the influencer posts about something that does not fit as well with its image (Belanche et al. 2021). This could make consumers believe the influencer only posts for commercial monetary benefits and therefore be biased in their recommendations, thus, decreasing their credibility.

Previous research on this topic has also examined consumers' perceived parasocial relationship with VIs and the effect of disclosure vs. non-disclosure of VIs' origin and emotions of their content (Lim & Lee 2023). They found that when consumers are exposed to a VI's origin, such as that they are artificially designed, they perceive the VI as less human, and vice versa. Furthermore, their study aimed to investigate how positive and negative content shared by VIs affects the parasocial relationship and perceived credibility. When the origin was disclosed, sharing positive content positively affected the relationship and perceived credibility, and negative content had a negative effect. The outcome of the study indicates that when VIs try to connect with consumers through negative stories, like sadness or that something upsetting happened to them, it damages the relationship and perceived credibility (Lim & Lee 2023). This is caused by uncanniness, such as the feeling of unease when robots and VIs are human-like (Kim, Schmitt & Thalmann 2019). On the contrary, positive content enhances the relationship and credibility (Lim & Lee 2023).

> **H4:** *Consumers' perceived credibility of an influencer is positively affecting brand trust*

2.4.1 Source Credibility Theory

The Source Credibility Theory (SCT) has been widely studied for many years. It is a theory to determine the persuasion of celebrities (McCracken 1989; Ohanian 1990), nowadays influencers. As consumers actively take part in the "influencer world" and perceive them as possessing symbolic meanings, influencers' leadership status should be used also in marketing and business (McCracken 1989). SCT consists of the perceived trustworthiness, expertise, and attractiveness of the celebrity (Ohanian 1990), i.e. influencer. Lou and Yuan (2019), Djafarova and Rushworth (2017), and Wiedmann and Mettenheim (2021) agree with this viewpoint, emphasizing that expertise and attractiveness positively influence perceived credibility. Wiedmann and Mettenheim (2021) found attractiveness to have the second largest impact after trustworthiness, and found it also to be a determining factor in consumers' trust

in brands. Additionally, followers who perceive influencers as credible will also perceive their content to be more trustworthy. Thus, the brand whose products, or overall brand, is promoted by the influencer would face positive outcomes such as enhanced brand awareness and increased purchase intentions (Lou & Yuan 2019). Also, Jhawar, Kumar & Varshney (2023) posit that source credibility is a determining factor in consumers' acceptance of VIs. Due to previous research on credibility, the hypothesis is as follows:

> **H5:** *The perceived credibility of an influencer is mediating the effect of influencer type on brand trust*

Conceptual Research Model

We propose that the level of brand trust is mainly influenced by influencer type, with possible mediating effects through two dimensions when collaborating with an influencer; perceived authenticity (e.g., Busser & Shulga 2019; Eggers et al. 2013; Portal, Abratt & Bendixen 2019) and perceived credibility (e.g., Lou & Yuan 2019; Ohanian, 1990). Furthermore, due to self-brand congruence in brand-consumer relationships and trust (Aaker 1999; Aaker, Fournier & Brasel 2004; Leckie, Dwivedi & Johnson 2022), this research will include the covariate *fashion interest* of the respondents to see any potential explanations of this on brand trust, as this research examines brand trust in the context of fashion. Due to previous research, the proposed research model is as follows:

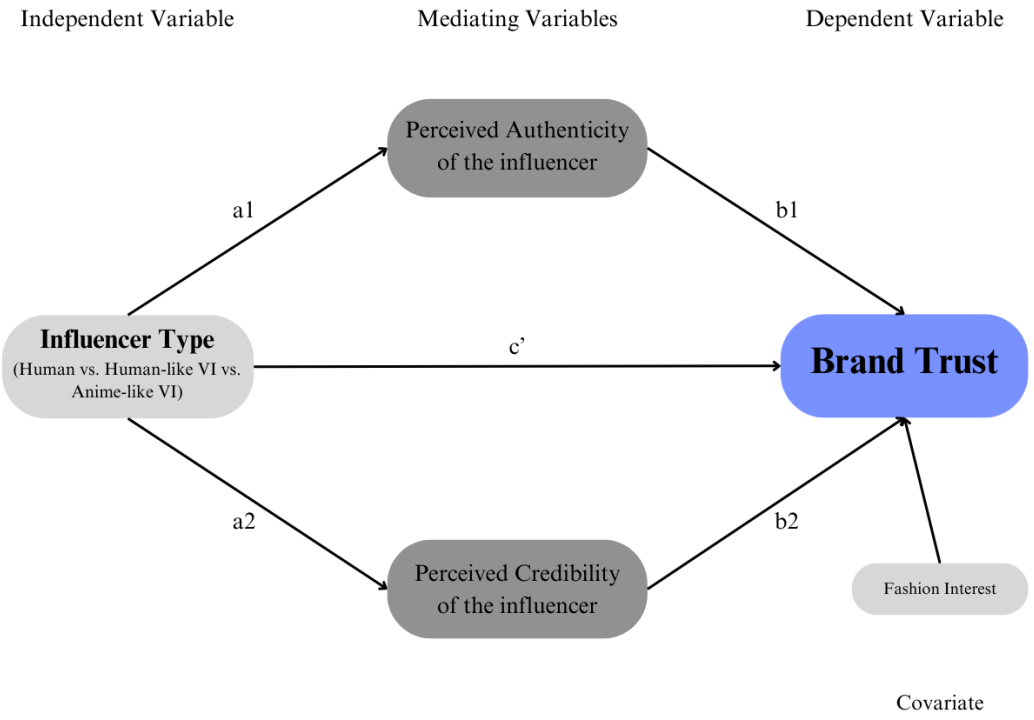

Figure 1. Research Model designed by the authors

Hypotheses Overview

H1: *Influencer type has a direct effect on brand trust (c')*

H2: *Consumers' perceived authenticity of an influencer is positively affecting brand trust (b1)*

H3: *The perceived authenticity of an influencer is mediating the effect of influencer type on brand trust (a1b1)*

H4: *Consumers' perceived credibility of an influencer is positively affecting brand trust (b2)*

H5: *The perceived credibility of an influencer is mediating the effect of influencer type on brand trust (a2b2)*

Figure 2. Hypotheses Overview

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3. Methodology

3.1 Approach & Objective

To explore the effect of the independent variable influencer type (X) on the dependent variable brand trust (Y), and the potential mediating effects of perceived authenticity (M1) and credibility (M2) of an influencer, a quantitative experimental approach was chosen (Geuens & De Pelsmacker 2017; Hair, Black, Babin & Anderson 2019). The objective is twofold, hence, the first part investigated how consumers perceive the authenticity and credibility of VIs, followed by the second part that examined the impact of these perceptions on brand trust. Due to the existing varieties among influencers (i.e. human), and in the design of VIs (i.e. human-like and anime-like), this research will include all three types to see any potential differences in consumers' responses to influencers and VIs and how that affects the level of brand trust. Consumers' perceived authenticity and credibility of influencers were added as mediating variables to the test. This was added to detect potential mediating effects in the relationship between the independent and dependent variables, as a mediating variable explains the relationship between the two, and is important in experimental research for building new theories (Geuens & De Pelsmacker 2017; Hayes 2014).

