



A TREND OR IS THE FUTURE OF INFLUENCER MARKETING VIRTUAL?

The effect of virtual influencers and sponsorship disclosure on purchase intention, brand trust, and consumer engagement

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THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE

Abstract

Recently a new influencer type emerged, the virtual influencer. Using this influencer type in influencer marketing has become an interesting trend, as virtual influencers could be a potentially effective alternative to social media influencers in influencer marketing.

Additionally, since advertising regulatory bodies have updated their regulations, which requires online influencers to disclose commercial relationships, it is necessary to understand how sponsorship disclosure is interpreted by its customers and how it is affected by its influencer type. This research investigates if the source credibility mediates the effect of the influencer type. Therefore, the main research question is: “What are the (combined) effects of influencer type and sponsorship disclosure, as well as the mediating effect of source credibility, on consumers’ purchase intention, brand trust, and engagement level?”.

To answer the research question, this study consists of a 3 (influencer type: social media vs. humanised virtual vs. animated virtual) by 2 (sponsorship disclosure: disclosed vs undisclosed) between subject’s design, in an experimental test of six manipulated Instagram posts.

Findings of this research showed no direct effects of influencer type and sponsorship disclosure on purchase intention, brand trust, consumer engagement, and social presence.

However, the results did show that influencer type had an indirect effect on purchase intention, brand trust, and consumer engagement when mediated by source credibility.

Together, the findings contribute to the existing literature about the effect of source credibility of human and virtual influencers as well as the use of sponsorship disclosure in Instagram posts. They also provide practical guidelines for influencer marketing.

Keywords: virtual influencers, social media influencers, Instagram, disclosed sponsorship, source credibility

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Introduction

Over the last couple of years, influencer marketing has gained more interest from advertisers and scholars (Uzunoglu & Kip, 2014), as it is an effective approach for brands to connect with their customers (Tafesse & Wood, 2021). Furthermore, integrating advertisements as sponsored content of social media influencers (Evans, Phua, Lim, & Jun, 2017) enables brands to generate engagement (Domingues Aguiar & van Reijmersdal, 2018) and reach their customers effectively (Brown & Hayes, 2008).

Recently, a new type of online influencer, virtual influencers, emerged. These influencers are computer-generated influencers with realistic characteristics and features with human personalities (Moustakas, Lamba, Mahmoud, & Ranganathan, 2020). They have become an interesting trend for product promotion on social media (Get Snapppt, 2018). The appeal of using virtual influencers instead of social media influencers is their higher level of reliability and predictability compared to social media influencers, as humans can be irrational (Moustakas et al., 2020). Additionally, they offer brands all the control and power of the sponsored content (Kádeková & Holienčinová, 2018). Consequently, virtual influencers may be more cost-efficient than social media influencers. Therefore, virtual influencers could be an effective alternative to social media influencers (Thomas & Fowler, 2020). Still, research is needed to discover how customers feel about this new influencer type and what virtual influencer type should be utilised instead of social media influencers.

Since consumers do not always recognise influencers' sponsored content as advertising (Lueck, 2015), advertising regulatory bodies now require online influencers to disclose commercial relationships (Stichting Reclame Code, 2019). As both human and virtual influencers are utilised for sponsored content (Schouten, Janssen, & Verspaget, 2020) it is necessary to understand how sponsorship disclosure is interpreted by consumers and how

it impacts advertising outcomes (Ki & Kim, 2019), as well as how influencer type affects sponsorship disclosure.

Even though social media influencers and sponsorship disclosure are well-researched areas (Boerman, Van Reijmersdal, & Neijens, 2014) there is little empirical research about virtual influencers. Moreover, since influencer marketing studies are generally based on human influencers, there is little research about the effectiveness of virtual influencers (Moustakas et al., 2020), showing a considerable gap. Especially since virtual influencers are increasingly used in influencer marketing (Yap, 2018) and the increasing acceptance of consumers of augmented reality tools in marketing (Rese, Baier, Geyer-Schulz, & Schreiber, 2017).

Hence, this research aims to answer which influencer type is more effective, how sponsorship type affects brand aspects, and what influencer type has a more positive influence on consumers when the sponsorship is disclosed, as well as how influencers' source credibility characteristics mediate this effect.

Therefore, the main research question is: "What are the (combined) effects of influencer type and sponsorship disclosure, as well as the mediating effect of source credibility, on consumers' purchase intention, brand trust, and engagement level?"

So, to answer the research question, this study conducted an experiment with Instagram posts to investigate the impact of influencer type and sponsorship disclosure on purchase intention, brand trust, and consumer engagement.

Theoretical Framework

Influencers are no longer a hype but have proven to be an effective marketing strategy (Willemsen, Brom, & Withuis, 2019) with the influencer marketing industry growing immensely and being on track to be worth up to \$15 billion in 2022 (Santora, 2022).

There are several unique types of influencers, such as social media influencers and virtual influencers (Park et al., 2021).

