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Changing the Instagram Game – The rise of a new Influencer Generation

The impact of CGI Influencers on consumers' purchase intentions and brand attitude in the fashion industry

Name: Lara Sophie Walter
Student number: s2025965
Email: l.s.walter@student.utwente.nl
Study: Communication Science
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Supervisor: Ruud Jacobs, PhD
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Abstract

Today's social media influencers are an established and powerful marketing tool for brands, but there could soon be a new competition. Computer-generated influencers, or "CGI influencers" for short, are a new and growing trend on social media that is already expected to transform the future of influencer marketing. The aim of this research is therefore to gain first insights for brands about the emerging CGI influencer generation.

This study further examined whether CGI influencers can even be identified as such and whether the identification influences consumers in their purchase intentions and brand attitude. Furthermore, it is explored whether perceived trustworthiness, attractiveness, and expertise of the influencer mediates the relationship between influencer CGI identification and consumers' brand attitude. Also, the effect of influencer CGI identification on purchase intentions, mediated by perceived influencer-brand match, and originality and uniqueness of a brand's Instagram post, is examined. In this regard, a quantitative online experiment was conducted with a total of 137 participants. Furthermore, a between-subject study design was chosen. The participants were therefore randomly divided into two conditions. While participants in the first condition were told that the influencer in this study is CGI, the other participants were withheld this information. In the experiment, participants were exposed to a brand's Instagram post that entailed a CGI influencer. Thereupon, the participants were asked to answer a series of closed-ended questions in an online questionnaire.

Results revealed that the classification of an influencer as CGI negatively affects consumers' purchase intentions and brand attitude. Furthermore, it was established that the presented CGI influencer in this study neither enhanced the perceived originality and uniqueness of the brand's Instagram post nor was perceived as a better match for the brand. Also, respondents who classified the influencer as CGI perceived the influencer as less attractive, trustworthy, and as less of an expert than those who identified the influencer as human. Overall, this study provides new theoretical implications on the topic of CGI influencers. Furthermore, the practical implications ensuing from these findings concern the future of influencer marketing. Marketers can see from this study that working with CGI influencers should be strategically well thought out at this stage. The time for CGI influencers may not be quite there just yet, however, with technology becoming cheaper and more accessible, it could become the future of influencer marketing.

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1. Introduction

CGI Influencers – the new trend in Influencer marketing?

Computer-generated imagery, short CGI, has long been an established tool in the entertainment sector. Whether in film or video games, the application of animated graphics, figures, and characters has changed the way we perceive our surroundings. Now, animators and designers have taken CGI to a new level. According to the influencer marketing agency Mediakix (2020), starting as a simple art project back in 2016, computer-animated influencers have found their way onto social media platforms and are now slowly turning into a powerful new marketing tool for brands. CGI influencers can be defined as computer-generated "individuals" who have real human traits, characteristics and personalities, just like their lively colleagues (Mosley, 2020). An example of a CGI influencer can be found in figure 1. The figure displays a real Instagram post of the most famous CGI influencer Lil Miquela, openly displaying her “emotions” on social media. Recognizable are here especially the reactions of her community.

Figure 1. CGI influencer Lil Miquela showing human traits on Instagram.

With 2.3 million followers on Instagram, Lil Miquela is currently the most prominent character in a group of CGI influencers. The influencer was created in 2016 by the technology start-up Brud, a company based in Los Angeles, California (Trepany, 2020). On social media,

Lil Miquela publishes pictures and videos of herself showing an enviable lifestyle full of high fashion, recording studios and celebrity hangouts. Besides that, the CGI influencer openly shares her "experiences" and "thoughts" with her community. Thereby, sensitive topics such as break-ups, current societal issues, and even real sexual harassment are not left out. By now, Lil Miquela has already collaborated with top brands such as Samsung or Calvin Klein (Lil Miquela, n.d.). An example of a collaboration with Samsung can be found in figure 2. Remarkable, in 2018 Time Magazine even ranked Lil Miquela as one of the 25 most influential people on the Internet among Trump, Kanye West, Rihanna and Kylie Jenner ("25 most influential", 2018).

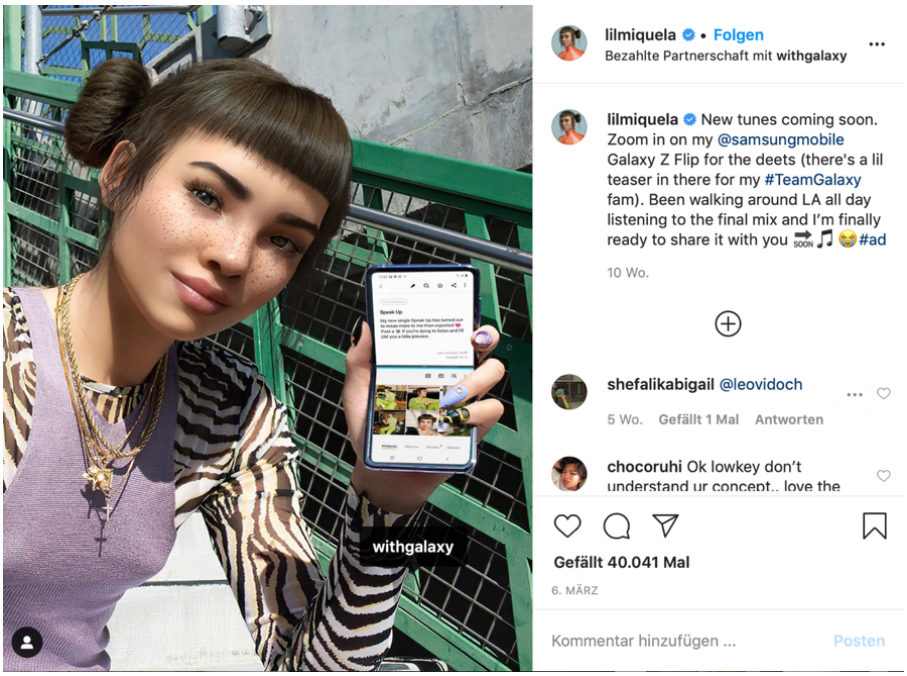


Figure 2. Lil Miquela's Instagram collaboration with Samsung in 2020.

CGI influencers are making their impact on the influencer marketing landscape and can change the way brands communicate with their audience. For example, brands can start creating their own CGI influencers that appeal to their target audience (Dodgson, 2020). This is not only cost-saving, brands no longer need to search for the right influencer or change their plans because the originally desired influencer is currently not available. Furthermore, because the brand has total control over the influencer, they can determine what the influencer says and how the influencer presents itself on the internet. Hence, any human mistakes such as forgetting to mention the brand in a post, or negative behaviour of the influencer that can damage the image of a brand, are eliminated (Leighton, 2019). Lastly, because of the novelty

of CGI influencers, there are currently no guidelines or regulations towards the usage of CGI influencers on social media. Hence, as current advertising guidelines only focus on human influencers, a loophole is being created for brands and marketers to try themselves (Luthera, 2020).

However, this loophole can also pose a certain danger for consumers. People who are not aware of the new influencer trend are subjected to manipulation. A study by the entertainment firm Fullscreen in 2019 has shown, for example, that 42% of Gen Z and millennials followed an Influencer they didn't even realize was computer-generated (Chowdhary, 2019). If CGI influencers are not being recognized as such, the consumer assumes that the recommendations and product placements by the influencer are based on true experiences and evaluations, when in fact a company is behind everything (Trepany, 2019). It can, therefore, be assumed that in retrospect, when the consumer finds out that the influencer was CGI and not a real person, a negative attitude towards the brand is built up and purchase intentions might decrease in the future. Even though CGI influencers offer brands new opportunities to express themselves, the newfound power has to be controlled. In the case of the CGI influencer Lil Miquela, for example, where she claimed that she had been "sexually harassed", the creators of the influencer were severely criticized for playing with other people's traumas just to make the influencer appear even more realistic (Song, 2019). An example of user reactions is displayed in figure 3.

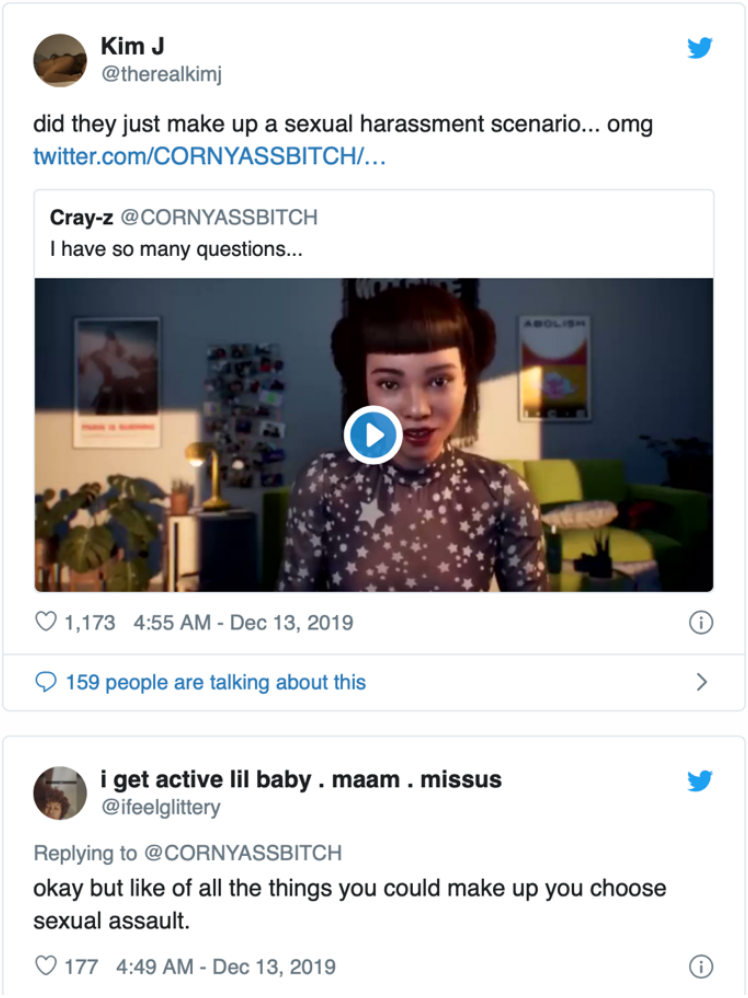


Figure 3. Users' comments on Lil Miquela's sexual harassment video.

As CGI influencers increasingly blur the line between reality and fantasy on social media, it is necessary to investigate how actual users feel about the new trend and how brands could integrate the new influencers into their communication strategies.

Therefore, this research aims to gain relevant insights for brands about the new influencer generation. Also, it is investigated whether CGI influencers can even be identified as such and whether the identification influences consumers in their purchase intentions and brand attitude. Furthermore, as there is no academic research on this topic so far, this study may provide new insights into the future of influencer marketing and may also serve as a guide or impetus for future research. Consequently, the aim of this research is formulated in the following research question:

'To what extent does the identification of an influencer as CGI influences consumers in their purchase intentions and brand attitude?'

This research is divided into multiple sections. First of all, a theoretical framework is presented in which more background information on social media, influencers, and virtual characters are provided, and the different variables in this research are introduced. Based on the theoretical framework, hypotheses are concluded and combined in a research model. Thereafter, the research methodology and designs are elaborated, followed by the results and findings of this study. Subsequently, the main findings are discussed, and the implications and limitations of this research are presented. In closing, a conclusion of this study is provided.

2. Literature Review

In the following further background information on virtual characters, the interaction with virtual characters, and their believability is provided. Subsequently, the topics of social media and influencer marketing are discussed. Lastly, the variables in this research and the formulated hypotheses are presented.

2.1 Computer-generated imagery and virtual characters

Computer-generated imagery, short CGI, can be described as the usage of computer graphics for the creation of special effects, characters, or scenes in areas such as movies, print media, or electronic media (Puspasari & Wan, 2012). Especially when creating computer-generated characters, animators strive to achieve the most realistic and authentic appearance possible so that the characters are accepted by the audience. However, an extremely human-like entity can quickly evoke feelings of eeriness, a phenomenon also referred to as the uncanny valley. The uncanny valley effect is a negative emotional response towards artificial characters that appeal too realistic (Wiese & Weis, 2020).

Of course, this phenomenon can also occur on social media if users are suddenly exposed to hyper-realistic CGI influencers. According to Chattopadhyay and Macdorman (2016), the uncanny valley effect can be evoked through two aspects. First of all, category uncertainty, which refers to the inability to determine the category to which an entity belongs, e.g. robot or human. Secondly, a perceptual mismatch which proposes that the uncanniness is caused by a mismatch in the human likeness of an entity's features, e.g., human skin paired with computer-modelled eyes.

In the case of CGI influencers, it can be assumed that identifying an influencer as CGI can cause a feeling of eeriness and, thus, result in the uncanny valley. This is because the influencers look extremely life-like. As a consequence, people might experience discomfort or a shudder, which could harm the endorsed brand.

Virtual characters.

When talking about virtual characters, existing literature reveals two main distinctions, namely virtual agents and virtual avatars. Virtual agents can be identified as acting entities that include artificial intelligence and robotic algorithms, which makes the control of a human dispensable (Balakrishnan & Honavar, 2001). Furthermore, the behaviour of a virtual agent

reflects its algorithm that was designed to accomplish different goals. Nowadays, virtual agents are mostly used by organizations within the customer service area, e.g. for answering customer requests or handling simple problems. Furthermore, they can also be used as click-to-chat features on a company's website (Rouse, 2020).
Virtual avatars, however, are virtual representatives of human beings and are completely controlled by users (von der Pütten, Krämer, Gratch, & Hwa Kang, 2010). In addition, as the behaviours of a virtual avatar mostly reflect those executed in real-time by humans, virtual avatars are mainly found within the gaming industry (Bailenson & Blascovich, 2004).

As CGI Influencers are neither directly controlled by humans in real-time, nor are acting based on robotic algorithms, it can be proposed for future research that the influencers build a new kind of virtual character.

2.1.1 Interaction with virtual characters

Threshold model of social influence

To understand the interaction between humans and virtual characters, the threshold model of social influence by Blascovich (2002) can be applied. According to the model, the degree of behavioural realism of the virtual character, and the extent to which the user believes he or she is interacting with a real human, moderates the effects of virtual characters on users. According to Blascovich, the key to virtual character-human-interaction is social verification. The author describes social verification as "the extent to which participants in virtual groups experience interactions with virtual others in ways that verify that they are engaging in semantically meaningful communication with virtual others thereby experiencing shared reality" (Blascovich, 2002, p. 26).