An experimental study was conducted for several reasons, such as an objective measurement where the collection of numerical data enables an objective analysis of consumer perceptions and a conscientious statistical analysis of the relationships and patterns of the variables chosen; the authenticity of the influencers, the credibility of the influencers, and brand trust (Hair et al. 2019). Hair et al. (2019) argue that this analysis is efficient and makes it possible to explore multiple variables and hypotheses, and is particularly popular in social science and business to explore consumer responses to different stimuli. Since only one variable was manipulated in each of the tests, a between-subject design was developed (Pany & Reckers 1987). Additionally, a between-subject design was the most suitable approach to not make it obvious to respondents what the survey measured (Geuens & De Pelsmacker 2017).

3.2 Participants & Data Collection

The participants of the study were obtained from the University of Gothenburg, targeting a student demographic to align with the VIs and their consumer group. The students were relatively homogenous because of their similar age, level of education, and lifestyle. Some scholars argue that students are too different in their behavior from "regular" people and thus, are not a good representation of the population as a whole. However, McDermott (2011) argues that students do not differ significantly from the broader population. These differences are believed to be too small to deem students as insufficient and therefore are approved to participate (Geuens & De Pelsmacker 2017). Additionally, according to Geuens and De Pelsmacker (2017), as long as there is a reasonable fit and relevance between the participants and what is being tested, the sample is accepted.

An online survey was created since it offers the benefits of being time-efficient and cost-effective (Duffy, Smith, Terhanian & Bremer 2005; Geuens & De Pelsmacker 2017). It also gives the participants a chance to answer the questions at their own pace and, according to Krumpal (2013), it also helps to generate honest answers without an interviewer being present. The surveys were created in Qualtrix and were distributed via a QR code to approximately 200 students during an in-class session at the University of Gothenburg, and 155 responses were recorded. The students were randomly and evenly assigned one of the three surveys representing one influencer type each. The group presented with a human influencer consists of 52 respondents, the group presented with an HVI consists of 53, and lastly, the group presented with an AVI consists of 50 respondents. Randomization helps to ensure that any differences observed between groups can be attributed to the experimental manipulation rather than pre-existing differences between participants (Geuens & De Pelsmacker 2017). To respect ethical considerations, the study adheres to ethical guidelines such as gathering consent from participants, minimizing any risks associated with participation, and ensuring the confidentiality of the respondents (Geuens & De Pelsmacker 2017).

3.3 Experiment Design

The experiment consisted of three manipulations (see Appendix 1–3), i.e. treatments (Hair et al. 2019), where all influencers were allegedly collaborating with a big multinational fashion and apparel brand. The brand was chosen not to be named to avoid biased connotations (Geuens & De Pelsmacker 2017). One manipulation had a visual representation of a human influencer, one with an HVI, and one with an AVI. All manipulations were combined with the same written description, with the exception that the influencer was stated to be only an influencer, a virtual one, or an anime-like virtual one. As advised by Madsen and Nielsen (2009), the manipulations were designed as persona scenarios through storytelling, to gather the perceptions of the participants and get a better understanding of their perceived authenticity and credibility of the influencers. The experiment with a human influencer acts as a counterpart to the VIs to establish a baseline of the perception of influencer authenticity

and credibility, of influencers as such, and the effect it has on brand trust. After being shown the manipulation, the respondents were asked to answer questions in the survey about the VIs' authenticity and credibility, and lastly, questions about brand trust.

Control variables were used to control what could influence the outcome and improve the internal validity by regulating the influence of extraneous variables (Bhandari 2023). This helped to abstain from research bias and improve relationships between the variables used which ensured that the results were solely caused by the experimental manipulation (Bhandari 2023). The control variables used in this research ensured that the respondent is a *frequent social media user*, along with a question about their *gender*.

At the end of the survey, a manipulation check was included to ensure the validity of the experiment (Kotzian, Stoeber, Hoos & Weissenberger 2020), and to check that the manipulations were effective (Allen 2017; Geuens & De Pelsmacker 2017). It can be a question worded directly about the manipulation, to test if the respondents perceived it in the desired way (Allen 2017), which was the approach in this research. To test the manipulations, three statements were included for the respondent to rate their perception on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree); "I perceive that this was a human influencer", "I perceive that this was a human-like virtual influencer", and "I perceive that this was an anime-like virtual influencer". Although manipulation checks can ensure validity, Kotzian et al. (2020) strongly emphasize not removing any participants failing the manipulation check since this will bias the results in the way the researchers aim to get them, leading to skewing the results of accepting or rejecting the hypotheses tested in the research.

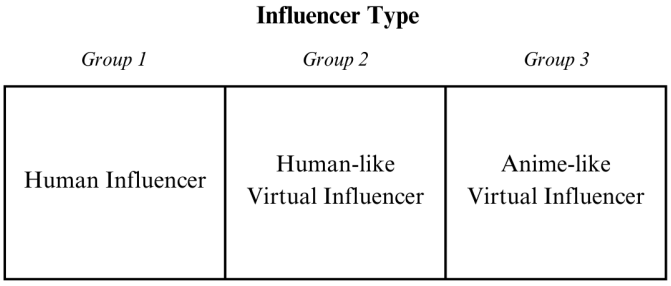

Figure 3. Experimental Study Design

A pre-test of the surveys was performed before the main data collection to minimize the risks of uncertainty and potential difficulties that could occur during administrating the survey (Hulland, Baumgartner & Smith 2018). The pre-test consisted of a small-scale study, where the three manipulated surveys were equally distributed between 12 respondents. According to Hulland, Baumgartner, and Smith (2018), running a pre-test is highly recommended to ensure that the respondents understand the meaning of the questions, which will result in accurate answers for the best result possible. The pre-test also ensured that the selected influencers on the pictures were unknown so that no prior associations of them or undesirable or biassing connotations were made by the respondents (Geuens & De Pelsmacker 2017). The pretest of the manipulations was made to test how "obvious" the manipulations were and brought

feedback on the quality of the survey design and the plausibility of the hypothesis (Geuens & De Pelsmacker 2017).