The social media influencer can be conceptualised as an ordinary individual who is an opinion leader on digital social media (Gräve, 2017) with a relatively large following (Park et al., 2021). Since they are perceived as credible and relatable (Shan, Chen, & Lin, 2020), they can inform, entertain, and influence the thoughts, attitudes, and behaviours of their followers (Barta, Flavián, & Gurrea, 2021).

Virtual influencers are the virtual, computer-made version of social media influencers. These influencers can be made in any shape, style, or size, and take on any personality (Lewczyk, 2021). Although virtual influencers are often created using AI technology, there are teams behind the virtual influencers who decide what they post and how they interact with followers (Casarotto, 2021). Moreover, these teams also decide if the virtual influencer openly claims to be CGI, or if their virtual nature remains a secret (Adtraction, 2020). Nevertheless, just like social media influencers, they are trusted and admired and can influence the behaviour and lifestyle of their followers (Casarotto, 2021).

Virtual influencers can give companies a new and innovative way to connect with their audience different from social media influencers. Companies can have full control over virtual influencers, as they are fully customisable to fit any situation (Lewczyk, 2021). Moreover, they do not have physical limitations of time and space (Ewe, 2021), for instance, they are never too tired to post new content (Willemsen et al., 2019). Additionally, since virtual influencers do not age or die (Matthews, 2021), they can create storylines to grow

over the years. So, their contracts can also last longer (Sekhose, 2021). Furthermore, virtual influencers can partake in their interests without the real-life costs (Lewczyk, 2021). Making them also cheaper to work with in the long term than humans (Matthews, 2021). Finally, virtual influencers will not become entangled in a scandal unless brands consciously want them to (Willemsen et al., 2019). Thus, they can be safer brand ambassadors (Adtraction, 2020).

That said, the cost to create virtual influencers is high, and the possible lack of perceived authenticity from virtual influencers could be a major turn-off (Adtraction, 2020). Still, virtual influencers could offer brands many opportunities (Willemsen., 2019), but the question is will they completely replace the social media influencer?

Thus, to discover if the future of influencer marketing is virtual, this study compared both social media influencers and virtual influencers. Moreover, it studied if virtual influencers are perceived as credible influencers in influencer marketing, as well as how they affect consumers' purchase intention, brand trust, and engagement.

So, the following sections in this chapter provide important background knowledge into the dependent, independent, and mediating variables. As well as the interaction between the independent variables.

2.1 Purchase intention

According to Hsu, Lin, and Chiang (2013), before consumers make purchase decisions they turn to social media for advice. The purchase intention of consumers increased when using social media influencers (Jiménez-Castillo & Sánchez-Fernández, 2019), as they were found to have a stronger effect on purchase intention than celebrities, due to their perceived trustworthiness (Djafarova & Rushworth, 2017), and perceived similarity to consumers (Park, Xiang, Josiam, & Kim, 2014).

Additionally, due to social media influencers' ability to affect the purchase intention of consumers, it was demonstrated they positively influence consumers' perceptions and judgements of sponsored content (Jiménez-Castillo & Sánchez-Fernández, 2019).

Interestingly, in her study Hirschmann (2021) showed that 60 per cent of her respondents from Singapore found virtual influencers did not affect their purchase decision, as they found 'real' social media influencers had more impact on their purchase decisions than virtual influencers.

However, Gratch, Wang, Gerten, Fast, and Duffy (2007) found that virtual influencers can create rapport with consumers and can be perceived as authentic social beings (Park et al., 2021). Moreover, virtual influencers, especially when they are visually attractive, can generate social responses and behavioural change (Khan & Sutcliffe, 2014). Therefore, there are reasons to believe that virtual influencers can affect consumers' purchase intention.

2.2 Brand trust

Brand trust is described as customers' confidence in a brand and in the brand's ability to perform as expected in uncertain situation (Habibi, Laroche, & Richard, 2014).

Brand trust was discovered to be a critical element that contributes to long-term brand loyalty and purchase loyalty (Chaudhuri & Holbrook, 2001), and positively affects consumer's word-of-mouth behaviour (Lee, Kim, & Chan-Olmsted, 2011). Therefore, brand trust is assumed to be essential in sustaining a long-term customer relationship (Chaudhuri & Holbrook, 2001) and providing a significant sustainable competitive advantage (Ha, 2004).

Social media is an important channel to build customers' brand trust. Moreover, to build brand trust through influencer marketing brands need to become partners with influencers (Jun & Yi, 2020).

Past research suggested influencers can affect consumers since they are considered more trustworthy than other endorsers (Mudambi & Schuff, 2010). Still, the trustworthiness of influencers is not necessarily the same as brand trust. However, (Stewart, 2003) found that trust can be transferred. So, influencers' trustworthiness, as well as their other personality characteristics, can develop brand trust when they promote a brand (Laroche, Habibi, Richard, & Sankaranarayanan, 2012). However, this transfer of trust from an influencer to a brand is based on people's experience of the influencer. Meaning that people's trust in a brand can only be influenced by an influencer if people perceive the influencer as trustworthy (Grewal, Monroe, & Krishnan, 1998; Keller, 1993).