Social verification is being measured through behavioural realism and perceived agency of a virtual character. Blascovich describes behavioural realism as the degree to which a virtual character behaves in ways a human being would behave (e.g. engage in face-to-face interaction). In addition, an agency is being described as the extent to which individuals perceive virtual characters as representatives of real people in real-time (Blascovich, 2002). Lastly, the author states that, on the one side, if there is a high level of behavioural realism and high agency, a character can be identified as a human being, or as a virtual avatar. On the other side, if there are low perceived behavioural realism and low agency, the character can be identified as a virtual agent. In the case of CGI influencers it can, therefore, be argued that as long as the influencers show a high level of behavioural realism and agency, users interact with the CGI influencers as if they were other human beings.

Social presence

Another important driver for the interaction with virtual characters is perceived social presence. Perceived social presence describes the degree to which someone, or something, is perceived as real in mediated communication (Gunawardena, 1995). In general, people are more comfortable interacting with an online source where they feel that there is an actual human present at the other end (Shen, 2012). Since CGI influencers look very life-like it can be assumed that, as long as CGI influencers cannot be identified as such, a high degree of social presence is conveyed, leading to normal interaction behaviour of individuals. Furthermore, the author states that if users perceive a virtual character as real, they automatically develop stronger emotion of envy and the urge to have what the influencer has. As a consequence, a stronger desire for the advertised brand can be developed (Jin, Muqaddam, & Ryu, 2019).

2.1.2 Believability of virtual characters

To examine what transforms CGI characters into believable individuals on social media, the concept of believability can be applied. Mateas (1999) describes a believable character as one who seems life-like, whose actions make sense, and, who minimizes disbelief. One of the most comprehensive works on believable agents, so far, is the one by Loyall and Bates (1997). The authors identified seven key features that make a virtual character look believable within the virtual environment. These features are personality, emotion, self-motivation, change, social relationships, consistency of expression, and the illusion of life.

First of all, personality. Personality describes the extent to which a virtual character behaves online (e.g. how they talk, move, and the way they think). The second key factor that makes a virtual character look realistic is the extent to which a character shows emotion and responds to the emotions of others. According to Loyall and Bates, hereby it is important to understand that a believable virtual character is not only expected to show emotions in specific situations which normally result in an emotional reaction, but that the strength of this reaction depends on the history of emotional encounters of the character, its personality, and the degree to which the situation causing an emotional response affects the emotional state of the virtual character. Followed by perceived emotions are self-motivation, and change. Self-motivation refers to the extent of own internal drives and desires. In addition, change refers to the extent to which the virtual character changes over time in terms of personal developments (Loyall & Bates, 1997). The next factor is social relationships and refers to the extent to

which a character engages in detailed interactions with others. To build human relationships, spoken conversations are crucial. Therefore, animators need to create characters that can interact with others over a long time to form relationships (Vinayagamoorthy et al., 2006). Another factor that drives believability is the consistency of expression. To communicate a unified message, facial expressions, body posture and movements of virtual characters must always work together. If this is not the case, category uncertainty and a perceptual mismatch can be facilitated. The last factor is the illusion of life. The illusion of life refers to the extent to which a virtual character is pursuing multiple goals and actions, has broad capabilities in terms of movement, perception, memory, and language, and, lastly, reacts quickly to stimuli in the environment (Loyall & Bates, 1997).

Consequently, it can be argued that the way CGI influencers present themselves on social media facilitates the perceived believability of the characters. It can, therefore, be assumed that CGI influencers could be successful endorsers, since consumers would not behave differently if they were in the presence of CGI influence, but would perceive the influencer as a credible person.

2.2 Social media and Influencer marketing

With the introduction of social media, communication between organizations, communities, and individuals has changed. Social media can be defined as highly interactive online platforms which allow its users to share, create, discuss, and alter user-generated content (UGC) (Kietzman, Hermkens, McCarthy, & Silvestre, 2011). Additionally, UGC refers to content on the internet which is produced by the general public rather than by paid professionals or brands (Daugherty, Eastin, & Bright, 2008). Among the most popular social media platforms in 2020 are Facebook, Instagram, and YouTube with each over one billion active users (Clement, 2020). It can, therefore, be said that social media is an important and powerful mean of communication in modern society. Brands nowadays make use of social media platforms to promote their products and services. This is also referred to as ‘social media marketing’ (Nadaraja & Yazdanifard, 2013). The marketing strategy provides many benefits and challenges for brands, for example, it reduces general marketing costs (Weinberg, 2009), facilitates consumer interaction (Alassani & Goeretz, 2019), and increases word-of-mouth (Hill, Provost, & Volinsky, 2006). However, brands also have to be more careful as social media facilitates the spread of negative feedback among consumers. This can have a dramatic impact on a brand’s reputation (Roberts & Kraynak, 2008).

To avoid a negative brand image, developing a successful social media strategy is crucial. A very popular and powerful strategy nowadays is influencer marketing.

Influencer Marketing

Influencer marketing is a very common marketing tool for brands nowadays. Instead of spending a lot of money in marketing directly to a large group of consumers, brands use so-called 'influencers' as a bridge to connect directly to their target audience over social media. Influencers can be defined as a new type of independent third-party endorsers who shape audience attitudes through social media postings (Freberg, Graham, McGaughey, & Freberg, 2011). Another term that is used to describe influencers is the term 'opinion leader'. According to Katz, Lazarsfeld, and Roper (1965), opinion leaders are individuals who are likely to influence others in their direct surroundings. However, for the remainder of this study, the term influencer is being used as it is the most prominent one in research and society.

Influencers can be classified into four main categories, namely nano, micro, macro, and mega influencers. This distinction is made based on their popularity. While nano influencers usually have an audience size of 10 thousand and fewer followers, mega influencers, such as celebrities, reach over a million people on social media (Foxwell, 2020). CGI influencers are currently moving between the level of a micro-influencer (10,000 - 100,000 followers) and a macro influencer with an audience between 100 thousand and one million followers. Ultimately, influencer marketing refers to the investment of brands in individuals who have a strong influence on an audience to increase the overall brand reach, sales and brand engagement (Sudha and Sheena, 2017). Unlike celebrities who are known through traditional media, influencers on social media can be "ordinary people" who have become online celebrities by simply creating and publishing user-generated content (Lou & Yuan, 2019). Hence, influencers are often perceived as people with whom others can easily identify and connect with. Moreover, influencers show expertise in particular fields, such as beauty, fashion, or gaming. Therefore, they are considered as a reliable source by their audience (Hall, 2016). Also, according to Talavera (2015), influencer posts on social media are perceived as more authentic and truthful than posts that come directly from a brand. Brands seem to have recognized the changing behaviour of their consumers. From 2017 to 2019 alone, the influencer marketing industry grew from three billion to a 6.5-billion-dollar industry, still rising (Guttmann, 2020).

Instagram

Influencers can be found nowadays on various social media platforms; however, one seems to stand out the most. The video and picture-sharing platform Instagram has become one of the most popular online platforms in influencer marketing. In 2016, Instagram was even ranked as the most influential social media platform in the world (Alassani & Goeretz, 2019). The platform allows its users to upload pictures and videos, sharing them either publicly with their followers or privately with their friends ("About Instagram", 2019). This provides a neutral ground for brands and influencers to establish mutually beneficial relationships. Brands can use influencers on Instagram to market their products or identify niche audiences, while influencers can help brands increase their reach and awareness by sharing branded content or personal recommendations with their audience (MediaKix, 2019). Hund (2017) even discovered the so-called 'Instagram effect', meaning that everything that happens on Instagram increasingly moderates the way people learn about, interact with, and purchase items. Indeed, according to Suciu (2019), 70% of the users on Instagram use the platform to look up brands, and 60% of consumers make use of social media platforms to learn about new products. This seems to apply especially to Millennials and GenZ. Instagram appeals mostly to a younger audience. As statistics have shown, 65% of Instagram users are between 18 and 34 years old, which makes nearly two out of every three adults in this age group use the platform (Clement, 2020). Finally, what makes Instagram so influential and indispensable for brands is that 200 million users are visiting a brand's profile at least once a day (Suciu, 2019).

2.3 Hypotheses

In this research, the effect of influencer CGI identification on consumers purchase intentions and brand attitude is investigated. In the following, the two variables and important drivers are elaborated.

2.3.1 Consumers purchase intentions

The purchase intentions of consumers are decisive for the existence of a brand. With the rise of social media influencers, however, brands are less and less able to influence this themselves. A consumer's purchase intention can be described as a conscious plan to make an effort to purchase a brand's product or service (Spears & Singh, 2004). In addition, as purchase intentions include the possibility that a consumer purchases the brand's product at the end, it can be said that purchase intentions facilitate actual purchase behaviour (Magistris & Gracia, 2008). When trying to explain consumers' purchase intentions based on the promoted content by influencers on social media, the social learning theory by Bandura

(1994) can be applied. The theory states that people are more easily influenced by individuals that are perceived to be similar to them. Hence, if a consumer is exposed to a social media post of an influencer who is perceived to be similar to them, purchase intentions may increase. In addition, previous research has further shown that the consumer's perception of an advertisement (Lou & Yuan, 2019), and the perceived match between an influencer and a brand (Mishra, Roy, & Bailey, 2015), are two crucial drivers for purchase intentions. This will be further discussed in the following.

When working with CGI-Influencers, it remains to be examined whether consumers' purchase intentions are evoked for the same reasons as if a brand were working with a human influencer. However, it can be hypothesized based on the social learning theory by Bandura, that individuals would be less likely to purchase a product which is promoted by a computer-generated influencer because they cannot identify themselves with something that is not real. Therefore, the following is proposed:

H1: CGI influencers negatively affect consumers purchase intentions.

Instagram post originality

Previous literature has shown that the generated content of influencers affects consumers overall perception of a brand (Casaló, Flavián, & Ibánez-Sánchez, 2018). Regarding this, especially two content characteristics can be identified, which are the originality of the post, and the perceived uniqueness of the influencer. Originality can be referred to as the extent to which the actions of the influencer are perceived as unusual, innovative, and ambitious (Casaló, Flavián, & Ibánez-Sánchez, 2018). Furthermore, creating original and authentic content is a way for influencers to represent themselves and to engage with their audience. As Peters, Kashima, and Clark (2009) established perceived originality facilitates users overall willingness to engage with an influencer. Ultimately, customer engagement is an important goal for brands as it naturally results in purchase intentions (Robert & Albert, 2010). As a consequence, it can be argued that the originality of an Instagram post drives consumers' purchase intentions.

Because CGI influencers are a new phenomenon, it can be assumed that they are perceived as highly unusual and original by the general public. Hence, if a brand collaborates with a CGI influencer, and is posting content on their social media profiles about it, it can be proposed that consumers might perceive their social media content as more original, which might facilitate purchase intentions. Therefore, the following can be hypothesized:

H2: CGI influencers positively affect perceived Instagram post originality

In addition, as the consumer's perception of an advertisement influences purchase intentions (Lou & Yuan, 2019), the following is further hypothesized:

H2a: Perceived Instagram post originality mediates the relationship between CGI influencer identification and consumers' purchase intentions.

Instagram post uniqueness

The second content characteristic that influences purchase intentions is the perceived uniqueness of an Instagram post. To differentiate from other brands on social media, brands should create content that is not only original but also unique. According to Aaker (1990), brand differentiation makes brands more desirable to consumers and establishes a distinctive brand personality. To achieve this, the collaboration with influencers who are perceived as highly unique by their followers can be essential. Maslach, Stapp, and Santee (1985) describe the uniqueness of a person as the state in which people feel differentiated from other individuals around them based on their behaviours. It is connected to the extent to which the behaviour of a person is perceived as being specific, really special and different. When an influencer is being perceived as unique, a personal image is created that other individuals might admire (Gentina, Shrum, & Lowrey, 2016). Also, it can be argued that uniqueness can be related to the overall perception of being an influencer. This can be explained as users on social media search for opinions and recommendations of individuals based on their perceived uniqueness (Bertrandias & Goldsmith, 2006).

Hence, it can be hypothesized that if a brand collaborates with a novel and unique CGI influencer on social media, perceived content uniqueness will increase. Therefore, the following hypotheses are created.

H3: CGI influencers have a positive effect on perceived post uniqueness.

H3a: Perceived Instagram post uniqueness mediates the relationship between influencer CGI identification and purchase intentions.

Influencer match-up

Another important driver for purchase intentions is the perceived match between an influencer and a brand. Therefore, to ensure a successful campaign, brands should choose an influencer whose personal area of interest corresponds to their own. According to Hall (2016), this match-up can increase consumers' trust in the opinion of an influencer, which ultimately affects purchase intentions. In previous studies, primarily the match between a celebrity and the endorsed product was tested (Kahle and Homer 1985). Hereby, it was found that attractive celebrities, for example, are more effective when endorsing products that are used to enhance one's attractiveness. Furthermore, Mishra, Roy, and Bailey (2015) found out that a collaboration with an influencer whose personalities are congruent with the personalities of a brand enhances the personality branding of a brand. Consequently, as Hall (2016) already stated, this leads to a heightened perception of the influencer's suitability and credibility and will positively impact consumers' attitudes and intentions.

In the case of CGI influencers, everything posted on social media comes directly from the company that stands behind the influencer, not from a real person. It can, therefore, be assumed that consumers might perceive a low match between a CGI influencer and the endorsed brand since the perceived "personality" of the influencer is only designed and not real. Moreover, since the influencer is only computer-generated, consumers may not fully believe the influencer's product recommendations because the products were not actually tried out. Hence, the following can be hypothesised:

H4: CGI influencers negatively affect the perceived match between an influencer and a brand

Furthermore, as the perceived match between an influencer and a brand also facilitates purchase intentions, the following can be proposed:

H4a: Perceived influencer-brand match mediates the relationship between influencer CGI identification and purchase intentions

2.3.2 Brand attitude

Brand attitude can be described as an individual's favourable or unfavourable evaluation for a specific brand or product in the market (Kotler & Armstrong, 1996). Hence, a positive brand attitude can be perceived as another crucial driver for the existence of a brand. If consumers, for example, have a negative attitude towards a product or a brand, they are less likely to make a purchase or recommend the brand to others. Furthermore, consumers' attitudes are formed over a period of time through experiences with a brand, and, therefore are only slowly changing (Boone & Kurtz, 1995). Hence, creating positive user experiences is essential. As brands increasingly promote their products on social media via influencers, however, the responsibility lays on the influencers to ensure a positive brand experience. Yet, it is still questionable whether influencers who are not real can create favourable evaluations of consumers towards a brand. As CGI influencers cannot try a brand's products or services, consumers might find their advertisements on social media difficult to believe. Hence, the following is proposed:

H5: CGI influencers negatively affect a consumer's brand attitude

In this respect, previous research has also shown that an influencer's character traits such as perceived credibility and the attractiveness, influences the brand attitude of consumers (Meenaghan 1994). This is further elaborated in the following.