3.4 Measurements

The measurements used in this experiment were all multi-item scales, chosen to capture the key constructs related to perceived authenticity, credibility, and brand trust drawn from prior research and theories. Multi-item scales are commonly used to measure constructs (Geuens & De Pelsmacker 2017). They are believed to secure higher validity than single-item scales, which is especially useful in empirical studies (Diamantopoulos, Sarstedt, Fuchs, Wilczynskiv & Kaiser 2012). The items used in the experiment to test the hypothesis were all measured on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). According to Weijters, Cabooter, and Schillewaert (2010), a seven-point scale reduces extreme responses and is also well suited when the respondents are students since they are highly knowledgeable. Since the respondents in this research are students, a seven-point scale was suitable.

Perceived credibility was measured with four items following that SCT is made up of trustworthiness, expertise, and attractiveness (Ohanian 1990). The items used in the experiment were: “This influencer is trustworthy”, “This influencer is an expert on the topic”, ”This influencer is experienced”, and “This influencer is attractive” inspired by Lim and Lee (2023), Ohanian (1990), and Wiedmann and Mettenheim (2021). *Perceived authenticity* was measured through six items; “This influencer is genuine”, “This influencer seems real to me”, “This influencer is authentic”, “This influencer is unique in her style”, “This influencer has distinctive characteristics”, and “This influencer has something about her that makes her stand out”, following the belief that being authentic is to be genuine, original, and true to oneself (Moulard, Garrity & Rice 2015). Lastly, *brand trust* was measured with four items; “I trust this brand”, “I rely on this brand”, “This is an honest brand”, and “This brand is safe”, developed by Chaudhuri and Holbrook (2021).

To have only one variable representing each of the independent, dependent, and mediating variables, the scales were summated by merging the items measuring the same concept, into one variable (i.e. *perceived authenticity*, *perceived credibility*, and *brand trust*). This technique was used to reduce measurement errors by capturing more information when dealing with complex concepts than what a single-item scale could have done (Hair et al. 2019). To measure the scales’ reliability, Cronbach’s alpha (α) was used, which assesses internal consistency agreed to the minimum level of 0.70 (Hair et al., 2019). All summated scales met this criterion; for authenticity α=0.758, for credibility α=0.703, and for brand trust α=0.867 (see Appendix 4–6).

3.5 Data Analysis

Various statistical methods in the program SPSS were used to analyze the collected data and hypotheses. To test the hypothesis regarding the direct effect of influencer type on brand trust (H1), the PROCESS macro was used. This is a macro used for regression analysis which describes the statistical relations between variables, in this case, the relationship between one dependent variable and one or more independent variables (Hayes, 2014; Xin & Xiaogang, 2009). Regression analysis can be used to examine how much a particular set of independent variables can sufficiently explain the outcome (Xin & Xiaogang, 2009). PROCESS shows both direct and indirect effects of an independent variable (Hayes 2014). To test for potential differences between the influencer types, a One-way ANOVA with Tukey's Post Hoc was conducted. An ANOVA shows the mean score and variation between the groups compared and thus, shows if the means are significantly different from one another (Hair et al. 2019; Xin & Xiaogang 2009). The post hoc test was added to provide a more detailed view of the mean differences and the magnitude of the differences between the groups (Hair et al. 2019).

The PROCESS macro was used to test if brand trust is positively affected by consumers' perceived authenticity and credibility of an influencer (H2 & H4). Further on, the potential mediating effects of influencer authenticity (H3) and influencer credibility (H5) were examined, also through PROCESS. This is an additional variable that can explain the relationship, showing the indirect effect of the independent variable on the dependent one (Hair et al. 2019; Hayes 2014). It is suitable to include a mediating variable to test a theory like a known outcome of an element (McKinnon 2011), such as the potential outcome of perceived influencer authenticity and credibility. McKinnon (2011) further argues that it can be both costly and difficult to truly measure the mediators, however, including these ensures a more complex study, showing the differences in effects of certain elements. PROCESS Model 4 was used as it allows for testing of mediating variables (Hayes 2014), and bootstrapping was included for a more precise analysis of the indirect effect (Hair et al. 2019).

4. Results

4.1 Descriptive Result

A total of 186 responses were recorded, but 29 of those were incomplete. Due to these responses missing more than 50% of the answers, they were deleted from the sample. This resulted in a final sample size of 155 (n=155) respondents, evenly distributed across the influencer types. Lenth (2021) states that sample sizes need to be of adequate size, such as a moderate size that is of scientific relevance and statistically significant. The three different treatment groups in this research consisted of 50-53 participants, which is enough to ensure sufficient statistical power (Geuens & De Pelsmacker 2017). 54.80% of the total respondents

were men, 40.60% were women, 3.20% were non-binary, and 1.30% preferred not to reveal their gender. The majority of the respondents were in the age range of 19–23 years old.

As the IV is multicategorical, the group presented with the human influencer (HI group) acts as the reference group, with two experimental groups. One presented with the HVI (HVI group), and one presented with the AVI (AVI group). Since the HI group acts as the reference group, the results are always in comparison to the HI group.

4.2 Manipulation Checks

Three questions aimed to validate the manipulated independent variables by asking participants how they perceived the influencer; "I perceive that this was a human influencer/human-like virtual influencer/anime-like virtual influencer", rated on a 7-point Likert-scale. The outcome indicated a significant successful validation of the manipulations between the HI group and the AVI group (p=<0.001), but not for the HVI group (p=0.217) (see Appendix 7). This indicates that the participants did not perceive the HVI as distinctly as the other two categories and that the characteristics and presentation of that influencer were not clear enough to differentiate it significantly from the other two. Since the data did not provide strong enough evidence, the manipulation for this group was not as effective as desired.

The F value informs the variation within and between the groups. The AVI group had the highest score (F=46,079), the HI group had the second highest (F=10,720) and the group with the lowest score was the HVI group (F=1,541). The F-value shows that the higher the value, the greater the difference is between the groups, than within the group. Looking at the Sum of Square which also shows the variation between groups, the HVI group has the lowest here as well (8,304). The mean square within the groups (HI=2,968, HVI=2,694, AVI=2,468) indicates homogeneity within the groups. The mean square between the groups indicates higher differences between the HI group and the AVI group, but not the HVI group, as aforementioned. Tukey's Post Hoc (see Appendix 7) test complements the ANOVA results and provides a detailed comparison between the specific groups. A combination of them both shows a comprehensive view of the manipulation check. It confirms the successful manipulations, as well as what should be adjusted for future research, where more support is needed to revise the portrayal of the HVI to achieve a clearer distinction in participants' perceptions.