Moreover, influencers' engagement (Jun & Yi, 2020) positively affected consumers' brand trust (Britt, Hayes, Britt, & Park, 2020). So, an influencer's authenticity shapes brand trust (Jun & Yi, 2020). Additionally, since people assume influencers are independent of sponsored content, they trust influencers' brand recommendations more compared to other endorsers (Audrezet, de Kerviler, & Moulard, 2020).

2.3 Consumer engagement

Vivek, Beatty, and Morgan (2012) defined consumer engagement as the amount of active participation and connectedness consumers have with communication that was sent by other consumers or organisations. Brodie, Ilicc, Juric, and Hollebeek (2013) elaborated on this perspective and defined consumer engagement as a multidimensional concept consisting of affective, cognitive, and behavioural dimensions.

The affective dimension is the level of consumers' emotions regarding the subject, for instance, an influencer or brand, of their engagement (Hollebeek, 2011). The cognitive dimension indicates consumers' willingness to act on or understand a topic or skill (Brodie et al., 2013). It also guarantees consumers' enduring and active mental experiences regarding

the subject of their engagement (Hollebeek, Glynn, & Brodie, 2014). The behavioural dimension of consumer engagement is the amount of energy, effort, and time spent by consumers interacting with the subject of their engagement (Hollebeek, 2011), which can be measured by comments, likes, shares, and clicks (Gavilanes, Flatten, & Brettel, 2018).

Multiple scholars have conceptualised consumer engagement, but they all agreed consumer engagement generates behavioural results (Vivek et al., 2012; Brodie, Hollebeek, Juric, & Ilic, 2011). Behavioural results include word-of-mouth activity (France, Merrilees, & Miller, 2016), referrals, recommendations (Kumar et al., 2010), online interactions, or involvement. Consequently, this results in gaining customers' attention and loyalty, as well as customers' increased time and money spent on a brand (Abdul-Ghani, Hyde, & Marshall, 2012). Furthermore, consumer engagement was found to be a predictor of consumer behaviour (France et al., 2016).

Domingues Aguiar and van Reijmersdal (2018) found influencer marketing is utilised by brands, as influencers drive more engagement due to their persuasiveness. Moreover, influencers' brand posts are found to be more engaging than brands' posts (Casaló, Flavián, & Ibáñez-Sánchez, 2018).

Interestingly, Krämer, Lucas, Schmitt, and Gratch (2018) found that virtual agents can achieve similar social interactions as human interactions can and are also capable of engaging with consumers much like human influencers. Therefore, this study suggests that virtual influencers can drive consumer engagement.

2.4 Social media influencers

Social media influencers are described as individuals with a large number of followers on social media with high engagement rates (Kay, Mulcahy, & Parkinson, 2020), who can shape people's attitudes (Freberg, Graham, McGaughey, & Freberg, 2011).

Moreover, Kádeková and Holienčinová (2018) state they use their popularity and high engagement rates to endorse brands with sponsored content to persuade their followers into buying them. Social media influencers affect people's purchase intentions with their perceived authority, expertise (Kádeková & Holienčinová, 2018), trustworthiness (Bendon & Danielian, 2019), or relationship with their followers (Kádeková & Holienčinová, 2018).

2.5 Virtual influencers

Virtual influencers or artificial intelligence influencers are computer-generated influencers with a large following on social media (Moustakas et al., 2020). The majority of virtual influencers are not fully controlled by artificial intelligence but are still partly supervised by humans (Thomas & Fowler, 2020).

Brands want to use virtual influencers in their marketing strategies to profit from their large following (Kádeková & Holienčinová, 2018). However, since virtual influencers are not 'real', Kádeková and Holienčinová (2018) wondered if virtual influencers are authentic and credible enough to be perceived as brand ambassadors similar to social media influencers (Moustakas et al., 2020).

Even though virtual influencers do not exist in 'real' life, Robinson (2020) showed virtual influencers are perceived as authentic and 'real' as social media influencers, as their actions and engagement rates affect people's buying behaviour and brand preferences. Yet, Moustakas et al. (2020) stated virtual influencers' motivation for profit could affect their perceived authenticity. However, Robinson (2020) found this does not differentiate virtual influencers from social media influencers, since some virtual influencers are transparent about their virtual identity and their motivations, which means they are the most authentic influencers. Additionally, virtual influencers who are dishonest about their virtual identity can be compared to the majority of social media influencers who are dishonest about their

characteristics and assets. Thus, virtual influencers can be assumed as authentic as social media influencers (Robinson, 2020).