Influencer Credibility

Credibility can be defined as the degree of trustworthiness and reliability of a source (Rogers & Bhowmik, 1970). Hereby, trustworthiness relates to a consumer's perception of honesty, integrity, and believability of an influencer (Erdogan, 1999). Also, previous research has shown that trustworthy endorsers have more persuasive power than untrustworthy endorsers (Priester & Petty, 2003). In the case of CGI influencers previous studies can be applied who suggested that with a more human-like appearance, virtual characters are perceived as more competent to make decisions and, therefore are more trustworthy (Gong, 2008). Moreover, a study by Nass and Moon (2000) revealed that, in a virtual environment, people especially seem to trust a more expressive virtual character with an identical ethnicity.

Even though CGI influencers look very life-like, the core of influencers is to promote branded products based on true experiences and evaluations. As CGI influencer cannot have

real experiences, it can be assumed that consumers will not trust the opinion of a computer-generated entity. Hence, the following can be proposed.

H6: influencer CGI identification negatively affects the perceived trustworthiness of an influencer

Furthermore, since the trustworthiness of an endorser is a crucial driver for a consumer's brand attitude:

H6a: Perceived trustworthiness of an influencer mediates the relationship between influencer CGI identification and consumers' brand attitude

Credibility can also be defined by the perceived reliability of a source. In this regard, an influencer is perceived as reliable if he or she can be classified as an expert in their field. According to Mccroskey, Holdridge, and Toomb (1974), to achieve perceived expertise, an influencer needs competence or qualification, including knowledge and skills to make specific claims relating to a certain topic. Furthermore, the authors state that a high level of perceived expertise also leads to a high level of trust. Since it can be assumed that computer-animated characters cannot show real expertise in a field, the following is hypothesised:

H7: CGI influencer identification negatively affects the perceived expertise of an influencer

H7a: Perceived expertise of an influencer mediates the relationship between influencer CGI identification and a consumer's brand attitude

Influencer Attractiveness

The perceived attractiveness of a source can be a strong peripheral cue for consumers' decision making. To explain source attractiveness, the attitude change model by McGuire (1960) can be used. McGuire defines attractiveness as the consumer's perceived likability, familiarity, and similarity with an influencer. Especially in the case of perceived similarity, as mentioned previously, a study by Bandura (1963) found that individuals are more likely to be influenced by social figures that are perceived to be similar to them. Also, it was found that attractiveness of influencers is important because it can easily evoke a halo effect, meaning that individuals ascribe characteristic traits to an influencer based on superficial cues. For

example, Erdogan (1999) discovered in a study that attractive people are also perceived to be smarter. Lastly, Nisebett and Wilson (1977) found out that attractiveness of an endorser can also be linked to good product functionalities. Based on this, it can be said that source attractiveness is crucial. In the case of CGI influencers, however, it can be assumed that consumers are more likely to perceive the influencers as an artificial entity, rather than as another person with similar needs and interests. Hence, consumers might struggle with identifying themselves with the new influencers. Therefore, the following can be proposed:

H8: Influencer CGI identification negatively impacts the perceived attractiveness of an influencer

H8a: Perceived attractiveness mediates the relationship between influencer CGI identification and a consumer's brand attitude

In the following, a summarized overview of the hypotheses is provided (table 1). Subsequently, a research model was created and is depicted in figure 4.

Hypothesis	
H1	CGI influencers negatively affect consumers purchase intentions.
H2	CGI influencers positively affect perceived Instagram post originality
H2a	Perceived Instagram post originality mediates the relationship between CGI influencer identification and consumers' purchase intentions.
H3	CGI influencers have a positive effect on perceived post uniqueness.
H3a	Perceived Instagram post uniqueness mediates the relationship between influencer CGI identification and purchase intentions.
H4	CGI influencers negatively affect the perceived match between an influencer and a brand
H4a	Perceived influencer-brand match mediates the relationship between influencer CGI identification and purchase intentions
H5	CGI influencers negatively affect a consumer's brand attitude
H6	influencer CGI identification negatively affects the perceived trustworthiness of an influencer
H6a	Perceived trustworthiness of an influencer mediates the relationship between influencer CGI identification and consumers' brand attitude
H7	CGI influencer identification negatively affects the perceived expertise of an influencer
H7a	Perceived expertise of an influencer mediates the relationship between influencer CGI identification and a consumer's brand attitude
H8	Influencer CGI identification negatively impacts the perceived attractiveness of an influencer
H8a	Perceived attractiveness mediates the relationship between influencer CGI identification and a consumer's brand attitude

Table 1. Overview of hypotheses.

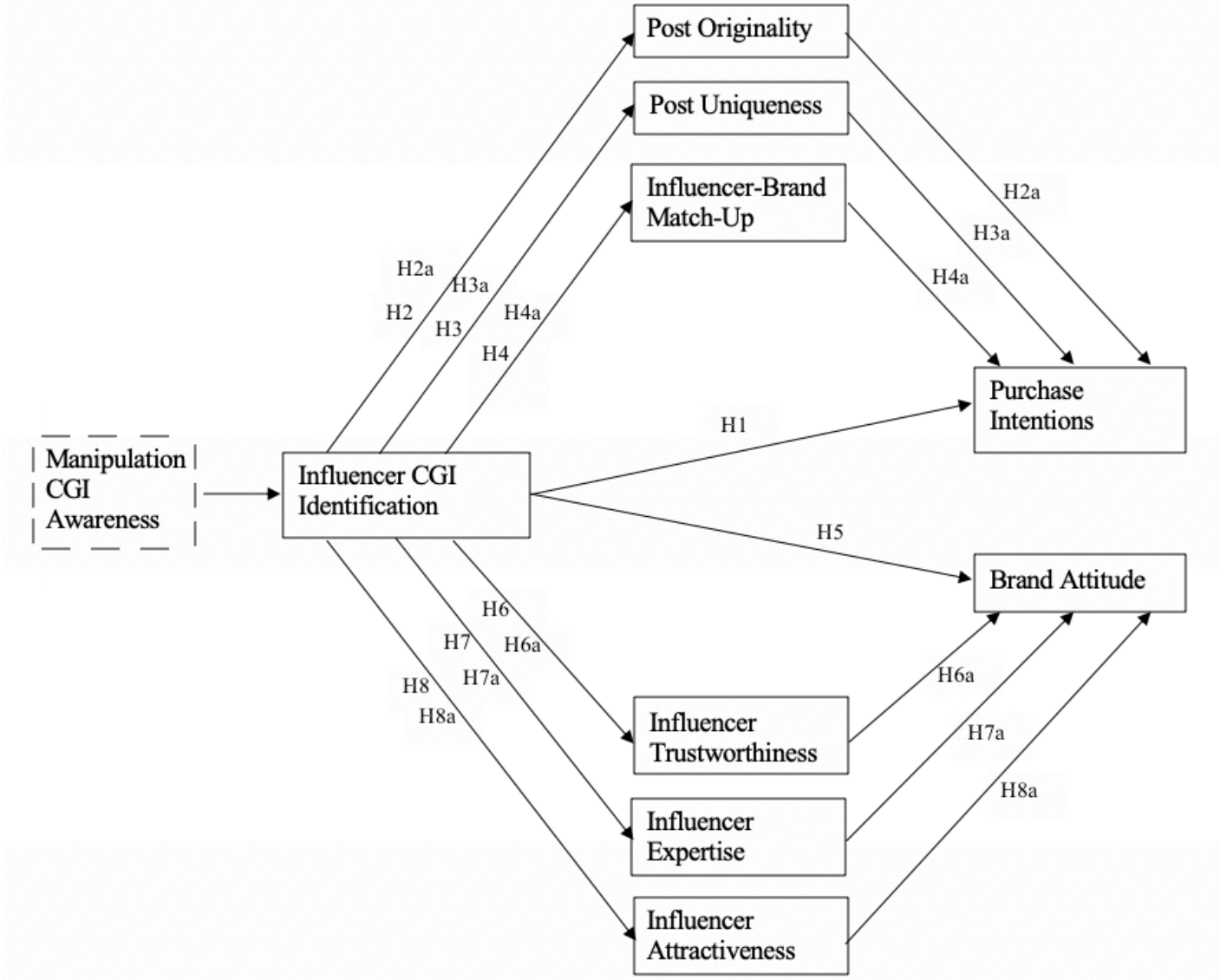


Figure 4. Research model.

3. Methods

3.1 Design

To test the effect of virtual influencers on consumers purchase intentions and brand attitude, a quantitative research experiment was conducted. In this respect, an online survey with closed-ended question items was designed using the tool Qualtrics. Furthermore, for the sampling procedure, a convenience sampling method in combination with a snowball sampling method was used. Furthermore, the online survey was solely shared on social media platforms such as Instagram, Facebook, and Linkedin. In addition, to exclude any language barriers and reach as many people as possible, the survey was completely conducted in English. Moreover, to find out if the recognition of an influencer being CGI influences consumers in their choices, a between-subjects design was chosen for this study. Hence, participants were randomly divided into two groups when filling out the study. While one group was told that the influencer in this study is CGI, the other group was deprived of the information.

In the following, the different steps leading up to the main study are elaborated. First of all, insights in the conducted pre-test are given, followed by a detailed description of the chosen influencer, the case, and the stimulus material for this research. Subsequently, the procedure and used measurements of this study are presented, followed by a description of the sample characteristics.

3.2 Pre-study

To find the right CGI influencer that appears as most realistic for the main study, a quantitative pre-test was conducted. For this purpose, an online survey was created using the tool Microsoft forms. Microsoft forms was chosen for the pre-test because only a small audience was targeted, and the tool is better suited for simple, small surveys. Since previous researchers have used different strategies to analyse the perceived realism of animated characters in a virtual environment, this pre-test used previously used measurement scales and items which were slightly adjusted to fit the social media context. The chosen scales for this research were the German Simulation Realism scale by Poeschl and Doering (2013), the Godspeed scale by Bartneck, Kulic, and Croft (2009), the interpersonal attraction scale by Davis and Perkowitz (1979), and the 5-item social presence scale by Bailenson et al., (2003). To obtain a more diverse and larger sample, the pre-test was conducted in English. Additionally, a convenience sampling method was used for collecting the data. Before the

study started, four different CGI influencers were chosen based on different criteria. The first criterion was the number of people who follow the CGI influencer on Instagram. To ensure that the influencer is not too well-known among the participants, only CGI influencers with a follower rate below 250,000 were included. The second criterion was a high level of perceived realism. If a CGI influencer was perceived as highly realistic by other users, e.g. if other users interacted directly with the influencer in the comments section, the influencer was included in the pre-test. Another criterion was the overall realistic appearance, judged directly by the researcher. Hereby, points like natural posture, gesture, and facial expressions were considered. The last criterion was that the influencer had to wear the same fashion item in two different pictures. This was important as the pictures would also serve for the main study later on. Based on the criteria, the CGI influencers Shudu, Blawko, and Imma were picked for the pre-study. Additionally, the currently best-known CGI influencer Lil Miquela was added to the study to find out if the participants are generally aware of CGI influencers, as Lil Miquela has already over 2 million followers. The chosen CGI influencer pictures can be found in figure 5.

Figure 5.

Chosen CGI influencers for the pre-study.

1) *CGI influencer Imma.*

2) CGI influencer Blawko.

3) CGI influencer Lil Miquela.

4) CGI influencer Shudu.

At the beginning, and during the survey, a total of 14 participants were exposed to the different images of the CGI influencers. In addition, based on their first impression of the pictures, the participants were asked to answer a set of 20 questions. The question items can be found in Appendix A. The results showed that the Asian CGI influencer Imma was on average considered the most realistic among the presented CGI influencers. The influencer scored particularly well, for example, only two participants stated that the overall appearance of the influencer was artificial and that they had the feeling they were not in the presence of another human being. In second place was the American male influencer Blawko, followed by the CGI model Shudu. In the last place, surprisingly was the most popular CGI influencer, Lil Miquela. Although the influencer has already worked with well-known brands such as Calvin Klein and Samsung, she came in last. In her case, six participants stated that they felt like the influencer was not human. Hence, based on the results, CGI influencer Imma was selected for the main study.

3.2.1 CGI influencer Imma

Imma is a computer-generated influencer that was created in 2018 by the Japanese tech company ModelingCafe Inc., which is specialized in CG modelling (About ModelingCafe, n.d.). To make the character appear as realistic as possible, the creators of the influencer paid attention to the smallest details such as facial expressions, make-up, and personal style. Just like CGI influencer Lil Miquela, Imma is posting pictures and videos on Instagram of her 'lifestyle', including meeting friends, going to events, or modelling for popular fashion brands

such as Calvin Klein, Burberry, or Puma (Imma, 2020). In 2020, Imma was even on the cover of the Chinese edition of the popular international fashion magazine Grazia. Moreover, the influencer just became Magnum's first-ever virtual brand ambassador (Imma, 2020).

3.2.2 The Puma Case

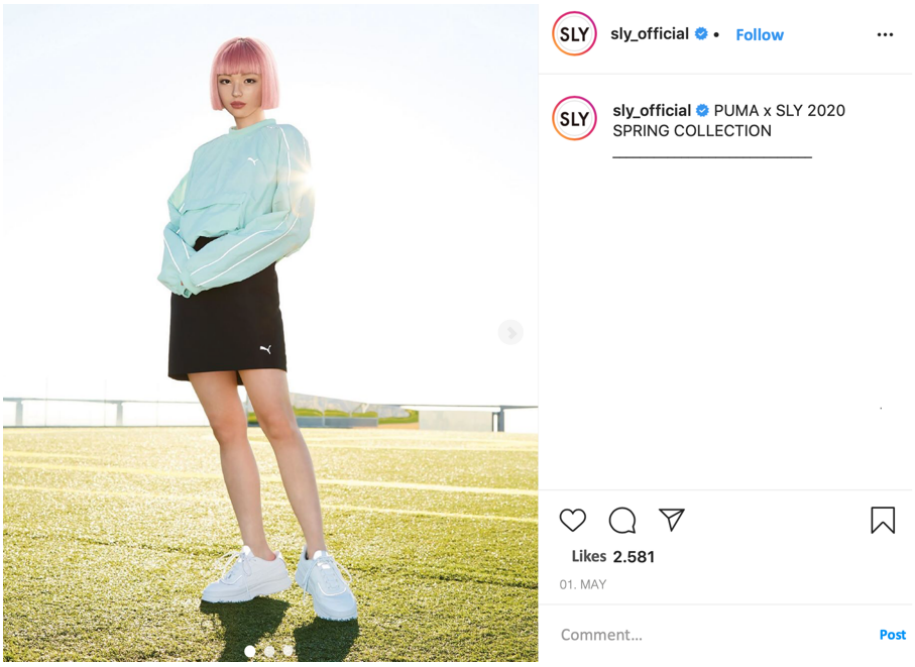
The pictures that were presented in the pre-study of virtual influencer Imma belonged to an Instagram post of the Asian fashion brand SLY. This year, SLY collaborated with one of the leading sports brands in the world, Puma, for Puma's new spring collection. Hereby, Imma was chosen as the "face" of the collection. To promote the new fashion items, Puma and SLY posted pictures and videos on social media of the CGI influencer wearing the new pieces from the collection. Thereby, one specific item of the new collection stood out the most - the white Puma 'DEVA WNS' sneaker. The item was worn multiple times by the virtual influencer. Moreover, as the sneaker can be worn by both men and women, it was chosen as the product to purchase for this study. In addition, the Instagram posts by the brand SLY served as inspiration for the design of the stimulus material.