4.3 Hypothesis Testing

	Mediating variables: authenticity & credibility				Dependend variable	
	Perceived influencer authenticity		*Perceived influencer credibility*		*Brand trust*	
	β	*p*	*β*	*p*	*β*	*p*
Human-like VI	0.5651	0.0068	-0.9929	0.0000	0.0863	0.6680
Anime-like VI	-0.1246	0.5520	-1.1850	0.0000	-0.0399	0.8375
Fashion Interest	-0.0237	0.6949	0.0352	0.5675	0.0312	0.5377
Gender	-0.1000	0.4687	0.2993	0.0322	0.1614	0.1721
Model					R^2=0.3519, *p*=0.0000	

	Direct & Indirect effects			
	Human-like VI		*Anime-like VI*	
	LLCI	*ULCI*	*LLCI*	*ULCI*
Direct effect	-0.3105	0.4831	-0.4237	0.3439
Indirect effect				
Perceived influencer authenticity	0.0152	0.3453	-0.1645	0.0862
Perceived influencer credibility	-0.6612	-0.1568	-0.7860	-0.1987

Figure 4. Results Overview

4.3.1 Hypothesis H1

Testing H1, with PROCESS model 4 (see Appendix 9), showed no statistically significant direct effect of X on Y (*p*=0.6680 for the HVI group, and *p*=0,8375 for the AVI group) (see Figure 4). Thus, the hypothesis is rejected. However, the One-way ANOVA (see Appendix 8), showed that brand trust statistically differs between the groups (F=3.417, *p*=0.035). To identify individual differences between the groups, Tukey's Post Hoc was used. The test showed that the mean score for the group presented with the human influencer (M=3.7356, SD=0.8216) was significantly different (*p*=0.032) from the group presented with the AVI (M=3.2000, SD=1.24642), with a higher mean score. However, there was no statistically significant difference between the group presented with the human influencer and the HVI (M=3.5802, SD=1.08384) or between the group presented with the HVI and the AVI. Thus, the results show a difference between two of the groups but not between all, with brand trust scoring highest for the group presented with the human influencer compared to the AVI group.

4.3.2 Hypothesis H2 & H4

The research model with two mediators (M1 and M2) explains approximately 35% of brand trust (R^2=0.3519) and is statistically significant (*p*=0.0000) (see Appendix 9 and Figure 4). The results showed that consumers' perceived authenticity (H2), (*p*=0.0010, β=0.2593) and perceived credibility (H4) (*p*=0.0000, β=0.3910) of an influencer both significantly impact brand trust positively (see Appendix 9). The results, therefore, support both hypotheses, indicating that brand trust is positively affected by consumers' perceived authenticity and

credibility of an influencer, as proposed in this research. Thus, these characteristics are highly important for influencers to portray in general regarding brand trust. The following results of H3 and H5 show the distinct perceptions of these characteristics for the different influencer types examined in this research.

4.3.3 Hypotheses H3 & H5

Authenticity (see Figure 4) For the HVI group, perceived authenticity is statistically significant with a positive relationship (p=0.0068, β=0.5651) (see Appendix 9). However, for the AVI group, perceived authenticity shows no statistical significance (p=0.5520). ***Credibility*** (see Figure 4) For both the HVI group (p=0.0000, β=-0.9929) and the AVI group (p=0.0000, β=-1.1850), perceived credibility is significant with a negative relationship between influencer type and consumers' perceived credibility.

The indirect effect of X on Y (see Figure 4) reveals a fully mediating effect through perceived authenticity for the HVI group (95% CI [0.0152, 0.3453], not crossing 0) compared to the HI group (see Appendix 9). However, for the AVI group perceived authenticity is insignificant (95% CI [-0.1645, 0.0862], crossing 0), compared to the HI group. Hence, these results partially support H3, meaning that consumers' perceived authenticity of an HVI, but not an AVI, is mediating the effect of influencer type on brand trust**.** The results also show a significant fully mediating effect (see Figure 4) through perceived credibility for both group HVI (95% CI [-0.6612, -0.1586], not crossing 0) and group AVI (95% CI [-0.7860, -0.1987], not crossing 0), compared to the HI group. Thus, the results support H5, indicating that consumers' perceived credibility of an influencer fully mediates the effect of influencer type on brand trust**.**

HYPOTHESES	SUPPORT
H1: *Influencer type has a direct effect on brand trust (c')*	**NO**
H2: *Consumers' perceived authenticity of an influencer is positively affecting brand trust (b1)*	**YES**
H3: *The perceived authenticity of an influencer is mediating the effect of influencer type on brand trust (a1b1)*	**YES/NO**
H4: *Consumers' perceived credibility of an influencer is positively affecting brand trust (b2)*	**YES**
H5: *The perceived credibility of an influencer is mediating the effect of influencer type on brand trust (a2b2)*	**YES**

Figure 5. Hypotheses Results

4.3.4 Covariates

With the aim to explain brand trust even further, the covariate fashion interest was added to the model as a direct effect on brand trust due to brand-consumer congruence positively affecting brand-consumer relationships. With fashion interest added to the model (see Figure 4), the new explanatory power was 35.36%, with an increase of only 0.0017 decimal points (see Appendix 10). Nor did it show a statistically significant effect on brand trust (p=0.5377). Fashion interest did not have a statistically significant effect on brand trust in this study. Additionally, gender was also added to the test (see Figure 4) for a potential effect on brand trust. The results showed no statistical significance (p=0.1721), and the explanatory power increased to 36%, indicating no major effect on brand trust.

5. Discussion

This research explores the connection between influencer type and brand trust, offering insights into consumer perceptions of authenticity and credibility within the context of virtual influencers. The findings of this study show that consumers' perceived authenticity and credibility of influencers positively affect brand trust, which supports the proposed research model. What did not affect brand trust directly, was what type of influencer consumers face, indicating that simply the type of influencer does not determine consumers' trust in brands. Instead, brand trust is mediated by consumers' perceived authenticity regarding an HVI but not an AVI. Brand trust is also mediated by consumers' perceived credibility of both VI types. This research shows a nuanced relationship between VIs, consumer perceptions, and brand trust.

Previous research highlights the importance of trust in creating strong brand-consumer relationships (Delgado-Ballester 2004; Molinillo, Ekinci, and Japutra 2019) and that trust is crucial for successful brand performance and consumer purchases (Chaudhuri & Holbrook 2001; Kushwaha & Steenkamp 2019). The results from the data set confirmed that the perceived authenticity of an influencer positively affects brand trust, which aligns with previous research on brand trust being positively influenced by authenticity and that this can determine the level of brand trust (Eggers et al. 2013; Huang & Guo 2021; Portal, Abratt & Bendixen 2019; Schallehn, Burmann & Riley 2014). Additionally, this research shows a significant effect of consumers' perceived credibility of influencers to affect brand trust positively. This supports previous research that influencer credibility and trust in sources of information affect brand trust (Belanche et al. 2021; Hussain 2020; Lou & Yuan 2019; Viviani & Pasi 2017).