Consequently, it is not surprising that virtual influencers are also capable of influencing followers and consumers, as well as positively affecting brand benefits (Thomas & Fowler, 2020). Interestingly, it was discovered virtual influencers have three times more engagement than social media influencers (Ong, 2020).

Additionally, Khan and Sutcliffe (2014) found that anthropomorphic virtual influencers, particularly attractive representations, can evoke social responses and behavioural change in humans. This shows that people are more comfortable interacting with virtual influencers when they feel they are in the presence of something social, like a human being (Shen, 2012). This perceived humanity can be measured with social presence (Men & Tsai, 2015). Gunawardena (1995) defined social presence as “the degree to which a person is perceived as a “real person” in mediated communication” (Gunawardena, 1995, p. 151). However, when virtual influencers become too anthropomorphised and human-looking, they could lose rapport with people (Beer, Smarr, Fisk, & Rogers, 2015), because the uncanny likeness to humans can make people uncomfortable (Li, 2015).

As no literature could be found, according to the researcher’s knowledge, about virtual influencer’s effect on purchase intention and brand trust, this research assumes social media influencers have a more positive effect on purchase intention (Kádeková & Holienčinova, 2018) and brand trust (Bendon & Danielian, 2019) compared to virtual influencers. Additionally, since too anthropomorphised virtual influencers could lose rapport with people (Beer et al., 2015), and social media influencers are real humans, this research assumes that social media influencers have a more positive influence on social presence compared to virtual influencers.

However, as virtual influencers were found to have a more positive effect on consumer engagement than social media influencers (Ong, 2020), this research hypothesises that:

H1a: Social media influencers have a more positive influence on purchase intention, brand trust, and social presence compared to virtual influencers.

H1b: Virtual influencers have a more positive influence on consumer engagement compared to social media influencers.

2.6 Humanised vs. animated virtual influencers

The majority of virtual influencers are perceived as similar to humans regarding their physical appearance, personality and behaviour (Moustakas et al., 2020). Moreover, Shin and Lee (2020) discovered virtual influencers' social media posts that showed expressions of emotions or relationships with other virtual influencers received the highest engagement rate. So, when displaying human-like behaviour, virtual influencers could have more effect than when they do not.

This was confirmed by Seymour, Yuan, Dennis, and Riemer (2020), who showed consumers' judgements, attitudes, behaviours, and evaluations were affected by virtual influencers' representation. Virtual influencers were most successful when their representation activated anthropomorphizing, meaning attributing a level of perceived humanness to something, as anthropomorphizing influences how a source is evaluated (Nowak, Hamilton, & Hammond, 2009).

Some studies found more anthropomorphic representations more credible (Seymour et al., 2020), engaging, and likeable than less anthropomorphic representations (Wexelblat, 1997). Additionally, virtual avatars with enhanced human resemblances influence people's

purchase process (Webster, 1968) and perceived interpersonal trust (Riedl, Mohr, Kenning, Davis, & Heekeren, 2014).

However, Nowak et al. (2009) reported a less anthropomorphic visualisation was more credible and likeable than a more anthropomorphic visualisation. Moreover, scholars who studied the difference between humanised virtual influencers and animated virtual influencers could not determine which representation was more appealing to customers (Moustakas et al., 2020). The preference for less anthropomorphic representations in virtual characters could be explained by the uncanny valley theory, which states people feel a greater resemblance to more anthropomorphic characters until a character becomes too anthropomorphic, then it can activate an uneasiness in people (Seymour et al., 2020). Nevertheless, Seymour et al. (2020) found that between a highly anthropomorphic character and a cartoon character, a highly anthropomorphic character was perceived as more trustworthy and more similar. Thus, virtual influencers who resemble humans most will be more acceptable to people (Duffy, 2003) and will render a higher level of social presence (Schroeder & Epley, 2016).

Therefore, it is suggested more human-like virtual influencers will have more effect on the dependent variables than less human-like virtual influencers. This led to the hypothesis that:

H2: Humanised virtual influencers have a more positive influence on purchase intention, brand trust, consumer engagement, and social presence compared to animated virtual influencers.

2.7 Sponsored content

Sponsored content is defined as paid advertising distributed by influencers (De Veirman, Cauberghe, & Hudders, 2017). Paid advertisement's appearance is similar to the

original content from influencers (Wojdyski & Evans, 2015), so only when sponsorship is disclosed is it set apart from other content (Amazeen & Wojdyski, 2018). Therefore, knowledge is needed about what type of sponsorship disclosure is most effective in inducing a positive reaction from consumers.

Boerman and Van Reijmersdal (2016) discovered disclosed sponsorship negatively affected people's brand perceptions, purchase intentions, and engagement intentions (Boerman, 2020). Consequently, disclosing sponsorships activates people's persuasion knowledge (Eisend, van Reijmersdal, Boerman, & Tarrahi, 2020), which leads people to become more suspicious of persuasion attempts (Woodroof, Howie, Syrdal, & VanMeter, 2020), and higher levels of advertising recognition (Boerman, van Reijmersdal, Rozendaal, & Dima, 2018). This has negative consequences for the brand and influencers (van Reijmersdal et al., 2016). For instance, consumers' attitudes (Boerman et al., 2014) and consumers' reactions to sponsored content (Uzunoglu & Kip, 2014) are negatively affected.