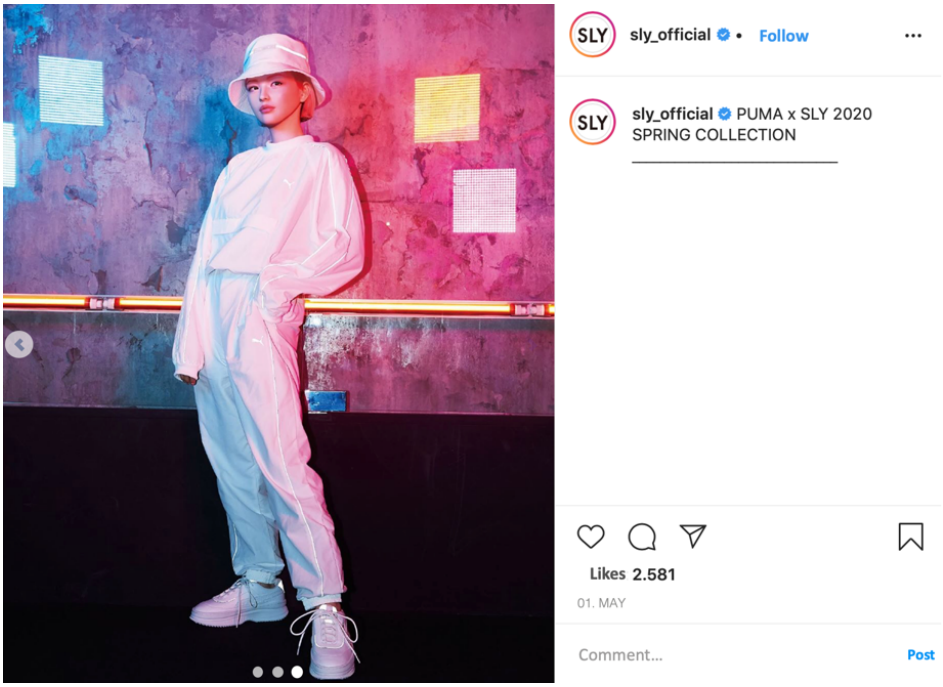
3.3. Stimulus Material and Design choices

For the stimulus material in this study, an Instagram interface was mocked up showing one post that contains three images. In addition, the Instagram post was created in English and contained the same layout and structure as the desktop version of the platform. The desktop version of the platform was chosen because the images are displayed larger than on the mobile version. This was important because the evaluation of the influencer as either CGI or human was only based on the images. In this regard, the usual commentary section next to the visuals has been omitted to avoid any distractions and to direct the focus of the participants exclusively to the pictures. Furthermore, the Instagram post contained three images to create a better illusion of a typical brand's promotion post. Hence, two images of the influencer and one image of the purchased product in this study were included. Since the aim of this study is to find out what would happen if a brand started working with a CGI influencer at this point and published content containing a CGI influencer on social media, a verified brand account was chosen as the publisher of the posting. Since the original images were posted from SLY's Instagram account, the brand was also chosen as the publisher in the main study. Finally, to make the Instagram post look more believable, small details such as the date, the number of likes and a description have been added. The final designs can be found below in figure 6.

Figure 6.

Stimulus material





3.4 Procedure

Before the study started, an opening statement was presented to the participants in which the purpose of the study and information on risks and data protection were provided. Hereby, any kind of information about the influencer in this study being computer-animated was yet withheld. At the end of the opening statement, the participants were asked to give consent for their participation in this research. After consent was given, participants had to specify their demographics and general familiarity with the brand Puma had to be indicated. Afterwards, the participants were randomly divided into two conditions to find out whether CGI identification influences users in their choices. In this regard, two different briefings for the participants were created. The exact briefings can be found in Appendix C. Individuals in the first condition were told that in this study they see the virtual influencer Imma, the new face of Pumas newest spring collection. Additionally, they were told that the CGI influencer belongs to the new, emerging influencer generation on Instagram, and has already collaborated with big fashion brands like Calvin Klein, Burberry, Dior, and Nike. Participants in the second condition were told that the influencer in this study is a Tokyo-based fashion influencer who is now the new face of Puma's latest spring collection. Furthermore, they were told that the influencer currently has 175,000 followers on Instagram and has previously collaborated with the previously mentioned fashion brands (Calvin Klein, Burberry, Dior, and Nike). After the briefings were presented to the participants, the Puma case and the stimulus material was shown. Hereby, all respondents were advised to take a close look at the stimulus material before proceeding with the study, as the Instagram post was only presented once. In

addition, for later analysis purposes, a timer was implemented when presenting the stimulus material, to exclude individuals from the sample who directly skipped the part. After the stimulus material was presented, the participants had to answer the same set of questions. First of all, the familiarity with the Influencer had to be indicated, followed by the perceived uniqueness and originality of the Instagram post. Secondly, the perceived match between the influencer and the brand, and general brand attitude was measured. Subsequently, the participants were asked to state the perceived expertise trustworthiness and attractiveness of the CGI influencer. In the end, to find out whether the participants perceived the influencer as realistic or not, questions had to be answered measuring para-social interactions, perceived realism, and social presence of the influencer. Most importantly, participants in the second condition were not told that the influencer was CGI. This was important to prevent any future bias in the sample, as a snowball sampling method was used for the data collection.

3.5 Measurements

At the beginning of the online survey, the demographics of the participant were measured. Hereby the participants had to indicate age, gender, home country, level of education, and current employment status. In addition, general Instagram usage behaviour and questions about the participants' current experiences with influencers were included in the demographics. The survey in this study mainly used a 7-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’. However, four exceptions have been made for items which do not measure a specific construct. For example, when asking about whether a participant would recognize the influencer, a 5-point Likert scale was used ranging from ‘strongly agree’ to ‘strongly disagree’. In addition, when asking about whether participants are likely to purchase a product of the brand Puma, answers had to be indicated using simple ‘yes’, ‘no’, and ‘I am not sure’ options. Further exceptions are mentioned below. In addition, to avoid any complications in the later analysis process, values such as ‘strongly disagree’ and ‘I am not sure’ were coded as 1, whereas ‘strongly agree’ and ‘yes’ was coded with the highest number, here, either 3, 5, or 7. The survey entailed a total of 53 questions, excluding the demographics. Moreover, mainly existing scales for the measurement of the variables were used. In addition, some question items got slightly rephrased or adapted by the researcher to fit in the context of this research. The complete survey can be found in appendix B.

3.5.1 Influencer CGI Identification

To measure whether a CGI influencer can also be identified as such, three sub-scales were used which all indicate whether a person perceives a virtual character as realistic or not. The three scales are social presence, para-social interactions, and perceived realism. In addition, all items were displayed using a 7-point Likert scale ranging from 1= 'strongly disagree, indicating that the influencer is recognized as CGI, to 7= 'strongly agree', indicating that the influencer is recognized as human. Lastly, all items stating that the influencer is not real were re-coded, to achieve the highest possible score in overall influencer-human recognition.

Social presence

Social presence was measured using the 5-item Social Presence Survey by Bailenson et al. (2003). This scale was chosen because it entails question items that indicate whether a person perceives a virtual character as realistic or not. All five items have been slightly rephrased by the researcher to fit in the context of this study, however, the meaning of the questions remained the same. For example, the original item 'The thought that the person is not a real person crosses my mind often', was changed into 'The thought of the influencer not being real crossed my mind'. Another example item from this scale was 'The influencer appeared to be alive to me.'.

Para-social interaction

To measure whether a consumer would be likely to interact with a virtual character, three questions have been adapted from a study by Davis and Perkowitz (1979) in which responsiveness and interpersonal attraction between individuals were investigated. To fit in the context of this study, the question items were slightly rephrased by the researcher. For example, 'How well do you think you get along with your partner' was rephrased into 'I think that I would get along with the influencer'. Another example question that was included in this section was 'I would enjoy a casual conversation with the influencer'.

Perceived Realism

To measure the perceived realism of the influencer and simultaneously the possibility of falling into the uncanny valley, three items were derived and slightly rephrased, from the German Simulation Realism Scale (GSRS) by Poeschl and Doering (2013). In general, the GSRS is used to measure the simulation realism for applications including virtual humans. Question items in this section included, for example, 'The posture of the influencer is

natural', or 'The facial expressions of the influencer look artificial'. Furthermore, three question items have been added by the researcher to get even more information suitable for this research, namely 'The scenario in the post looks realistic', 'The overall appearance of the influencer is human-like', and 'The influencer is conscious of her actions'. For the items that have been added by the researcher, the German Simulation Realism scale, and the Godspeed scale by Bartneck, Kulic, and Croft (2008), which measures human and robotic interaction, served as an orientation.

3.5.2 Brand attitude and purchase intentions

The variables brand attitude and purchase intentions were measured using the same scale developed by Singh and Spears (2004). Based on existing studies, the two authors developed measurements of consumers' brand attitude and purchase intentions in relation to the representation of a brand's advertisement. In this study, the items were depicted using a 7-point Likert scale ranging from 1= 'totally disagree', indicating that the participants have a negative brand attitude and no purchase intentions, to 7= 'totally agree', indicating a positive brand attitude and high purchase intentions.

Brand attitude

Brand attitude was measured using five items in total, again, the question items were slightly rephrased by the researcher. For example, items in this section included 'Puma is appealing', 'Puma is a good brand', or 'Puma is a favourable brand'.

Purchase intentions

To measure the willingness of the participants to purchase the promoted product by the influencer, the single item 'I would purchase the sneaker that is promoted by the influencer' was added to the survey.

3.5.3 Mediator variables

The mediator variables post originality and uniqueness, influencer-brand match, trustworthiness, attractiveness, expertise, were measured using several items which were all depicted on a 7-point Likert scale. Hereby, 1= 'strongly disagree' indicates that the participants show a low score on the mediator variables, e.g. low level of expertise, or perceived post originality and uniqueness, and 7= 'strongly agree', indicating a high score of the variables.

Instagram post uniqueness and originality

The perceived uniqueness and originality of the Instagram post was measured using eight items in total.

For uniqueness, three items were adapted from a scale by Frank and Schreier (2008), which measures general product uniqueness. Again, the items were slightly rephrased by the researcher to fit in the context of this research. For instance, participants had to answer questions such as 'The Instagram post is one of a kind', or 'The Instagram post is unique'.

To measure post originality, five items were adapted from a scale by Moldovan et al. (2011), measuring product originality. Items in this section included, for example, 'The Instagram post is original', or 'The Instagram post is unusual'.

Influencer-brand match

To measure Influencer brand match-up, four items were added by the researcher based on existing literature. Hereby, the match-up hypothesis between endorsers and brands by Busler and Till (2013), and the study by Breves, Liebers, Abt and Kunze (2019) about the perceived fit between Instagram Influencers and the Endorsed Brand, served as an orientation. Question items in this section included 'The influencer is a believable representative of the brand Puma', or 'The influencer is a threat for Puma's brand image'.

Trustworthiness, expertise, and attractiveness

The mediator variables trustworthiness, expertise and attractiveness of the influencer were measured using five to six items each, all derived from the celebrity endorser-credibility scale by Ohanian (1990).

The trustworthiness of the influencer was measured using a total of five items. Hereby the respondents were asked to indicate whether they perceive the influencer as dependable, honest, sincere, trustworthy, and unreliable. For example, 'The influencer is dependable', was one of the chosen question items.

Perceived expertise was also measured with five items in total. Hereby, the participants were asked to state whether they think the influencer is an expert, inexperienced, qualified, knowledgeable, and unskilled. Therefore, one example question was 'The influencer is an expert in fashion'.

Lastly, attractiveness was measured using six items in total. In this case, the researcher added a variable to test the consistency of a participant's answers. Hereby, the participants

were asked to state whether they perceive the influencer as attractive, classy, elegant, handsome, sexy, and ugly. The last item was hereby added by the researcher. An example question included ‘The influencer is attractive’.

3.5.4 Previous brand experiences

To investigate whether existing attitudes of the participants towards the brand would influence their purchase intentions of the product, questions about the previous brand experience were added to the survey. Therefore, participants had to indicate their familiarity and general perception of the brand, followed by previous purchase behaviour.

Brand perception and familiarity

To measure brand perception and familiarity, three items were added to the survey. Furthermore, the items were all derived from the Online Fashion Brand Recognition scale by Rahman, Hossain, Rushan, and Hoque (2020). The corresponding questions in this section included ‘I am familiar with the brand’, or ‘Puma has a good reputation’. In addition, all three question items were displayed on a 7-point Likert scale ranging from 1= ‘totally disagree’, indicating that the participant is not familiar with the brand, to 7= ‘totally agree’, indicating that they are familiar with the brand.

Previous purchase behaviour

Previous purchase behaviour was measured using two question items. The items were derived, again, from the scale by Singh and Spears (2004) measuring general purchase intentions and brand attitude. The included items were ‘I am likely to purchase a product of the brand’, and ‘I have purchased a product of the brand before’. In addition, the two items had to be indicated using the answer options ‘yes’, ‘no’, or ‘maybe’.

3.5.5 General Influencer familiarity

To find out whether the participants were already familiar with the shown CGI Influencer, two question items were added to the survey by the researcher. The question items were not derived from an existing scale, the participants had to indicate whether they know, and follow the influencer. The chosen items hereby were ‘I am familiar with the influencer in the post’, which was measured using a 5-point Likert scale ranging from 1= ‘strongly disagree’ to 5= ‘strongly agree’, and ‘I follow the influencer on Instagram, which was measured with a

simple ‘yes’, or ‘no’ option. These two questions were added by the researcher to find out whether there are any cases in the control group actually knowing that the influencer is CGI.

3.6 Construct Validity and Reliability

In the following, the reliability and validity of the relevant scales in this research are investigated. To find out whether the different items would measure the constructs they were supposed to measure, and whether the items would be distributed in the expected constructs, a principal component’s analysis was performed. In addition, to check for the internal consistency of the scales, the Cronbach’s Alpha coefficient was calculated. In addition, a summarized overview of the results can be found in table 2.