By clarifying the interplay between influencer type and consumers' perceived authenticity and credibility in shaping brand trust, this research contributes to influencer marketing, the use of VIs, and brand management, offering valuable guidance for future research and marketers when navigating this expanding and dynamic field (Appel et al. 2020; Lou & Yuan 201; Portal, Abratt & Bendixen 2019; Sands et al. 2022). The results will be further discussed in the upcoming sections about theoretical and managerial implications.

5.1 Theoretical Implications

The findings do not support H1, that *influencer type has a direct effect on brand trust,* meaning there is no direct effect. Despite this, the ANOVA with Tukey's Post Hoc used, showed that brand trust scored higher for the group with the human influencer than the AVI, indicating that consumers perceive human influencers as more trustworthy than an AVI. Furthermore, there was no significant difference between the human influencer and the HVI. These results align with previous research emphasizing the importance of relatability and authenticity associated with human influencers (Portal et al. 2019) and thus, reinforcing the notion that human-like qualities play an important role in fostering brand trust.

The Uncanny Valley Theory posits that overly human-like representations of AI and robots, such as an HVI, can evoke feelings of discomfort (Kim, Schmitt & Thalmann 2019), but this was not found in this research. Due to anthropomorphism, such as people attributing human-like qualities to AI-driven technology, it could be expected that people would be more willing to interact with an AVI than an HVI, since an HVI instead could be viewed "too human-like" and evoke feelings of uncanniness. Thus, an AVI could be seen as more credible (Dabiran et al. 2024; Han and Yang 2018; Kim, Schmitt & Thalmann 2019). There were no findings of this despite the anthropomorphic nature of AVIs. The results suggest that consumers do not exhibit any degree of anthropomorphism towards AVIs, nor did attributing human-like qualities to the VIs foster positive outcomes among consumers, such as brand trust. This indicates a step away from the conventional understanding of consumers' reactions to anthropomorphized AI-driven entities and emphasizes the intricacies of consumer perceptions regarding virtual influencers. One potential explanation for this not influencing consumers' perceptions could be due to today's digital landscape where technological advancements are constantly increasing (Wang 2021). People are also becoming more and more interested in VIs (Thomas & Fowler 2021), which could lead to them also being more used to interacting with these kinds of influencers, reducing the uncanniness of the phenomenon. This also aligns with what Pranjarath and Tiwari (2021) believe; that VIs can reduce people's anxiety in a way that human influencers cannot.

The proposed H3, that the *perceived authenticity of an influencer is mediating the effect of influencer type on brand trust*, is partially accepted. For an HVI, consumers' perceived authenticity of the VI fully mediates the level of brand trust. Additionally, the results even provided a significant positive relationship between the use of an HVI and consumers' perceived authenticity, compared to the use of a human influencer, indicating that an HVI is perceived to be more authentic than a human influencer. What could potentially explain this is intrinsic or extrinsic behavior, as proposed in the SDT, meaning that if an individual behaves extrinsically, they gain an external reward which is seen as inauthentic (Giardino 2021; Ryan & Deci 2000). As humans potentially could be prone to external rewards and monetary compensation, perhaps a VI who is computer-generated, is perceived to not have the same external desires, and therefore, deemed as more authentic. This emphasizes the importance of influencers behaving true to their intrinsic motivations and values. However, the results also show that this alignment alone does not guarantee perceived authenticity. Consumers' perception of influencers' authenticity consists of them being genuine, original, true, and behaving in line with their values (Ilicic & Webster 2016; Moulard, Garrity & Rice 2015), and believe them to be authentic when they collaborate with brands suited for their interest (Audrezet, De Kerviler & Moulard 2020). These results indicate that how unique and well-suited the influencer is to the brand it collaborates with, is what affects consumers' perception of influencer authenticity. Hence, the use of AI and an entity being artificially crafted, do not seem to be a determining factor in the perception of someone being authentic or not. This provides contradictory results to previous research by Lou et al. (2023) who propose that when people know that a VI is artificially crafted, they believe the VI to be inauthentic and untrustworthy. The methodology and sample of the research by Lou et al. (2023) differ from this research. The majority of their interviewees were Chinese women who

had previous knowledge and were following a VI on social media. This could be a reason for the results differing from this research where previous knowledge of VIs was not a requirement for being part of the experiments, and thus perhaps, representing a broader picture of consumers' perceptions.

The results of this research confirm H5, that *consumers' perceived credibility of an influencer fully mediates the effect of influencer type on brand trust*. Trustworthiness, expertise, and attractiveness determine the source's credibility, as proposed in the SCT (Djafarova & Rushworth 2017; Lou & Yuan 2019; Ohanian 1990; Wiedmann & Mettenheim 2021), which influences consumers' acceptance of VIs (Jhawar, Kumar & Varshney 2023). The fit between the influencer and the brand it collaborates with also affects consumers' perceived credibility of the influencer. If these align, the credibility increases (Belanche et al. 2021). As aforementioned about authenticity, the experiment in this research where the influencer, being a fashionista, was well suited to the fashion brand, seemed to positively impact the authenticity. However, the results for credibility showed that consumers' perceived credibility of a VI, either being human-like or anime-like, significantly impacted the perceived credibility negatively, compared to a human influencer. Hence, consumers do not find VIs credible, affecting the acceptance of VIs, and thus, brand trust. This could stem from the fact that VIs cannot actually try out a physical product, in this case, a new clothing collection. For a VI to promote a physical product can negatively affect the trustworthiness of the VI, contrary to if the VI would promote something virtual within its expertise (Lou et al. 2023). This would, in turn, negatively impact the influencer's credibility since trustworthiness is one of the determining factors in source credibility.

The results did not provide significant evidence that the level of fashion interest impacted the level of brand trust. The result can thus not support previous research on how brand-consumer congruence impacts brand trust (Aaker 1999; Keller 1993; Leckie, Dwivedi & Johnson 2022). This might be explained by the fact that the fit between an influencer and the brand they collaborate with has a greater impact on brand trust, as the results suggest. Thus, potentially outweighing how well consumers themselves resonate with the brand in question.

5.2 Managerial Implications

Contrary to expectations derived from theories such as the Uncanny Valley Theory and Anthropomorphism, the results did not show any significant impact of HVIs or AVIs on brand trust. Therefore, we see no reason for marketers to exclude any of the influencer types, either human, HVI, or AVI, due to the results of this research regarding anthropomorphism and uncanniness. Instead, the results indicate that marketers should focus on developing high authenticity and credibility of the influencers they collaborate with or design.