Interestingly, it was also found disclosing sponsorship positively affected people's brand perceptions, engagement results (Evans et al., 2017), and purchase intentions (Kay et al., 2020). However, Hwang and Jeong (2016) compared disclosed and undisclosed sponsorships and reported no disclosure was more positively received.

Thus, disclosing sponsorship leads to more negative brand attitudes, lowers purchase intentions (van Reijmersdal et al., 2016), and lowers engagement (Boerman, 2020). Therefore, it can also be assumed that disclosed sponsorships will lead to lowered brand trust.

Moreover, since disclosed sponsorship results in consumers' having a more negative attitude (Boerman et al., 2014) and reactions (Uzunoglu & Kip, 2014), it can be expected that this will lead to adverse behavioural intention towards influencers. Therefore, this study assumes that when sponsorships are undisclosed people have less adverse behavioural intention towards influencers.

This led to the following hypotheses:

H3a: A message with no disclosed sponsorship will have a more positive influence on purchase intention, consumer engagement, and brand trust compared to a message with a disclosed sponsorship.

H3b: A message with no disclosed sponsorship will have less adverse behavioural intention towards the influencer compared to a message with a disclosed sponsorship.

2.8 The interaction effect of influencer type and sponsorship disclosure type

Knowledge is also needed about which influencer type is most effective in inducing a positive reaction from consumers when they are confronted with disclosed sponsorships.

Recent studies suggest influencer-brand congruence is critical for the acceptance of disclosed sponsored content (Schouten et al., 2020) since a strong influencer-brand congruence with sponsorship disclosure was found to have a positive effect on product attitudes (Kim & Kim, 2020), behavioural intentions (Breves, Liebers, Abt, & Kunze, 2019), and engagement, as well as lowering advertisement recognition (Kim & Kim, 2020). Consequently, influencer-brand congruence enhances the persuasiveness of the sponsored content (Kim & Kim, 2020).

Additionally, studies indicated disclosed sponsorships were positively received from influencers with a strong loyal following (Chapple & Cownie, 2017), also known as para-social interaction (Horton & Wohl, 1956). A strong para-social interaction was shown to affect followers' decisions (Rubin, Perse, & Powell, 1985), brand assessments, brand results, and purchase intentions (Lee & Watkins, 2016). Moreover, Jun and Yi (2020) found this attachment to an influencer positively affects consumers' brand trust. Therefore, sources with high authenticity, due to a strong para-social interaction, are perceived to have higher

credibility (Djafarova & Rushworth, 2017) and are assumed to have a more positive effect when sponsorship is disclosed (Chapple & Cownie, 2017).

Furthermore, influencers consumers feel a strong similarity towards, positively affect consumers' advertisement perception (Schouten et al., 2020), as well as their purchase intention (Choi & Rifon, 2012).

This research assumes social media influencers will be more effective than virtual influencers in inducing a positive reaction from consumers when sponsorship is disclosed. Since this research expects consumers will perceive a stronger influencer-brand congruence between a social media influencer and a brand, as social media influencers and consumers are both 'real' humans, and consumers are assumed to perceive influencer-brand congruence more easily when the influencer is perceived to be more similar to the consumer (Schouten et al., 2020; Choi & Rifon, 2012).

This led to the hypotheses that:

H4a: A disclosed sponsorship will have a more positive influence on purchase intention, brand trust, and consumer engagement for a social media influencer than for a humanised virtual influencer or an animated virtual influencer.

H4b: A disclosed sponsorship will have less adverse behavioural intention towards the influencer for a social media influencer than for a humanised virtual influencer or an animated virtual influencer.

2.9 Source credibility

According to the source credibility model, influencers' perceived characteristics can transfer to their shared message, which in turn can influence their followers (Ohanian, 1990). According to Ohanian (1991), the factors of the source credibility model that affect the desired results of influencers' messages are the influencers' perceived trustworthiness,

expertise, and attractiveness. Usually, if the influencer is perceived as an expert, trustworthy and attractive, they can persuade people's brand attitudes and consumer behaviour (Ohanian, 1990), as well as their purchase intention (Gunawan & Huarng, 2015).

Therefore, this research argues, if an influencer (social or virtual) has low source credibility, they will lose the ability to influence brand attitudes or engagement of consumers with sponsored posts (disclosed or undisclosed) and so the effect will not happen. However, social media or virtual influencers' source credibility could also mediate the relationship between social media or virtual influencers' sponsored posts (disclosed or undisclosed) and consumer brand attitudes (Dekker & van Reijmersdal, 2013).