3.6.1. Influencer CGI identification

First of all, the validity of the subscales measuring overall influencer CGI identification was analysed. Therefore, a total of 14 factors were extracted. The principal component analysis revealed the presence of three components with eigenvalues exceeding 1, explaining 35.5%, 13.5%, and 9.5% of variance. In addition, an inspection of the scree plot revealed a clear break after the second component.

Consequently, all items measuring para-social interactions, and perceived realism ended up in one column, which means the items measured what they were supposed to measure. Only one item showed a negative factor loading on its original factor. Hence the item ‘The facial expressions of the influencer look artificial’ was deleted from the scale. Furthermore, with social presence, one item ended up being in another column than the rest of the items. It was found that the item ‘I felt like the influencer was aware of my presence’ would be better suited measuring the construct para-social interactions with a factor loading of .51. Hence, the item can be deleted from the original scale as it does not measure what it was supposed to measure. Furthermore, the analysis revealed another small outlier. Meaning that one item scored in two columns with higher factor loadings on a different construct. The item ‘The influencer appeared to be alive to me’, originally measuring perceived social presence with a factor loading of .495, also ended up measuring the component perceived realism with a factor loading of .57. However, as there is only a small difference between the loadings, it can be considered to keep the item in the original scale. In total, four items scored on two different components, however, the factor loadings for the original component were always the highest. Hence, the factors were kept in the original scale.

After deleting the two items from the scale, a second principal component analysis was conducted which also showed the presence of three components with eigenvalues exceeding 1, now explaining 40.8%, 13.6%, and 9.7% of variance. In addition, the explained variance of all components scored 64.1%. As high percentages of explained variance indicate a strong strength of association, it can be argued that the explained variance is significant. Also, because each eigenvalue for every component is over and above 1, the different scales can be perceived as valid.

For testing the internal reliability of the scales, the Cronbach's Alpha value was calculated. For parasocial interactions the Cronbach's alpha scored $\alpha = .854$, decreasing if any item would be deleted. For social presence, the Cronbach's Alpha scored a sufficient value of .795, also decreasing if an item would be deleted. Lastly, perceived realism scored an Alpha value of $\alpha = .795$, decreasing if any item would be deleted.

3.6.2 Brand Attitude and mediators

To test the validity of the dependent variable brand attitude and its mediator variables, 21 items in total were analysed. The principal component analysis revealed six components with eigenvalues exceeding 1, explaining 31.6%, 12.1%, 9%, 8.3%, 5.3%, and 4.8% of variance. In addition, an inspection of the scree plot revealed a clear break after the third component.
It was revealed that all items measuring the constructs general brand attitude and influencer trustworthiness loaded on one factor, indicating that the items measured what they were supposed to measure. The next construct, perceived expertise, was measured using five items which nearly all loaded with a sufficient factor over and above .3 on the intended construct. However, the factor 'The influencer is unexperienced' showed no loadings on perceived expertise, which means that the item can be deleted from the scale. The last variable 'attractiveness' was originally measured using six items. Again, nearly all six items ended up loading on the intended component with sufficient factor loadings. However, the item 'The influencer is classy' did not score on the intended scale and was thus deleted.

After deleting the items from the scales, a second analysis was conducted which revealed the existence of five components with eigenvalues exceeding 1, explaining 33.6%, 13.0%, 9.5%, 7.1%, and 5.8% of variance. The total explained variance of all five components scored 69.0%, indicating a sufficient validity. Moreover, eigenvalues show the strength of transformation in a particular direction. Each eigenvalue scored over and above 1, which indicates that the items of this research are valid.

For general brand attitude, the Cronbach's Alpha value scored $\alpha = .847$. Furthermore, if the item 'Puma is an unlikeable brand' would be deleted from the scale, the Cronbach's

Alpha would increase up to .864. Perceived expertise scored an Alpha value of α = .763, increasing to .678 if the item 'The influencer is qualified' would be deleted. Moreover, trust scored a Cronbach's Alpha value of .818, increasing up to .850 if the item 'The influencer is unreliable' would be deleted. Lastly, the Cronbach's Alpha value for attractiveness scored α = .822, decreasing if any item would be deleted.

3.6.3 Post originality and uniqueness and influencer-brand match

To investigate the validity of the dependent variable purchase intentions and the mediator variables, a total of 13 factors were extracted. The analysis revealed the presence of three components with eigenvalues exceeding 1, explaining 30.3%, 16.2%, and 9.2% of variance. Furthermore, an inspection of the scree plot revealed a clear break after the second component.

The first construct post uniqueness was measured using three items. The analysis revealed that all three items ended up in one column meaning that they measured what they were supposed to measure. However, one of the items also showed strong factor loadings on post originality. The item 'The post is unique' loaded on post originality with .73, stronger than on the original factor post uniqueness with .40. When looking at the construct post originality, nearly all items scored in one column, meaning that they measured what they were supposed to measure. Only the item 'The post is unusual', scored solely on post uniqueness with factor loadings of .81, indicating that this item does not measure the intended component. The item was deleted. As there are a few overlaps between the factors, the variables post originality and uniqueness were combined for further analysis purposes. The variable influencer-brand match also showed strong internal correlations. Hereby, all factors, except one, ended up loading on one component, indicating that the items would all measure what they were supposed to measure. The only exception that can be made is for the item 'The influencer is a threat for Puma's brand image'. The factor showed no loadings om any of the components and was therefore deleted from the scale. In addition, the one item measuring purchase intentions showed strong correlations with the factors measuring post originality. The item loaded on this component with .53. However, since perceived originality is a strong driver for purchase intentions, it is less surprising that there is a strong overlap between the items. For further analysis purposes, the two variables are considered separately.

The second principal component analysis revealed the presence of two components with eigenvalues exceeding 1, explaining 35.9% and 19.2% of variance. The total explained variance of the components scored 55.1%, indicating a less strong association between the

components. Furthermore, each eigenvalue for the components was over and above 1, which indicates that the scales can be perceived as valid.

For the combined scales post originality and uniqueness, the Cronbach's Alpha scored .809, increasing to α = .818 if the item 'The post does not differentiate from others' would be deleted. For influencer-brand-match, the Cronbach's Alpha scored only .639. Therefore, to reach a significant level of α = .703, the item 'The influencer is a threat for Puma's brand image' was deleted from the scale.

To conclude, as all scales reach a sufficient Cronbach's Alpha value over and above 0.7, it can be said that the scales have high internal consistency and, hence, are considered reliable.

Factor analysis DV - (rotated component matrix)

	Factor									
Statements	1	2	3	4	5	6	7	8	9	10
PSI*_1 - On a personal level I would get along with the influencer	.78									
PSI_2 - On a personal level I would enjoy a casual conversation with the influencer	.80									
PSI_3 - On a personal level I believe that the influencer is someone I could become close friends with	.82									
PR*_1 - The scenario in the post looks realistic		.52								
PR_2 - The influencer is conscious of her actions		.58								
PR_3 - The posture of the influencer is natural		.54								
PR_4 - The outfit of the influencer is adequate		.85								
PR_5 - The overall appearance of the influencer is human like		.79								
SP*_1 - I feel like the influencer was controlled by someone else			.75							
SP_2 - The thought of the influencer not being real crossed my mind			.71							
SP_3 - The influencer appeared to be alive to me			.50							
SP_4 - I perceive the influencer only as a computerized image			.77							
BA*_1 - Puma is appealing				.76						
BA_2 - Puma is a good brand				.84						
BA_3 - Puma is a pleasant brand				.88						
BA_4 - Puma is an unlikeable brand				.45						
BA_5 - Puma is a favourable brand				.75						
TR*_1 - The influencer is trustworthy					.78					
TR_2 - The influencer is dependable					.60					
TR_3 - The influencer is honest					.83					
TR_4 - The influencer is unreliable					.45					
TR_5 - The influencer is sincere					.81					
AT*_1 - The influencer is attratcive						.82				
AT_2 - The influencer is elegant						.62				
AT_3- The influencer is handsome						.81				
AT_4 - The influencer is sexy						.80				
AT_5 - The influencer is ugly						.53				

EX*_1 - The influencer is an expert in fashion							.70		
EX_2 - The influencer is qualified							.69		
EX_3 - The influencer is knowledgable							.70		
EX_4 - The influencer is unskilled							.66		
PO*_1 - The post is original								.59	
PO_2 - The post is novel								.72	
PO_3 - The post is innovative								.83	
PO_4 - The post is creative								.77	
PU*_1 - The post is unique								.84	
PU_2 - The post does not differentiate from others								.47	
IBM*_1 - The influencer is a believable representative of the brand Puma									.80
IBM_2 - The influencer is a good fit for the brand									.87
IBM_3 - I believe the influencer would wear the new collection									.74
Explained variance:	9.7%	40.81%	13.6%	33.6%	9.5%	13.0%	7.1%	35.9%	19.2%
Eigenvalue:	1.17	4.90	1.62	6.38	1.81	2.46	1.35	3.59	1.92
Cronbach's Alpha:	.854	.795	.795	.847	.818	.822	.763	.805	.764

*PSI = Para social interaction
*PR = perceived realism
*SP = social presence
*BA = Brand attitude
*TR = trustworthiness
*AT = attractiveness
*EX = expertise
*PO = post originality
*PU = Post originality
*IBM = Influencer-brand match

Table 2. Validity factor analysis and Cronbach's Alpha.

3.7 Sample characteristics

For this research, a total of 175 participants filled in the online questionnaire. However, 38 individuals had to be excluded due to incomplete answers or because they did not fit the criteria. For this study, individuals of a specific age group were targeted. As statistics have shown, most of the Instagram users worldwide are between 18 and 34 years old (Statista, 2020). Therefore, the focus was set on this particular group and participants who exceeded that number by more than 3 years were excluded from the sample. However, as the conditions were made clear at the beginning of the study, only 2 participants had to be excluded due to their age. The final sample consisted of 137 participants, including 25.5% male and 74.5% female. The mean of the participant's age was $M = 23.34$, $SD = 0.291$. Furthermore, as a convenience sampling method was used for data collection, 75.4% of the participants came from Germany. However, answers were also collected from participants across Europe, and even Asia, Australia, Canada, the USA, and South Africa. The sample consisted mostly of students, in fact, 103, followed by 25 full-time employees, and 5 part-time employees. In terms of the level of education that has been attained by the participants, 62.3% stated that they have at least a Highschool diploma or equivalent, followed by 26.1% with a bachelor's degree, and 7.2% with a master's degree. Moreover, as the participants had to indicate their Instagram usage behaviour and their general attitude towards influencers, 110 participants stated that they use Instagram daily. Only 11 participants have indicated that they never use Instagram. Furthermore, 83.2% stated that they follow influencers on Instagram, followed by 8.7% who indicated that they probably don't follow influencers on Instagram. Hereby, none of the participants indicated that they definitely don't follow influencers on Instagram. Moreover, 77 participants indicated that they definitely have never bought a product that was promoted by an influencer, whereas only 28 individuals stated that they probably have. When asking about brand familiarity and previous purchase behaviour, 89.8% stated that they know the brand Puma, 2.9% were not sure, and 6.5% stated that they do not know the brand. Moreover, 73.1% indicated that they know Puma based on previous experiences. In regard to this, 65.9% of participants think Puma has a good reputation, whereas only 3% of the participants stated that the reputation of the brand is negative. Lastly, 95 participants have purchased a product of the brand before, and 67 participants were likely to purchase a product of Puma.

When asking about the influencer in the presented Instagram post, no participant indicated a clear familiarity. Only 6 participants stated that they neither agree nor disagree knowing the CGI influencer. However, one participant indicated that he or she follows the

influencer on Instagram. The analysis revealed later on that the person following the influencer was from China, a country where the influencer was already very present in the media, for example on the cover of Grazia. As this particular participant ended up in the group were the participants were told that the influencer is CGI, the participant was not excluded from the sample.

There are no significant differences between the respondents in the two different conditions. However, after deleting the insufficient data, there was an uneven spread of the participants. Hence, the group that was told that the influencer is CGI consisted of 73 participants, whereas the group that was not told that the influencer is CGI counted a number of 64 participants.

3.8. Manipulation Check

To test whether the manipulation of the sample was sufficient and whether brand familiarity and brand-purchase likelihood would influence the overall purchase intentions of the participants, three independent sample t-tests were conducted.

Influencer CGI identification

To compare the CGI identification scores of the influencer for the respondents in the two conditions, an independent sample t-test was conducted. Results showed there was no significant difference in scores for participants who were told that the influencer is CGI (M = 4.07 , SD = 0.81), and participants who were not told that the influencer is CGI [M = 3.94, SD = 0.94; $t(135) = -0.89$, p = .375, 95% CI [-0.43, 0.16]]. The results indicate that participants in both conditions could not clearly state whether they perceived the influencer as CGI or human.

Brand familiarity

To compare purchase intentions between participants who were highly familiar with the brand and the ones who were not familiar with the brand, another independent sample t-test was conducted. Results showed no significant differences in scores for participants with a low familiarity (M = 2.77, SD = 1.79), and participants with a high familiarity [M = 3.07, SD = 1.79; $t(135) = -0.58$, p = .56; 95% CI [-1.33, 0.73]].

Previous purchase behaviour

To compare product purchase intentions between individuals who are likely to purchase a product of the brand and people who are not, another independent sample t-test was

conducted. Results showed that there is a significant difference between participants with a high purchase likelihood (M = 3.51, SD = 1.78), and participants with low purchase likelihood [M =2.6, SD = 1.68; $t(135) = 3.07$, p = .003; 95% CI [0.32, 1.49]]. Indicating that individuals who are generally likely to purchase a product of the brand would also buy the promoted product of the influencer.

3.9. Preface main analysis

Influencer Classification

At the beginning of this study, the participants were divided into two conditions. Hereby, participants within the first condition were told that the influencer is CGI, and participants within the second condition were told that the influencer is human. However, after an independent sample t-test was conducted, it was revealed that there are hardly any differences between the participants in the two conditions on the different constructs purchase intentions, post originality and uniqueness, influencer-brand match, brand attitude, perceived influencer expertise, trustworthiness and attractiveness, parasocial interactions, perceived realism, and social presence. A depict overview of the mean scores can be found below in table 3.