The findings, showing that consumers' perceived authenticity (partially accepted H3) and credibility of VIs mediate brand trust, provide marketers with guidance on how to use and

design VIs in their influencer marketing strategies. As brand trust is positively influenced by consumers' perceptions of the authenticity and credibility of influencers, marketers should either choose to collaborate with a VI that portrays genuineness, originality, and being true, or design a VI with these characteristics in mind, which constitutes authenticity (Ilicic & Webster 2016; Moulard, Garrity & Rice 2015). Marketers should choose to design or collaborate with an HVI if their goal is to be perceived as authentic, as the results showed that consumers perceive them to be more authentic than human influencers. As aforementioned, this could be due to humans collaborating with brands to get an external reward, which VIs do not. In contrast to an HVI, the results did not support H3 for an AVI. Hence, consumers' perceived authenticity of an AVI did not mediate the level of brand trust, compared to the use of a human influencer, indicating no difference between the two types. Also, there was no significant difference in consumers' perceived level of authenticity of an AVI and a human influencer. Therefore, since perceived authenticity did not show significant importance for AVIs, this would not be a crucial characteristic for marketers to focus on in the design or portrayal of an AVI. Additionally, people perceive authenticity differently (Beverland & Farrelly, 2010), which could make it better for marketers to instead focus on consumers' perceived credibility of influencers, as that has a great impact on brand trust.

The results for credibility showed that consumers' perceived credibility of a VI, either being human-like or anime-like, significantly impacted the perceived credibility negatively, compared to a human influencer. Hence, consumers do not find VIs credible, affecting the acceptance of VIs, and thus, negatively affecting brand trust. This could stem from the fact that VIs cannot actually try out a physical product, in this case, a new clothing collection. For a VI to promote a physical product can negatively affect the trustworthiness of the VI, contrary to if the VI would promote something virtual within its expertise (Lou et al. 2023). This would, in turn, negatively impact the influencer's credibility since trustworthiness is one of the determining factors in source credibility. This makes it applicable for tech-oriented marketers or brands that provide virtual products or services to use VIs who will be seen as more credible due to their better fit with the products they promote. Therefore, marketers should carefully consider and assess the fit between the influencer type and their target audience's preferences and ensure that their image aligns with the brand values and industry.

5.3 Limitations & Future Research

Although this research has provided interesting relationships and insights into VIs and brand trust, it is not free from limitations. As the respondents of the treatment with the HVI could not easily distinguish it from being a human influencer, an HVI, or an AVI, a review of the design and features of the HVI would be appropriate in order to ensure an effective manipulation. Since the study encountered the challenge of achieving a clear distinction between a human influencer and an HVI, this could have impacted the validity of the experimental design and results. Future research could explore alternative methods for manipulating influencer types more effectively, such as improving the visual cues or the narrative of the added text to enhance perceived differences between the influencers, for

example, include a more detailed description of what the word "virtual" means in this context. Some respondents could have interpreted it to refer to the virtual world of just the digital online environment, when in fact it referred to an artificially created individual. This could improve the participants' perceptions of what constitutes a HVI.

The sample size of this research was quite small but enough to ensure statistical power. However, issues can occur when having a small sample size, which can pose challenges to the generalizability of the research findings and reduce external validity and statistical power. Future research could include a broader demographic, as this study focussed on students. Additionally, future research could also adopt an appropriate methodological strategy and a larger sample size to enhance the robustness of their studies, by, for example, presenting the survey to even more people, using random sampling or stratified sampling to enhance the representatives of the sample and mitigate the effects of sampling bias. This could also contribute to a greater understanding of consumers' perceptions of VIs and their impact on brand trust.

This study focused on the fashion industry which could have limited the generalizability of the findings. An exploration of how influencer types affect brand trust in other industries and settings could provide a more comprehensive understanding of its impact. As this research examined brand trust stemming from consumers' perceived authenticity and credibility of influencers, future research could still include more factors that can affect the level of brand trust. As previous research suggests, consumers trust brands to a greater extent if they are familiar with the brand and have positive previous experiences with the brand in question (Akoglu & Özbek 2022; Dawar & Lei 2009; Ha, Pham & Le 2022).

This research explains 35% of brand trust, leaving 65% to be further explored. As previously mentioned, brand trust is built of multiple components such as brand familiarity (Dawar & Lei 2009; Ha, Pham & Le 2022), brand experience (Akoglu & Özbek 2022), and consumers' emotional attachment (Bidmon 2017) to the brand in question. Incorporating these elements into a similar study could enhance the explanatory power, providing a more comprehensive understanding of what determines brand trust.

6. Conclusion & Contribution

This research provides insights into how consumers perceive different types of influencers and guides marketers to recognize that while human influences may still hold a significant level of trust among consumers, consumers' perceptions of VIs vary and the effectiveness of their portrayal can influence consumers' trust in brands. Aiming to answer the first research question, "How do different influencer types affect consumers' trust in brands?", the study revealed that influencer types do not affect brand trust directly. This suggests that brands can collaborate with whatever type of influencer they want, whether it is a human or virtual, and instead prioritize building authentic and credible relationships with VIs and ensuring that

their image aligns with the brand values and industry. This could be done by fostering relationships with genuine and credible influencers, as these qualities impact consumers' trust in brands.

This leads us to answer the second research question, "How do the perceived authenticity and credibility of virtual influencers affect brand trust?". Consumers' perceived authenticity and credibility of influencers overall positively affect the level of brand trust, highlighting the need for a brand to consider these qualities when collaborating with an influencer. Consumers' perceived authenticity of HVIs is, interestingly, higher than for a human influencer, and is fully mediating the level of brand trust. This could indicate that consumers perceive influencers as more authentic when their behaviors align with intrinsic motivations. As some might perceive humans to be more prone to accepting external rewards, this could be a reason why HVIs are deemed more authentic as they simply cannot earn any money themselves. In contrast, consumers' perceived authenticity of AVIs does not differ from humans and does not mediate brand trust. Thus, authenticity is not a crucial characteristic for AVIs and not something marketers should focus on for this type. However, consumers' perceived credibility of VIs, regarding both types, is fully mediating the level of brand trust. This shows the importance of aligning influencer characteristics with brand values and industry to enhance consumers' perceived credibility and trustworthiness of the influencer, regardless of influencer type.

In conclusion, this study offers valuable insights into the complexity between influencer types and brand trust in influencer marketing. The study uncovers the mediating effects of consumers' perceptions of influencer authenticity and credibility, contributes to a deeper understanding of the dynamics around virtual influencers, and offers recommendations for marketers.