Consequently, this research suggests source credibility factors mediate the relationship between influencer type and the dependent variables, as well as the relationship between sponsorship disclosure and the dependent variables. This led to the hypotheses that:

H5a: The effect of influencer type on purchase intention, brand trust, and consumer engagement, is mediated by their source credibility (their attractiveness, trustworthiness, and expertise).

H5b: The effect of a sponsorship disclosure (indicated or not) on purchase intention, brand trust, and consumer engagement is mediated by source credibility (attractiveness, trustworthiness, and expertise) of the influencer type.

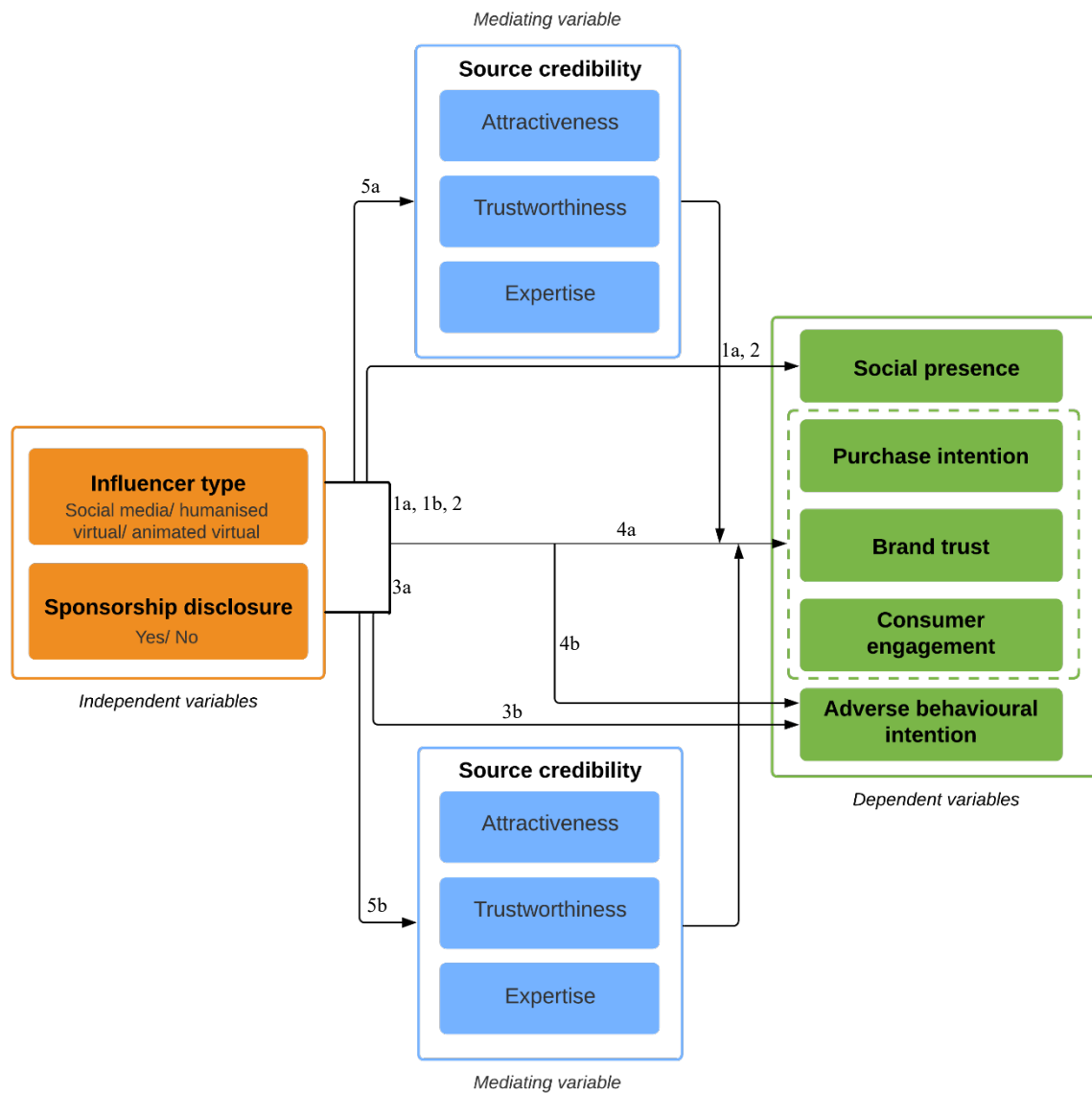


Figure 1. Research Model

Research Methodology

Design & Procedure

Design.

To examine how influencer type and sponsorship disclosure affect purchase intention, brand trust and consumer engagement this study designed an online questionnaire. Both the influencer type and sponsored disclosure were manipulated for Instagram posts. Therefore, this study consists of a 3 (influencer type: social media vs. humanised virtual vs. animated virtual) by 2 (sponsorship disclosure: disclosed vs undisclosed) between subject's design.