	Told CGI			Not told CGI		
	Mean	SD	N	Mean	SD	N
Statistical Evidence						
Purchase Intentions*	3,01	1,78	73	3,08	1,79	64
Post originality and uniqueness*	3,44	1,02		3,43	0,95	
Influencer-Brand match*	4,75	1,04		4,58	1,10	
Brand attitude*	4,81	1,01		4,9	0,98	
Influencer expertise*	4,61	1,06		4,7	0,78	
Influencer trustworthiness*	4,04	0,89		4,08	0,94	
Influencer attractiveness*	4,44	0,95		4,44	1,15	
Parasoical interactions*	3,61	1,14		3,56	1,29	
Perceived realism*	4,42	0,97		4,18	1,01	
Social presence*	3,95	1,16		3,88	1,14	

* *7-point likert scale (1=strongly disagree / 7=strongly agree)*

Table 3. Mean scores of the participants in the two conditions.

Hence, for further analysis, it was decided to combine the participants of the two conditions and focus on how many participants classified the influencer as CGI, regardless of whether they knew that the influencer is CGI or not. To do so, a dichotomous variable 'influencer classification' was created, derived from the scale variable 'influencer CGI identification'. Therefore, the scores of the three subscales para-social interactions, social presence, and perceived realism, which measured influencer CGI identification, were combined. As a short recap, participants had to indicate their answers on all three subscales on a 7-point Likert scale. The semantic scale ranged from 1 'totally disagree' to 7 'totally agree', showing that a low mean value can be translated into a high perception of CGI. To create the dichotomous variable 'influencer classification', the median of the combined subscales was formed, which served as then as the separation point of the participants into the two groups, 'CGI classification' and 'human classification'.

4. Results

In the following, the results of this research are displayed. First of all, a one-way between-groups multivariate analysis of variance (MANOVA) was performed to investigate the effect of 'influencer classification' on the mediation variables and the dependent variables. Subsequently, a linear regression analysis was performed to test the effects of the sufficient mediator variables on the dependent variables. Lastly, to investigate the mediation effects of post originality and uniqueness, influencer-brand-match, trustworthiness, expertise, and attractiveness, a PROCESS macro analysis was conducted.

4.1 Effects of overall influencer CGI classification

The MANOVA analysis showed a significant main effect of influencer CGI classification on the dependent variables and on the mediating variables $F(7.13) = 7.95$, $p < .001$; Wilk's Lambda = .69; partial eta squared = .30.

An inspection of the mean scores indicated already that participants classifying the influencer as human reported slightly higher levels on the mediating variables and the dependent variables. In addition, an overview of the supported and not supported hypotheses can be found in table 4

Effects on purchase intentions

The analysis revealed that CGI classification has a significant effect on the dependent variable purchase intentions, with $F(1.43) = 15.09$, $p < .001$. Furthermore, it was hypothesised that CGI influencers negatively impacts consumers' purchase intentions (H1). The analysis revealed that individuals classifying the influencer as CGI scored lower on purchase intentions ($M = 2.54$, $SD = 1.66$) than people who classified the influencer as human ($M = 3.67$, $SD = 1.74$). Hence, the hypothesis can be confirmed.

Effects on post originality and post uniqueness

Influencer CGI classification has a significant effect on perceived post originality and uniqueness, with $F(1.11) = 12.59$, $p = .001$. Furthermore, it was revealed that individuals who perceived the influencer as CGI scored lower on post originality and uniqueness ($M = 3.18$, $SD = 0.84$) than individuals who perceived the influencer as human ($M = 3.75$, $SD = 1.05$). Therefore, the hypotheses that CGI influencers increase perceived post uniqueness and originality (H2 & H3) have to be rejected.

Effects on influencer-brand match

A significant effect of CGI classification on influencer-brand match was revealed with $F(1.15) = 14.41$, $p < .001$. In addition, it was hypothesised that CGI influencers have a negative effect on the perceived influencer-brand match (H4). Indeed, it was shown that participants who classified the influencer as CGI scored lower on perceived brand match ($M = 4.38$, $SD = 1.13$) than individuals who classified the influencer as human ($M = 5{,}04$, $SD = 0.86$). Hence, the hypothesis can be accepted.

Effects on brand attitude

The analysis revealed a significant main effect of influencer CGI classification on brand attitude, with $F(1.11) = 13.19$, $p < .001$. Furthermore, individuals who classified the influencer as human scored higher on brand attitude, indicating that their attitude towards a brand is generally more positive ($M = 5.18$, $SD = 0.89$) than the attitude of people who classified the influencer as CGI ($M = 4.59$, $SD = 0.99$). Hence, the hypothesis that CGI influencers negatively affect a consumers' brand attitude (H5), can be accepted.

Effects on trustworthiness

Influencer CGI classification has a significant effect on trust with $F(1.23) = 34.96$, $p < .001$. Moreover, it was hypothesized that identifying an influencer as CGI has a negative effect on the perceived trustworthiness of the influencer (H6). Indeed, it was shown that participants who perceived the influencer as CGI scored lower on trust ($M = 3.68$, $SD = 0.90$) than individuals who perceived the influencer as human ($M = 4.52$, $SD = 0.69$). Therefore, the hypothesis can be accepted.

Effects on perceived expertise

The analysis revealed a significant effect of CGI classification on perceived expertise, with $F(1.17) = 23.17$, $p < .001$. Furthermore, it was shown that participants who classified the influencer as human scored higher on perceived expertise ($M = 5.05$, $SD = 0.77$) than individuals who perceived the influencer as CGI ($M = 4.33$, $SD = 0.95$). Hence, the hypothesis H7 that CGI identification negatively impacts the perceived expertise of an influencer can be accepted.

Effects on attractiveness

CGI classification has a significant effect on influencer attractiveness, with $F(1.23) = 25.19$, $p < .001$. Furthermore, individuals who perceived the influencer as CGI scored lower on attractiveness ($M = 4.07$, $SD = 1.03$), than individuals who classified the influencer as human ($M = 4.90$, $SD = 0.87$). Hence, the hypothesis that CGI identification negatively impacts the perceived attractiveness of an influencer (H8) can be accepted.

Hypothesis		Supported?
H1	CGI influencers negatively affect consumers purchase intentions.	Yes
H2	CGI influencers positively affect perceived Instagram post originality	No
H3	CGI influencers have a positive effect on perceived post uniqueness.	No
H4	CGI influencers negatively affect the perceived match between an influencer and a brand	Yes
H5	CGI influencers negatively affect a consumer's brand attitude	Yes
H6	influencer CGI identification negatively affects the perceived trustworthiness of an influencer	Yes
H7	CGI influencer identification negatively affects the perceived expertise of an influencer	Yes
H8	Influencer CGI identification negatively impacts the perceived attractiveness of an influencer	Yes

Table 4. Overview supported hypotheses.

4.2 Effects of mediator variables on purchase intentions and brand attitude

To find out whether the mediator variables also show a significant effect on the dependent variables, a linear regression analysis was conducted. Therefore, the effect of trustworthiness, attractiveness, and expertise on brand attitude was investigated, followed by the effect of post originality and uniqueness, and influencer-brand match on purchase intentions.

Effects on purchase intentions.

The predictors influencer-brand match and post originality and uniqueness showed a significant effect on purchase intentions with F (2,134) = 8.627, p = .001, and with an R^2 of .114. The individual predictors were examined further and indicated that influencer-brand match (t = 3.01, p = .003) and post originality and uniqueness (t = 2.46, p = .015), were significant predictors in the model.

Effects on brand attitude.

Perceived influencer expertise, trustworthiness, and attractiveness have a significant effect on brand attitude with F (3.133) = 9.66, p < .001), with an R^2 of .179. However, only

Influencer expertise ($t = 2.09$, $p = .038$), and influencer trustworthiness ($t = 2.36$, $p = .020$) showed a significant effect on brand attitude. Influencer attractiveness was not a significant predictor in the model ($t = 1.16$, $p = .246$).

4.3 Mediation Effects

To analyse whether the main research model entails mediation effects, a mediation analysis was conducted using model 4 of the PROCESS macro by Hayes (2013). As an orientation, a statistical mediation model was created and is displayed in figure 7. As previous analyses already revealed, there is a significant effect of 'influencer classification' on the different mediator variables (path a), and on the dependent variables (path c). Furthermore, significant effects of the mediator variables on the dependent variables (path b) have been found. Hence, in the following, it was further analysed to what extent the relationship between the scale variable 'influencer CGI recognition' and purchase intentions, and brand attitude, is explained by the mediator variables (path c'). Additionally, an overview of all significant effects is provided in figure 8 at the end.

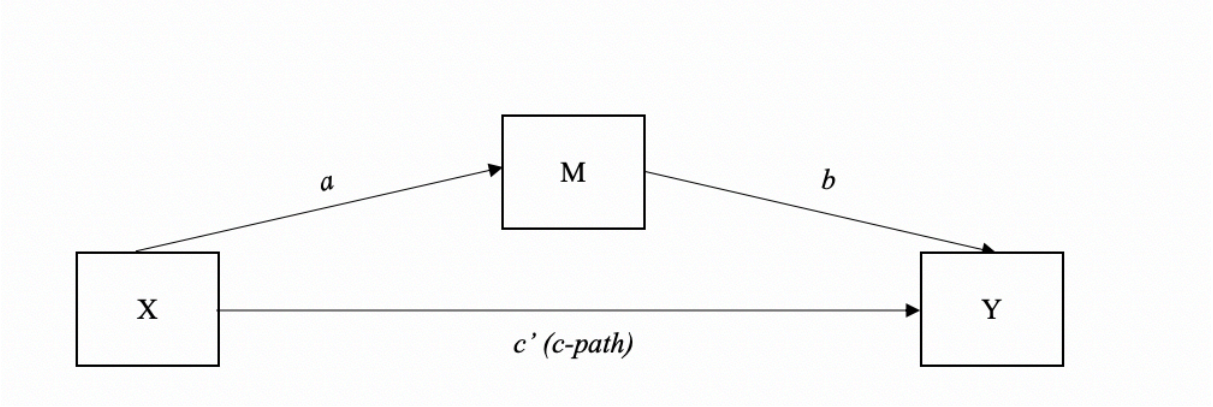


Figure 7. Statistical mediation model

Mediation effect brand attitude

It was hypothesized that influencer expertise, trustworthiness, and attractiveness mediate the relationship between influencer CGI recognition and brand attitude (H10, H12 & H14).

Analysis revealed that the c'-path of the association between influencer CGI recognition and brand attitude remains sufficient when controlling for attractiveness, trustworthiness, and expertise as mediators [$b = 0.35$, $t(135) = 3.77$, $p = .002$]. Hence, the mediation hypotheses can be accepted. Furthermore, to test the indirect effects (IE) of the mediator variables, the 95% confidence interval of the indirect effects was obtained with 5,000 bootstrap samples (Hayes, 2013). Hereby, all mediators showed a positive and

statistically significant effect, e.g. attractiveness [*IE* = 0.11; 95% *CI* = (-0.59, 0.30)], expertise [*IE* = 0.15; 95% *CI* = (0.03, 0.29)], and trustworthiness [*IE* = 0.17; 95% *CI* = (0.03, 0.30)].

In addition, to find out to what extent the relationship of the independent and dependent variable that is explained by the mediator variables a total percentage has been calculated. The formula is presented below.

$$\frac{\text{Indirect effect of M}}{\text{Total effect of DV on IV}} * 100$$

Results revealed that 31.4% of the relationship between influencer CGI identification and brand attitude is explained by the attractiveness of the influencer. Furthermore, 42.9% of the relationship is explained by the expertise of the influencer, and 48.6% by the perceived trustworthiness of the influencer.

Mediation effect purchase intentions

In the following the hypotheses that post originality and uniqueness, and influencer-brand match mediates the relationship between influencer CGI recognition and purchase intentions (H3, H5 & H7), are investigated.

PROCESS revealed that the c'-path of the association between the independent variable and the dependent variable remains sufficient when controlling for the two mediator variables [$b = 0.86$, $t(135) = 5.42$, $p < .001$]. Hence, the hypotheses can be accepted. The indirect effect of post originality and uniqueness (IE = 0.07) is positive and statistically significant: 95% *CI* = (-0.01, 0.18). The same also applies to influencer-brand match [*IE* = 0.82; 95% *CI* = (0.09, 0.28)]. Furthermore, results showed that 9.5% of the relationship between influencer CGI identification and purchase intentions is explained by influencer-brand match. Lastly, 8% of the relationship is explained by Instagram post originality and uniqueness.

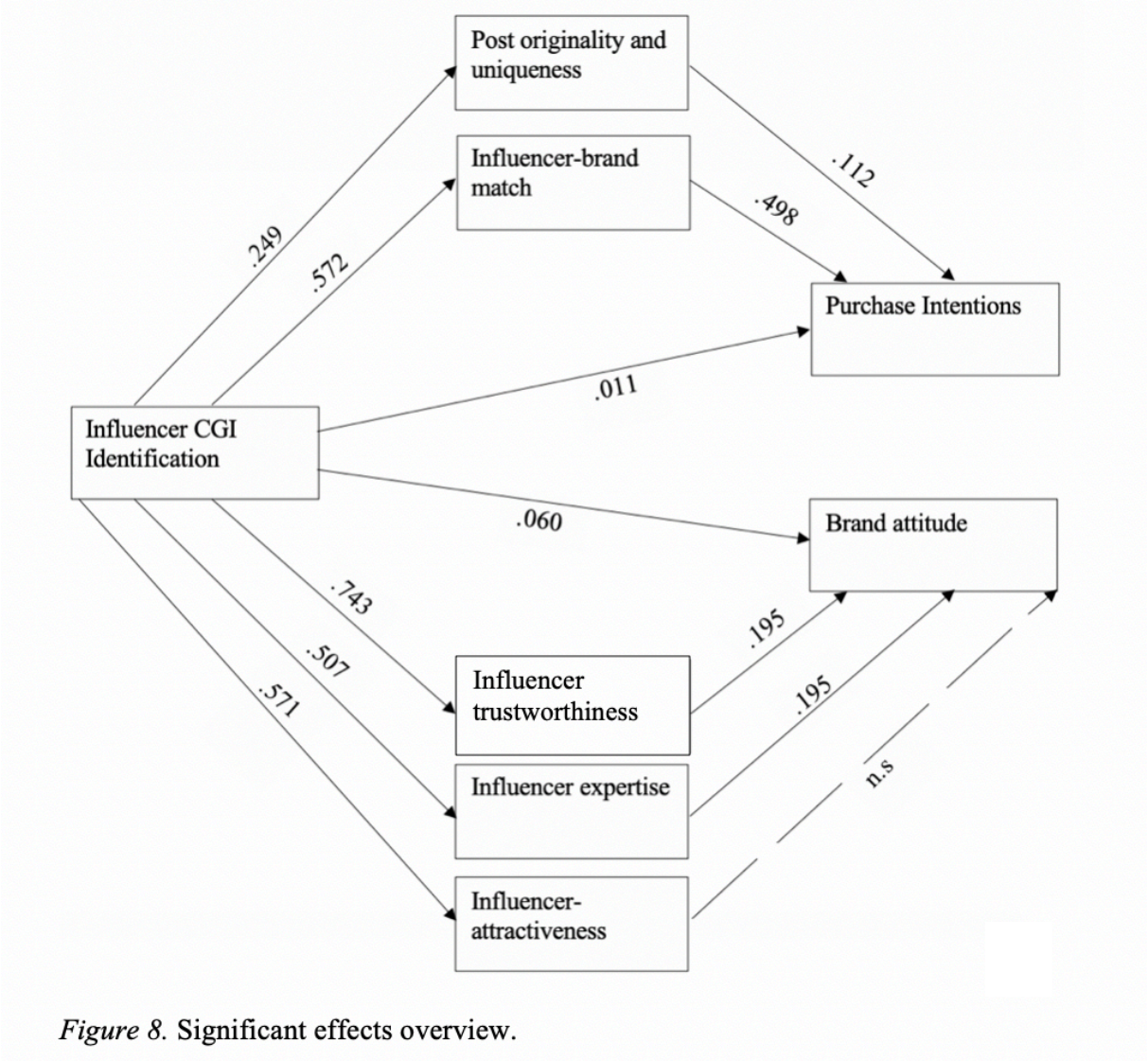


Figure 8. Significant effects overview.