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Appendix

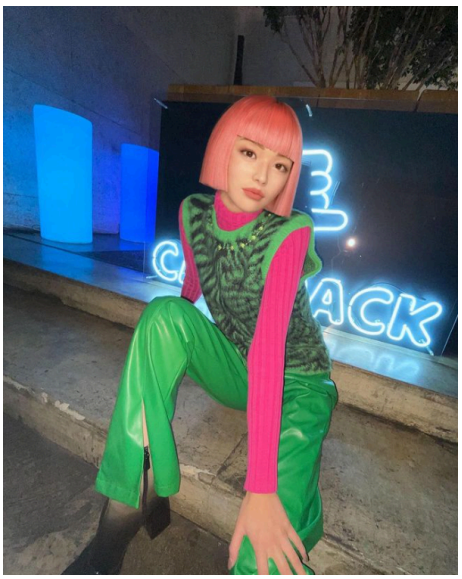
1. Manipulation 1: Human Influencer

Sarah is a social media influencer. She has been an influencer for 7 years and has approximately 2.7 million followers on Instagram. She is known for her taste in fashion and for being a top fashionista. Sarah posts content about her personal life and social good, as well as promotional collaborations with many big multinational brands such as Nike, Dior, Maybelline, etc. She has appeared in numerous headlines on TV, online, and in business magazines, and is often referred to as one of the top influencers in fashion.

Sarah has recently signed a new contract to collaborate with another multinational fashion brand to promote its products. She will be the face of the new collection and be present in many marketing campaigns wearing the new products. She will also try them out and show on her social media where her followers can participate in different social media activities and ask questions.

2. Manipulation 2: Human-like Virtual Influencer

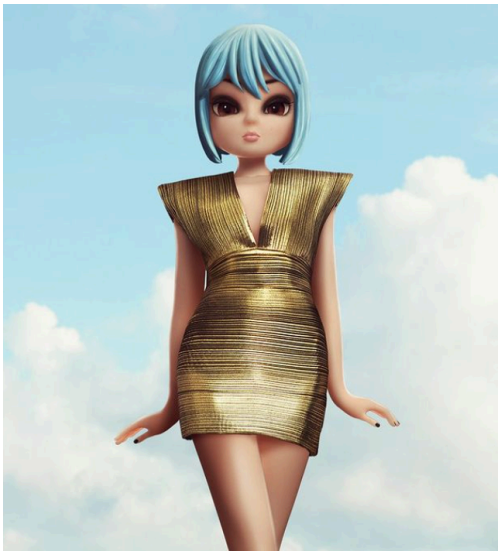
Sarah is a virtual social media influencer, meaning she is computer-generated and powered by artificial intelligence. She has been an influencer for 7 years and has approximately 2.7 million followers on Instagram. She is known for her taste in fashion and for being a top fashionista. Sarah posts content about her personal life and social good, as well as promotional collaborations with many big multinational brands such as Nike, Dior, Maybelline, etc. She has appeared in numerous headlines on TV, online, and in business magazines, and is often referred to as one of the top influencers in fashion.



Sarah, the virtual influencer, has recently signed a new contract to collaborate with another multinational fashion brand to promote its products. She will be the face of the new collection and be present in many marketing campaigns wearing the new products. She will also try them out and show on her social media where her followers can participate in different social media activities and ask questions.

3. Manipulation 3: Anime-Like Virtual Influencer

Sarah is an anime-like virtual social media influencer, meaning she is computer-generated and powered by artificial intelligence. She has been an influencer for 7 years and has approximately 2.7 million followers on Instagram. She is known for her taste in fashion and for being a top fashionista. Sarah posts content about her personal life and social good, as well as promotional collaborations with many big multinational brands such as Nike, Dior, Maybelline, etc. She has appeared in numerous headlines on TV, online, and in business magazines, and is often referred to as one of the top influencers in fashion.



Sarah, the virtual influencer, has recently signed a new contract to collaborate with another multinational fashion brand to promote its products. She will be the face of the new collection

and be present in many marketing campaigns wearing the new products. She will also try them out and show on her social media where her followers can participate in different social media activities and ask questions.

4. Cronbach's Alpha: Authenticity

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,758	,761	6

5. Cronbach's Alpha: Credibility

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,703	,711	4

6. Cronbach's Alpha: Brand Trust

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,867	,869	4

7. Manipulation check: ANOVA & Tukey's Post Hoc

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
MaC_1_HI	Between Groups	63,624	2	31,812	10,720	<,001
	Within Groups	451,060	152	2,968		
	Total	514,684	154			
MC_2_HVI	Between Groups	8,304	2	4,152	1,541	,217
	Within Groups	409,464	152	2,694		
	Total	417,768	154			
MC_3_AVI	Between Groups	227,486	2	113,743	46,079	<,001
	Within Groups	375,198	152	2,468		
	Total	602,684	154			

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
MaC_1_HI	HI	HVI	,83091*	,33624	,038	,0351	1,6268
		AVI	1,57846*	,34120	<,001	,7709	2,3860
	HVI	HI	-,83091*	,33624	,038	-1,6268	-,0351
		AVI	,74755	,33962	,074	-,0563	1,5514
	AVI	HI	-1,57846*	,34120	<,001	-2,3860	-,7709
		HVI	-,74755	,33962	,074	-1,5514	,0563
MC_2_HVI	HI	HVI	-,35269	,32036	,515	-1,1109	,4056
		AVI	,20769	,32509	,799	-,5618	,9771
	HVI	HI	,35269	,32036	,515	-,4056	1,1109
		AVI	,56038	,32358	,197	-,2055	1,3263
	AVI	HI	-,20769	,32509	,799	-,9771	,5618
		HVI	-,56038	,32358	,197	-1,3263	,2055
MC_3_AVI	HI	HVI	-2,20210*	,30666	<,001	-2,9279	-1,4763
		AVI	-2,83154*	,31119	<,001	-3,5681	-2,0950
	HVI	HI	2,20210*	,30666	<,001	1,4763	2,9279
		AVI	-,62943	,30975	,108	-1,3626	,1037
	AVI	HI	2,83154*	,31119	<,001	2,0950	3,5681
		HVI	,62943	,30975	,108	-,1037	1,3626

*. The mean difference is significant at the 0.05 level.