The online questionnaire (see Appendix 5) had six manipulations and a questionnaire that was divided into the following categories: 'socio-demographics', 'purchase intention', 'brand trust', 'consumer engagement', 'source credibility', 'adverse behaviour towards the influencer', and 'social presence'.

The questionnaire was made using the website Qualtrics.com and distributed online. This allowed participants to complete the questionnaire on their chosen device, their chosen environment, and their chosen time. The online questionnaire was conducted in English since this is the language most influencers have as their language of choice. Before the questionnaire was distributed it was approved by the Ethics Committee of the University of Twente.

Procedure.

Participants were selected using purposive sampling and snowball sampling. Participants were approached through social media channels such as Instagram and WhatsApp, as well as email and face-to-face communication with friends, family, and unknown individuals.

In the introduction of the questionnaire, the purpose of the study was broadly explained to the participants. At the beginning of the questionnaire, the study used the filter questions ‘Are you between 18 and 34 years old’ and ‘Do you have an Instagram account’ to ensure that participants met the required criteria for participating in this study. Hereafter, participants were shown an image of a manipulation of an Instagram post. The manipulations were randomly distributed among the participants, but each participant was only shown one manipulation. After the participants observed the Instagram post manipulation, they answered questions about the manipulations shown at the start of the questionnaire. When they completed the questionnaire, the participants were thanked for their cooperation and were informed more specifically about the purpose of the study.

Furthermore, participants were asked not to discuss the questionnaire with friends or acquaintances who were eligible to participate in the study. As prior knowledge of the questions could invalidate the results.

Participants

As the online questionnaire had six manipulations, 264 (around 40 per manipulation) participants between 18 and 34 years old took part in the online questionnaire. The age of the participants ranged from 18 to 34 ($M = 23.07$; $SD = 3.41$). There were 130 men and 130 female participants that took part in the online questionnaire, as well as 2 non-binary/ third gender people and 2 who preferred not to say. 177 participants had some sort of an academic degree (MBO, HBO, WO, PhD), while 84 participants had a high school diploma.

Participants were randomly assigned to one of the six manipulations (see Table 1).

Participants voluntarily took part in this study and were partly told the purpose of the study before filling in the questionnaire. People who did not have an Instagram account or were not between 18 and 34 years old were excluded from participating in the questionnaire.

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Table 1

Distribution of sample characteristics per manipulation (N = 264)

		Sponsorship disclosure type					
		Disclosed (<i>N</i> = 127)			Undisclosed (<i>N</i> =137)		
Influencer type							
Social media (<i>N</i> =86)		<i>N</i> = 43			<i>N</i> = 43		
	Gender	Male	25		Gender	Male	20
		Female	17		Female	23	
	Age	Non-binary/ third gender	0		Non-binary/ third gender	0	
		Prefer not to say	1		Prefer not to say	0	
		M	24.00		M	23.00	
		SD	3.46		SD	3.50	
		Humanised virtual (<i>N</i> =94)			<i>N</i> = 52		
		Gender	Male	19		Gender	Male
Female	23			Female	30		
	Age	Non-binary/ third gender	0		Non-binary/ third gender	0	
		Prefer not to say	0		Prefer not to say	0	
		M	22.83		M	22.48	
		SD	3.24		SD	3.44	
		Animated virtual (<i>N</i> =84)			<i>N</i> = 42		
		Gender	Male	23		Gender	Male
Female	16			Female	21		
	Age	Non-binary/ third gender	2		Non-binary/ third gender	0	
		Prefer not to say	1		Prefer not to say	0	
		M	22.93		M	23.32	
		SD	3.10		SD	3.68	

Stimuli materials

Preliminary test.

For this study, a preliminary test was executed to check the validity of the manipulated stimuli and to test which stimuli should be used for the main study. The components that were tested concerned the types of influencers (human influencers, humanised virtual influencers, animated virtual influencers), product (coffee), and sponsorship disclosure of the Instagram posts.

Types of influencers

To ensure that the social media influencers were not well-known among the participants, only social media influencers with a follower rate below 500,000 were included.

These images of the virtual influencers (humanised and animated) were created by a graphic designer on behalf of the researcher with Adobe Photoshop (see Appendix 2). This meant that the virtual influencers had the same background, clothing, pose as the social media influencer. Moreover, the humanised influencers also shared the same skin and hair colour as the social media influencer, while the animated virtual influencers' skin and hair colour stayed consistent with their face for them to appear more realistic.

In this preliminary test, 5 participants (3 female, 2 male) were asked via Skype to express their opinions about the manipulated stimuli.

The preliminary test was conducted via Skype due to COVID-19 related restrictions.

The questions about the influencers tested the validity and credibility of the influencer. Additionally, the participants were asked about the perceived humanness and animateness of the virtual influencers, while the participants were asked about the perceived realism of the social media influencers. Moreover, participants were asked about the perceived fit of the influencers for both men and women.