Lastly, an overview of the supported mediation hypotheses is provided below in table 5.

Hypothesis		Supported?
H2a	Perceived Instagram post originality mediates the relationship between CGI influencer identification and consumers' purchase intentions.	Yes
H3a	Perceived Instagram post uniqueness mediates the relationship between influencer CGI identification and purchase intentions.	Yes
H4a	Perceived influencer-brand match mediates the relationship between influencer CGI identification and purchase intentions	Yes
H6a	Perceived trustworthiness of an influencer mediates the relationship between influencer CGI identification and consumers' brand attitude	Yes
H7a	Perceived expertise of an influencer mediates the relationship between influencer CGI identification and a consumer's brand attitude	Yes
H8a	Perceived attractiveness mediates the relationship between influencer CGI identification and a consumer's brand attitude	Yes

Table 5. Supported mediation hypotheses.

5. Discussion

In this research, the topic of CGI influencers was introduced. Computer-generated influencers appear to become a growing marketing trend, especially in the fashion industry. However, little is yet known about the actual impact on consumers. Hence, this study aimed to contribute to the field of influencer marketing by gaining better insights into the effect of CGI influencers on consumers' purchase intentions and brand attitude. Furthermore, it was tested whether the relationship between influencer CGI identification and purchase intentions is mediated by perceived influencer-brand match-up and the originality and uniqueness of the Instagram post. Also, the effect of influencer CGI identification on brand attitude, mediated by perceived trustworthiness, expertise, and attractiveness of the influencer was investigated. Based on the theoretical framework, several hypotheses were formulated. Results of this study revealed that nearly all hypotheses can be accepted, only one could not be confirmed. The exact findings of this research are elaborated in the following. Furthermore, the implications and limitations of this research are presented, followed by a conclusion.

5.1 Theoretical implications and findings

As there is no academic research so far on the topic of computer-generated influencers, previous academic literature on the topic of influencer marketing and computer-animated characters in the virtual environment was combined to try and get a better understanding of the new influencer generation. As previous literature on virtual characters has shown, two main distinctions can be made, namely virtual agents and virtual avatars. Whilst virtual agents are self-acting based on integrated artificial intelligence and robotic algorithms (Balakrishnan & Honavar, 2001), virtual avatars are completely controlled by real people (von der Pütten, Krämer, Gratch, & Hwa Kang, 2010). As CGI influencers are neither self-acting entities nor being controlled in real-time by humans, this research proposed a new theory that CGI influencers are a new type of virtual character.

As elaborated in the theoretical framework, influencers on social media are crucial drivers for consumers' purchase intentions. However, it was yet unclear whether computer-generated influencers have the same effect on consumers as their "human" colleagues do. To investigate the actual effect of CGI influencers on purchase intentions, it was first examined whether the participants showed any bias based on previous experience with the brand. As a consequence, it was shown that individuals who have previously purchased a product of the

brand were also more likely to buy the promoted product by the influencer. This has to be taken into account. When looking at the main results of this study, it is demonstrated that the CGI influencer in this study had an impact on consumers purchase intentions, even if the impact is negative. As it was hypothesized that CGI influencers would negatively impact consumers' purchase intentions, the hypothesis can be accepted. However, since all participants scored low on purchase intentions, it can be assumed that the general product choice was perhaps not the right one. Furthermore, since a female influencer was selected for this study, male participants may have had more difficulties in putting themselves in a position to buy a female product. Lastly, as previous literature has also revealed, hyper-realistic virtual characters can increase the uncanny valley effect, a negative emotional response towards artificial characters that appeal too realistic (Weis & Wiese, 2020). Even though it cannot be clearly determined whether or not the uncanny valley effect occurred, it can be assumed, since participants were less likely to buy the product of the CGI influencer, that the uncanny valley was perhaps a trigger. Therefore, this study provides a first theoretical impetus on CGI influencers and the uncanny valley that can be further investigated in future research.

One important driver for purchase intentions is the consumer's perception of an advertisement (Lou & Yuan, 2019). Therefore, this study examined the perceived originality and uniqueness of a brand's Instagram post that contains a CGI influencer. It was hypothesized that the collaboration with CGI influencers would increase perceived originality and uniqueness. This hypothesis, however, had to be withdrawn as individuals who recognized the influencer as CGI neither perceived the Instagram post as original, nor as unique. Moreover, participants who identified the influencer as CGI scored even lower on perceived post originality and uniqueness than participants who identified the influencer as human. Again, it can be assumed that the uncanny valley effect occurred. However, since all participants rated the Instagram post as not very unique or original, regardless of whether they perceived the influencer as CGI or not, it can be argued that this may be due to the chosen stimulus material rather than to the CGI influencer in the post. Lastly, it was revealed that there is a mediating effect of post originality and uniqueness on influencer CGI classification and purchase intentions. 8% of the relationship is explained by the perceived uniqueness and originality of an Instagram post, indicating that influencer CGI classification accounts for 92% of the outcome of purchase intentions.

Another driver for purchase intentions is the perceived match between an influencer and a brand. According to Hall (2016), a good match-up can increase consumer's trust in the

opinion of the influencer, which ultimately affects purchase intentions. This study investigated whether computer-generated influencers can also be perceived as the right match for a brand. Results revealed that the chosen CGI influencer in this study is not perceived as a good brand-match by the participants. Moreover, respondents stated that the CGI influencer was even less convenient for the brand than a normal influencer. As it was hypothesised that CGI influencers negatively influence a perceived match between the influencer and a brand, the hypothesis can be accepted. This could be because computer-animated characters cannot have real human traits or characteristics and therefore cannot be associated with a brand in the way that humans with similar characteristics of a brand can. However, in general, all participants could not take a clear position on whether the influencer matches the brand well or not, regardless of whether the classified the influencer as human or CGI (see table). It was also found that perceived influencer-brand match mediates the relationship between CGI influencers and purchase intentions. CGI influencers and their effect on purchase intentions are explained to 9.5% by a perceived influencer-brand match-up. This means that influencer CGI classification accounts for 90.5% of the outcome of purchase intentions.

Influencers on social media are also crucial drivers for consumers' brand attitude. However, it was yet unclear whether people make any differences between real human influencers and CGI influencers on the internet. Hence, in this study, the effect of CGI influencers on a consumer's brand attitude was investigated. Results revealed an overall effect of CGI influencers on consumer's brand attitude. It was demonstrated that people who perceived the influencer as CGI also showed a positive attitude towards the brand. However, people who perceived the influencer as human have shown an even more positive effect. Since the hypothesis was put forward that CGI influencers negatively affect consumers' brand attitude, the hypothesis cannot be fully accepted, since, although the attitude of people who recognise the influencer as a human was more positive, the attitude of people classifying the influencer as CGI was also positive. It can be discussed that respondents who classified the influencer as CGI still showed a positive attitude towards the brand because the majority was already familiar with the brand and has created their own opinion. Hence, the collaboration of the brand with a CGI influencer might have not changed the grounded attitude of the consumers towards the brand. Therefore, it can be argued that it does not matter whether a brand is working with a CGI influencer or not, other factors might play a more important role for consumers when it comes to brand attitude.

As established in the theoretical framework, the specific characteristics of an influencer can have a high impact on consumers brand attitudes. Hence, it was further investigated whether computer-generated influencers can be perceived as trustworthy, attractive, or as an expert in their field. Beginning with perceived trustworthiness, results revealed that the classification of an influencer as CGI affects the perceived trustworthiness of an influencer. It was shown that individuals who perceived the influencer as CGI showed lower trust in the influencer than people who perceived the influencer as human. Hence, the hypothesis that CGI classification negatively affects the perceived trustworthiness of an influencer can be accepted. It can be discussed that the uncanny valley effect may have been a reason for this outcome as the computer-animated character scored lower on trust, however previous literature has also shown that individuals are generally more likely to trust other individuals, rather than computer animations or robots. Additionally, all participants could not make a clear statement about whether or not they considered the influencer to be trustworthy. Hence, there might be other reasons. Besides that, a mediation effect was found for trustworthiness on the relationship between influencer CGI classification and brand attitude. Hereby, 48.6% of the relationship is explained by the perceived trustworthiness of an influencer, indicating that influencer CGI classification accounts for 51.4% of the outcome of brand attitude.

The second influencer trait that has been investigated in this study was perceived attractiveness. Results showed that influencer CGI recognition affects the perceived attractiveness of an influencer. However, it was established that individuals who classified the influencer as CGI perceived the influencer as less attractive than individuals who classified the influencer as human. Hence, the hypothesis that influencer CGI recognition negatively impacts perceived attractiveness can be accepted. Perceived attractiveness is objective and differs between individuals, however, it can be discussed that it is more difficult to judge the attractiveness of a virtual character. Attractiveness, in this case, was only judged based on superficial cues such as clothing, hair, and make-up. It can be assumed that especially respondents who classified the influencer as CGI found this judgement harder, and therefore scored lower on the perceived attractiveness of the influencer. However, again, all participants indicated that they have no clear opinion about this the attractiveness of the influencer. Furthermore, a mediation effect was found for attractiveness on the relationship between influencer CGI classification and brand attitude. 31.4% of the relationship is explained by the perceived attractiveness of an influencer, indicating that influencer CGI classification accounts for 68.4% of the outcome of brand attitude.

The last trait that has been investigated in this study is the perceived expertise of an influencer. Results showed a significant effect of influencer CGI recognition on the perceived expertise of an influencer. However, it was shown that individuals who classified the influencer as CGI perceived the influencer as less of an expert than individuals who perceived the influencer as another human being. As it was hypothesised that influencer CGI recognition negatively affects the perceived expertise of an influencer, the hypothesis can be accepted. It can be discussed that because CGI influencers are not real people, they cannot show any expertise themselves in a specific field. Everything that is being communicated on social media by the new influencers comes directly from a team of animators and designers. Hence, it can be argued that this is the main reason why respondents who perceived the influencer as CGI also scored lower on the perceived expertise of the influencer. Furthermore, it was proposed that influencer expertise does mediate the relationship between influencer CGI recognition and brand attitude. A mediating effect was found, indicating that 42.9% of the relationship between influencer CGI recognition and brand attitude is explained by the perceived expertise of an influencer. Therefore, influencer CGI classification accounts for 57.1% of the outcome of brand attitude.

To conclude, findings of this study supported the conceptual premises that influencers affect consumer's brand attitude and purchase intentions. Moreover, findings of this study confirmed that the trustworthiness and expertise of an influencer are crucial drivers for consumers brand attitude and that the perceived match between an influencer and brand increases overall purchase intentions. However, it was not confirmed that attractiveness of the influencer is a driver for consumer's brand attitude. In addition, this study revealed new theoretical implications on the topic of the originality and uniqueness of an Instagram ad. Previous literature has shown that the generated content of influencers affects a consumer's overall perception of a brand (e.g. Casaló, Flavián, Guinalíu, & Ekinci, 2015). However, it has not yet been investigated whether the uniqueness and originality of a brand's Instagram post would increase consumers' purchase intentions. Since this study proved that post originality and uniqueness does affect consumers' intentions, implications for future research are provided.

5.2 Practical implications

This study aimed to give brands helpful insights into the topic of CGI influencers. In the media, CGI influencers are already considered the future of influencer marketing (e.g. Trepany, 2019). However, only little was yet known about the actual impact of CGI influencers on a consumer's behaviour. Therefore, this study has brought new implications to the field of influencer marketing. It became apparent that at this point, the implementation of CGI influencers in a brand's communication strategies should be well thought through, as there seem to be more challenges than advantages. At least in this study, it was revealed that the classification of the chosen influencer as CGI decreased consumers' purchase intentions and overall brand attitude. Moreover, the CGI influencer negatively affected the perceived uniqueness and originality of the brand's social media post. However, it must be kept in mind that the sample of this study consisted mainly of individuals from Europe. Moreover, only millennials and GenZ were considered in this study. Therefore, for now, it can only be recommended to brands across Europe that if they plan on targeting Millennials and GenZ for new campaigns, collaborations with CGI influencers should be well considered. In addition, since CGI characters have not yet been widely used in the fashion industry, it can be assumed that individuals might have problems associating the computer-animated characters with fashion products. Therefore, it can rather be advised for brands in other industries, e.g. gaming or tech, to work with CGI influencers as virtual characters have long been established in these areas. However, this is only speculation and can be left for future research.

When introducing CGI influencers at the beginning, it was questioned if they could take over the jobs of current influencers on social media. This study revealed that if a CGI influencer is classified as human, it is still perceived as more trustworthy, attractive and more knowledgeable. Moreover, it was demonstrated that if a CGI influencer is perceived as human, the influencer is also perceived as a better match for the brand, or at least for the brand Puma. If this is also applicable to other brands has to be further investigated. In addition, it was argued that people who are not aware of this new influencer trend would be more open to manipulation. As a study by Fullscreen has shown, 42% of Gen Z and millennials followed an Influencer they didn't even realize was computer generated. Indeed, it was found in this research that many participants who were not told that the influencer was CGI, really believed that the influencer was a real person and showed interest in buying the advertised product. Therefore, to avoid consumer manipulations in the future, it can be advised to brands to be transparent about their usage of CGI influencers. This might also reduce the potential of negative publicity at the end. As technology increases and becomes

more accessible for brands, it can be argued that CGI influencers could be the future in influencer marketing. However, a little more time is yet needed especially for consumers to get used to the new artificial influencers.