8. Group Comparison on Brand Trust: ANOVA & Tukey's Post Hoc

Descriptives

BT_T_m

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
HI	52	3,7356	,82160	,11394	3,5068	3,9643	1,00	6,75
HVI	53	3,5802	1,08284	,14874	3,2817	3,8787	1,00	6,00
AVI	50	3,2000	1,24642	,17627	2,8458	3,5542	1,00	6,75
Total	155	3,5097	1,07883	,08665	3,3385	3,6809	1,00	6,75

ANOVA

BT_T_m

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7,712	2	3,856	3,417	,035
Within Groups	171,523	152	1,128		
Total	179,235	154			

Multiple Comparisons

Dependent Variable: BT_T_m

Tukey HSD

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
HI	HVI	,15539	,20735	,734	-,3354	,6462
	AVI	,53558*	,21040	,032	,0376	1,0336
HVI	HI	-,15539	,20735	,734	-,6462	,3354
	AVI	,38019	,20943	,168	-,1155	,8759
AVI	HI	-,53558*	,21040	,032	-1,0336	-,0376
	HVI	-,38019	,20943	,168	-,8759	,1155

*. The mean difference is significant at the 0.05 level.

9. PROCESS MODEL 4 (without covariate)

Matrix

```
[DataSet1] C:\Users\helen\OneDrive\Dokument\School of Business - Master's\Master's year 2\DATA_ANALYSIS\Influencers_Randomize_April 1, 2024_12.13.

Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : BT_T_m
    X  : Group
   M1  : C_T_m
   M2  : A_T_m

Sample
Size:  155

Coding of categorical X variable for analysis:
  Group     X1     X2
  1,000   ,000   ,000
  2,000  1,000   ,000
  3,000   ,000  1,000

**************************************************************************
OUTCOME VARIABLE:
 C_T_m

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,4378      ,1916     1,1576    18,0178     2,0000   152,0000      ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     4,6250      ,1492    30,9978      ,0000     4,3302     4,9198
X1           -,9929      ,2100    -4,7280      ,0000    -1,4078    -,5780
X2          -1,1850      ,2131    -5,5606      ,0000    -1,6060    -,7640

**************************************************************************

**************************************************************************
OUTCOME VARIABLE:
 A_T_m

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,2770      ,0767     1,1138     6,3165     2,0000   152,0000      ,0023

Model
             coeff         se          t          p       LLCI       ULCI
constant     3,3846      ,1464    23,1266      ,0000     3,0955     3,6738
X1            ,5651      ,2060     2,7431      ,0068      ,1581      ,9721
X2           -,1246      ,2090     -,5962      ,5520     -,5376      ,2884

**************************************************************************
OUTCOME VARIABLE:
 BT_T_m

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,5932      ,3519      ,7744    20,3617     4,0000   150,0000      ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     1,0493      ,3425     3,0641      ,0026      ,3727     1,7260
X1            ,0863      ,2008      ,4298      ,6680     -,3105      ,4831
X2           -,0399      ,1943     -,2054      ,8375     -,4237      ,3439
C_T_m         ,3910      ,0760     5,1455      ,0000      ,2409      ,5412
A_T_m         ,2593      ,0775     3,3476      ,0010      ,1063      ,4124


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y *****************

Relative direct effects of X on Y
      Effect         se          t          p       LLCI       ULCI
X1     ,0863      ,2008      ,4298      ,6680     -,3105      ,4831
X2     -,0399     ,1943     -,2054      ,8375     -,4237      ,3439

Omnibus test of direct effect of X on Y:
    R2-chng          F        df1        df2          p
      ,0022      ,2511     2,0000   150,0000      ,7783
----------

Relative indirect effects of X on Y

 Group       ->    C_T_m       ->    BT_T_m

      Effect     BootSE   BootLLCI   BootULCI
X1    -,3882      ,1303     -,6612     -,1568
X2    -,4634      ,1504     -,7860     -,1987

 Group       ->    A_T_m       ->    BT_T_m

      Effect     BootSE   BootLLCI   BootULCI
X1     ,1465      ,0862      ,0152      ,3453
X2    -,0323      ,0619     -,1645      ,0862

********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

10. PROCESS MODEL 4 (with covariate)

Matrix

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : BT_T_m
    X  : Group
   M1  : C_T_m
   M2  : A_T_m

Covariates:
 F_I

Sample
Size:  155

Coding of categorical X variable for analysis:
  Group     X1     X2
  1,000   ,000   ,000
  2,000  1,000   ,000
  3,000   ,000  1,000

**************************************************************************
OUTCOME VARIABLE:
 C_T_m

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,4398      ,1934     1,1628    12,0682     3,0000   151,0000      ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     4,4454      ,3473    12,8011      ,0000     3,7593     5,1315
X1          -1,0062      ,2117    -4,7519      ,0000    -1,4245    -,5878
X2          -1,1788      ,2139    -5,5122      ,0000    -1,6013    -,7563
F_I           ,0352      ,0615      ,5730      ,5675     -,0863     ,1568

**************************************************************************
OUTCOME VARIABLE:
 A_T_m

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,2787      ,0777     1,1200     4,2390     3,0000   151,0000      ,0066

Model
             coeff         se          t          p       LLCI       ULCI
constant     3,5055      ,3408    10,2854      ,0000     2,8321     4,1789
X1            ,5740      ,2078     2,7620      ,0065      ,1634      ,9846
X2           -,1288      ,2099     -,6136      ,5404     -,5435      ,2859
F_I          -,0237      ,0604     -,3930      ,6949     -,1430      ,0955

**************************************************************************
OUTCOME VARIABLE:
 BT_T_m

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,5946      ,3536      ,7776    16,2985     5,0000   149,0000      ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant      ,8959      ,4237     2,1145      ,0361      ,0587     1,7330
X1            ,0696      ,2031      ,3426      ,7324     -,3317      ,4708
X2           -,0380      ,1947     -,1953      ,8454     -,4227      ,3467
C_T_m         ,3877      ,0763     5,0779      ,0000      ,2368      ,5385
A_T_m         ,2624      ,0778     3,3729      ,0009      ,1087      ,4161
F_I           ,0312      ,0504      ,6178      ,5377     -,0685      ,1309


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y *****************

Relative direct effects of X on Y
          Effect         se          t          p       LLCI       ULCI
X1         ,0696      ,2031      ,3426      ,7324     -,3317      ,4708
X2        -,0380      ,1947     -,1953      ,8454     -,4227      ,3467

Omnibus test of direct effect of X on Y:
    R2-chng          F        df1        df2          p
      ,0015      ,1748     2,0000   149,0000      ,8398
----------

Relative indirect effects of X on Y

 Group       ->    C_T_m       ->    BT_T_m

       Effect     BootSE   BootLLCI   BootULCI
X1     -,3900      ,1326     -,6718     -,1569
X2     -,4570      ,1517     -,7800     -,1867

 Group       ->    A_T_m       ->    BT_T_m

       Effect     BootSE   BootLLCI   BootULCI
X1      ,1506      ,0876      ,0159      ,3522
X2     -,0338      ,0638     -,1781      ,0879

********************* ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```