6. Limitations and Future Research

Although this study has contributed insights into the new influencer generation, it is not free from limitations. First of all, data collection. Data was collected in a short amount of time, exactly less than a week. This resulted in a rather small sample size with less than 150 participants. For future research, it is therefore advised to take more time to gain a bigger sample size and create a smaller margin of error. In addition, future researchers should try to maintain a more balanced sample. As this sample consisted mainly of female participants (75%), the gender differences were difficult to compare. Furthermore, as a convenience sampling method was used in combination with a snowball sampling method, most of the participants came from central Europe, more precisely from Germany. It can, therefore, be argued that the findings and results of this study are particularly applicable to brands and individuals in Europe. Also, this research excluded individuals who do not fit in the criteria of Instagram's biggest user group. In future research it can, therefore, be considered to expand the target group to find out what the general public thinks about the new influencer trend, it can be assumed, for example, that a younger audience might be more fond of the virtual characters

Secondly, when designing the scales for the study, only one item was used to measure consumers' purchase intentions. However, this was done on purpose by the researcher, as, according to Rossiter (2002, p.313) "when an attribute is judged to be concrete, there is no need to use more than a single item […] to measure it in the scale". However, for future research purposes, it can be considered including more items to measure purchase intentions, because, ultimately using multiple items helps to average out errors, thus leading to increased reliability and validity (DeVellis 2003).

Another striking aspect was that the original manipulation at the beginning of the study was abolished so that for later analysis purposes only the overall classification of the influencer as either human or CGI was considered. This decision was made because there were only very small differences between the participants in the two conditions. However, for future research, this should be avoided to prevent further confusion for readers.

Another choice that can be criticised is the choice of the stimulus material and the influencer. Since a female influencer was chosen for this study, it can be argued that this study had a larger relation to women, as men might experience more difficulties in putting themselves in a position where they would buy a female product. Hence, it can be suggested for future research to add a male character in the study to make the study more accessible to both genders. For the chosen stimulus material, it can be argued that the shown Instagram post contained too many pictures, the focus was not mainly set on the influencer herself but more on the product that was promoted. Furthermore, it was chosen to "publish" the Instagram post from a brand's account and not from the influencer herself. Even though this was decided beforehand, it can be argued for future research to choose a CGI influencer as the original publisher of the post. In this regard, future participants will get a better picture of the CGI influencer and judgements about the perceived realism or social presence may be easier to make.

Lastly, a well-known brand was used as an example in this research, hence a potential for bias in the sample cannot be excluded. Also, this research focused on influencers in the fashion industry, a field where virtual characters have not been so prominent yet. Therefore, it can be assumed that choosing a CGI influencer for product advertising in areas such as gaming or film, areas in which virtual characters have been long established, purchase intentions and brand attitudes of consumers might have turned out differently. Thus, for future research, it can be suggested modifying the product that is promoted by the CGI influencer to investigate whether there are any differences between the different fields, e.g. gaming, fashion, beauty, or tech.

Since CGI influencers are a new phenomenon, there are so many more things to explore in future research. For example, the ethical aspects of CGI influencers. As elaborated in the theoretical framework, CGI influencers openly share their experiences and thoughts with their followers, including sensitive topics such as sexual assault, or current political issues. Therefore, it would be interesting to look at this topic from an ethical perspective and analyse the actual impact that CGI influencers have on their audience. Are they convincing? Can they truly shape the opinion of individuals in regard to politics or society?

7. Conclusion

This study was conducted to gain a better insight into the new CGI influencer phenomenon. Since there has been no academic research on this very topic so far, this study aimed to gain new insights into the proposed future of influencer marketing. Therefore, the effect of CGI influencers on consumers' purchase intentions and brand attitude was investigated. Additionally, it was examined whether the trustworthiness, attractiveness and perceived expertise of an influencer would mediate the relationship between general influencer CGI identification and brand attitude. Moreover, the effect of influencer CGI influencers on purchase intentions, mediated by a perceived influencer-brand match, and by the perceived originality and uniqueness of a brand's Instagram post, was investigated. It was found that the identification of an influencer as CGI negatively affects consumers' purchase intentions and brand attitude. Furthermore, it was established that the perception of an influencer as CGI did not increase the perceived originality and uniqueness of a brand's Instagram post. Also, respondents who classified the influencer as human perceived the influencer as a better match for the brand. In addition, CGI influencers were perceived as less attractive, less of an expert, and less trustworthy than human influencers. Moreover, only partial mediation effects were found on purchase intentions and brand attitude. This study provided completely new theoretical implications on the topic of CGI influencers. Furthermore, it supported earlier conceptual assumptions regarding influencer marketing. Overall, based on the findings of this research, it can be argued that the time for CGI influencers might not have come yet. At least for brands in the fashion industry. However, since this research only targeted millennials and GenZ, and the majority of the participants came from Europe, it can be argued that the findings of this study may be only applicable to this specific target group. Future research is necessary to gain further insights into the phenomenon of CGI influencers. Lastly, this research can serve as genuinely practical advice for all people who are active on social media. individuals should start questioning what they see, not everything is real, not everyone has the perfect, flawless life that is presented on Facebook, Instagram and co. In the end, the person someone might look up to most might just be a very attractive robot.

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9. Appendix

Appendix A: Pre-study

1

I know this Influencer. *

- Yes
- No

2

I follow this Influencer. *

- Yes
- No

3

This scenario looks realistic. *

- Yes
- No

4

The outfit of the Influencer is adequate. *

- Yes
- No

5

The Influencer knows what she is doing *

- Yes
- No

First impressions.

Based on your first impression, please indicate on a scale from 1 - 10 (10 meaning most likely), the following...

6

The influencer is authentic. *

0	1	2	3	4	5	6	7	8	9	10

not likely likely

7

The Influencer is credible. *

0	1	2	3	4	5	6	7	8	9	10

not likely likely

8

The Influencer is trustworthy. *

0	1	2	3	4	5	6	7	8	9	10

not likely likely

9

The Influencer is attractive. *

0	1	2	3	4	5	6	7	8	9	10

not likely likely

Influencer Engagement.

Based on your first impression, please indicate the following.

12

I would follow the Influencer. *

- Yes
- No

13

I would interact with the Influencer (comment, like, share post). *

- Yes
- No

10

The Influencer is inspiring. *

0	1	2	3	4	5	6	7	8	9	10

not likely likely

11

The Influencer is uncanny. *

0	1	2	3	4	5	6	7	8	9	10

not likely likely

14

On a personal level, I think I would get along with the Influencer. *

- Yes
- No

15

I would enjoy a casual conversation or a beer with the Influencer. *

- Yes
- No

16

I would purchase an item promoted by the Influencer. *

- Yes
- No

Please indicate whether the following points appeared to you as human-like or as rather artificial.

17

Please indicate: *

	Human-like	Less realistic	Neutral	Rather synthetic	Artificial
Behaviour of Influencer	○	○	○	○	○
Posture of Influencer	○	○	○	○	○
Gesture of Influencer	○	○	○	○	○
Facial expressions	○	○	○	○	○
Emotions	○	○	○	○	○
Overall appearance	○	○	○	○	○

Influencer presence.

Please indicate:

18

I feel like I am in the presence of another human-being. *

- Yes
- No

19

The influencer is being controlled by someone or something else. *

- Yes
- No

20

The Influencer morally knows what is right and wrong. *

- Yes
- No

Appendix B: Final Study questions

Please indicate:

Your Gender

- Male
- Female
- Other

Your Age

Your home country

- Germany
- Netherlands
- Other

Highest degree or level of education you have completed

- High School degree or equivalent (Abitur)
- Bachelor's degree
- Master's degree
- Ph.D or higher
- No degree
- Other

Your current employment status?

- Student
- Employed Full-Time
- Employed Part-Time
- Unemployed
- Retired
- Other

How often do you use Instagram?

- Daily
- 4-6 times a week
- 2-3 times a week
- Once a week
- Never

I am familiar with the influencer in the post

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

I follow the influencer on Instagram

- Yes
- No

The following statements are related to the brand Puma.

Please indicate:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am familiar with the brand Puma							
I am familiar with the brand based on previous experiences							
Puma has a good reputation							

I have purchased a product of the brand before

- Yes
- No
- I am not sure

I am likely to purchase a product of the brand

- Yes
- No
- I am not sure

Based on your first impression of the Instagram post, please indicate the following.

.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The post is original	○	○	○	○	○	○	○
The post is unusual	○	○	○	○	○	○	○
The post is novel	○	○	○	○	○	○	○
The post is innovative	○	○	○	○	○	○	○
The post is unique	○	○	○	○	○	○	○
The post is creative	○	○	○	○	○	○	○
The post is one of a kind	○	○	○	○	○	○	○
The post does not differentiate from others	○	○	○	○	○	○	○

Please state your opinion towards the chosen influencer for the spring collection.

.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The influencer is a believable representative of the brand Puma	○	○	○	○	○	○	○
The influencer is a good fit for the brand	○	○	○	○	○	○	○
The influencer is a threat for Puma's brand image	○	○	○	○	○	○	○
I believe the influencer would wear the new spring collection	○	○	○	○	○	○	○
I would purchase the sneaker that is promoted by the influencer	○	○	○	○	○	○	○

Please state your general feelings towards the brand Puma after seeing the Instagram post.

.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Puma is appealing	○	○	○	○	○	○	○
Puma is a good brand	○	○	○	○	○	○	○
Puma is a pleasant brand	○	○	○	○	○	○	○
Puma is an unlikeable brand	○	○	○	○	○	○	○
Puma is a favorable brand	○	○	○	○	○	○	○

Please state your first impression of the influencer.

The influencer is...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
An expert in fashion	○	○	○	○	○	○	○
unexperienced	○	○	○	○	○	○	○
qualified	○	○	○	○	○	○	○
knowledgable	○	○	○	○	○	○	○
unskilled	○	○	○	○	○	○	○

The influencer is...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
trustworthy	○	○	○	○	○	○	○
dependable	○	○	○	○	○	○	○
honest	○	○	○	○	○	○	○
unreliable	○	○	○	○	○	○	○
sincere	○	○	○	○	○	○	○

The influencer is...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
attractive	○	○	○	○	○	○	○
classy	○	○	○	○	○	○	○
elegant	○	○	○	○	○	○	○
handsome	○	○	○	○	○	○	○
sexy	○	○	○	○	○	○	○
ugly	○	○	○	○	○	○	○

On a personal level...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I would get along with the influencer	○	○	○	○	○	○	○
I would enjoy a casual conversation with the influencer	○	○	○	○	○	○	○
I believe the influencer is someone I could become close friends with	○	○	○	○	○	○	○

Based on the Instagram post you saw, please state the following.

.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The scenario in the post looks realistic	○	○	○	○	○	○	○
The influencer is conscious of her actions	○	○	○	○	○	○	○
The posture of the influencer is natural	○	○	○	○	○	○	○
The facial expressions of the influencer look artificial	○	○	○	○	○	○	○
The outfit of the influencer is adequate	○	○	○	○	○	○	○
The overall appearance of the influencer is human-like	○	○	○	○	○	○	○

Lastly, when you were looking at the Instagram post, please state what was going through your mind.

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	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I felt like the influencer was aware of my presence	○	○	○	○	○	○	○
I felt like the influencer was controlled by someone else	○	○	○	○	○	○	○
The thought of the influencer not being real crossed my mind	○	○	○	○	○	○	○
The influencer appeared to be alive to me	○	○	○	○	○	○	○
I perceived the influencer as being only a computerized image	○	○	○	○	○	○	○

Appendix C. Briefings

1) Not told influencer is CGI

In the following you are shown an Instagram post **with 3 pictures** from this year's spring collection by the brand **Puma.** For the spring collection, Puma decided to collaborate with the Asian fashion brand **SLY**, on whose Instagram account the post was published.

The face of the new spring collection is a Tokyo-based fashion influencer with currently 175,000 followers on Instagram. Also, the influencer has previously collaborated with major fashion brands such as Calvin Klein, Burberry, Dior, and Nike.

Definition influencer: An influencer is someone who has the power to influence the purchase decision of others as a result of the size of their audience or their individual persuasiveness.

For Puma's spring collection, the influencer is promoting the new **unisex DEVA WN's sneaker.**

Based on your first impression on the Instagram post, please answer the following questions.

2) Told that influencer is CGI

In the following you see the **virtual influencer** Imma. Imma is **computer-animated** and part of the new, emerging influencer generation on Instagram.

Among famous models and other human influencers, Imma has already collaborated with big fashion brands like Calvin Klein, Burberry, Dior, and Nike. Now she is the new face of Puma's spring collection in 2020.

Definition influencer: An influencer is someone who has the power to influence the purchase decision of others as a result of the size of their audience or their individual persuasiveness.

In the next part, you are going to see an Instagram post with **3 pictures** of Puma's new collection, which was a collaboration with the Asian fashion brand SLY. In the posts, Imma is promoting the new **unisex DEVA WN's sneaker** of Puma's spring collection.

Based on your first impression of the Instagram post, please answer the following questions.

10. Literature Search Log

Date	Source	Search terms	Hits
27.02.20	Google Scholar	CGI influencer	5,150
27.02.20	Google Scholar	CGI characters	128,00
01.03.20	Google Scholar	CGI film	93,900
01.03.20	Google Scholar	Computer-animated characters	220,000
01.03.20	Google Scholar	Virtual agents	2,960,000
05.03.20	Google Scholar	Virtual avatars	182,000
05.03.20	Google Scholar	Virtual influencers	29,500
10.03.20	Google Scholar	Virtual characters purchase intentions	62,700
10.03.20	Google Scholar	Virtual characters brand attitude	77,900
11.03.20	Google Scholar	Interaction virtual characters	1,920,00
12.03.20	Scopus	purchase intentions	8,816

12.03.20	Scopus	Brand attitude	5,938
13.03.20	Scopus	Credibility AND endorsers	137
15.03.20	Scopus	Influencer marketing	524
15.03.20	Scopus	Social media	209,945
17.03.20	Scopus	Influencer brand match	7
20.03.20	Scopus	Endorser attractiveness	94
20.03.20	Scopus	Influencer AND trustworthiness	33

Reflection

Because CGI influencers are a new phenomenon it was hard to find existing literature on this topic. Hence, it was searched for literature on the topic of influencers and CGI characters separately. Google Scholar was preferred to look for existing literature on CGI animations and virtual characters because the search engine offers a broader coverage of sources and, also, a higher coverage of more recent topics. However, not all articles were accessible on Scholar and the search engine often showed results which did not align with my search terms. The platform Scopus was my second choice when it came to finding literature. The database is appropriate to use as it ensures that the presented articles are all peer-reviewed. Furthermore, all articles were easily accessible. However, on Scopus not many articles on recent topics are provided. Hence, for future literature search, I will keep on using both search engines. In addition, as mainly broader search terms were used to find literature, it can be argued that I should specify my literature search more in the future to find desired articles faster.