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Furthermore, an explanation of virtual influencers was given to the participants with the question if they understood that virtual influencers were after reading the definition.

Products

Moreover, the participants were asked to rank five different products (coffee, smoothie, energy drink, sunscreen, and sneakers) according to their perceived appeal and liking, as well as how likely they were to engage with the product online, purchase the product after seeing it online, and purchase the product due to an influencer's recommendation. Furthermore, participants were asked about the perceived fit of the products for both men and women.

The participants were also asked to evaluate four Instagram posts of an influencer with a backpack, about their perceived level of sponsorship (see Appendix 2). The focus was on the elements of (un)disclosure and not on the image and influencer itself.

Findings preliminary test

Firstly, after the preliminary test it was revealed that overall, all the female influencers were perceived as most realistic looking and were found to have the ability to appeal to and influence both men and women compared to the male influencers. The female social media influencer and the female humanised virtual influencer were preferred by three of the five participants. Moreover, the female animated virtual influencer was preferred by all five participants. They were found to be more animated looking compared to the male influencer in the same category. Therefore, all the female influencer types were selected to use for the main study.

Secondly, the findings of the preliminary test showed that the Instagram post that all the participants found to be most likely to be sponsored was the Instagram post that used the

hashtags ‘ad’ and ‘sponsored’, tagged the brand’s Instagram page by using the ‘@’ sign, explicitly mentioned the type of product shown in the image, as well as the geotag ‘paid sponsorship with ‘Fjällräven’. The Instagram post that all participants found to be least likely to be sponsored was the Instagram post that had no hashtags, tagged Instagram brand pages, or geotags. The Instagram post also did not mention anything about the brand or product shown in the image. Therefore, these two types of Instagram posts were selected for the main study.

Finally, the outcome of the preliminary test showed that ‘coffee’ was the product that was most liked. As three out of five of the participants chose this product, while the two other participants chose ‘smoothie’ or ‘sunscreen’. However, ‘coffee’ was perceived by all the participants to be most appealing to both men and women out of all the different products. Moreover, coffee was said by all participants to be the product that would be the most likely to appear on their Instagram feed. Therefore, coffee was chosen as the product for the main study.

Main study.

For each influencer type (social media, humanised and animated) two stimuli were created. These stimuli were identical, except for the type of sponsorship disclosure content. So, the findings from the pre-test led to six manipulations of an Instagram post of three types of influencers for the same coffee brand (see Figure 2).

The manipulations of the Instagram post were designed by the author and a graphic designer on behalf of the author of this study. The material used to create the manipulations of the influencers were found on the influencers’ Instagram accounts. To design the experimental stimuli for this study, the software program Adobe Photoshop was used.

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Instagram post

The stimuli were designed to resemble a real Instagram post, so the measured effects could not be due to inconsistencies within the design. Moreover, as Instagram is a mobile app on people's mobile devices, the Instagram posts were designed to resemble the interface of Instagram on the mobile application. This was created by using the same fonts, structure, and layout of Instagram as well as using the usernames and profile pictures of the influencers. Additionally, to make the Instagram posts look more believable, small details such as the date, the number of likes and a caption were added.

The caption underneath the image of the post was written in such a manner that it resembled captions of influencers about the same product category on Instagram, but it was still kept constant. The captions were written in English because the majority of influencers communicate in this language, and since the questionnaire was distributed in this language.

Finally, as the evaluation of the influencer as humanised or animated was only based on the image of the Instagram post, the usual comment section next to the image was removed to avoid any distractions and to direct the focus of the participants exclusively to the image.

Product

The study aimed to rule out potential gender differences, so the study opted for a product that both females and males were likely to appreciate and engage with. Therefore, after conducting the preliminary test, the product 'coffee' was chosen.

For the product, the non-fictitious brand name 'Sail Away' was used within the advertising disclosures of the Instagram posts. This brand name was from a coffee brand that is relatively small and mostly unknown. This non-fictitious brand name was decided upon to appear more realistic. A brand name from a small organisation that was relatively unknown

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was chosen to prevent the participants' previous brand knowledge and attitude to influence the outcomes of the study.

The name of the non-fictitious brand was mentioned in the Instagram captions with sponsorship disclosure, to ensure that the post would appear more realistic since observation of Instagram posts of influencers showed that the brand name of a product was usually included in the caption of a post.

The manipulations that disclosed sponsorship in the Instagram posts contained a caption above the image and underneath the username that said 'Paid partnership with *Sail Away*'. Furthermore, the post showed the product in the picture with the brand name and mentioned the product, it also used multiple hashtags (#ad, #sponsored) as well as referred to the brand's Instagram page with the '@' symbol.

While the undisclosed sponsorship Instagram posts only showed the product in the picture of the Instagram post with the brand name and did not mention the product in the caption. Moreover, no hashtags, tags, or the '@' symbol were used in the caption for these manipulations.

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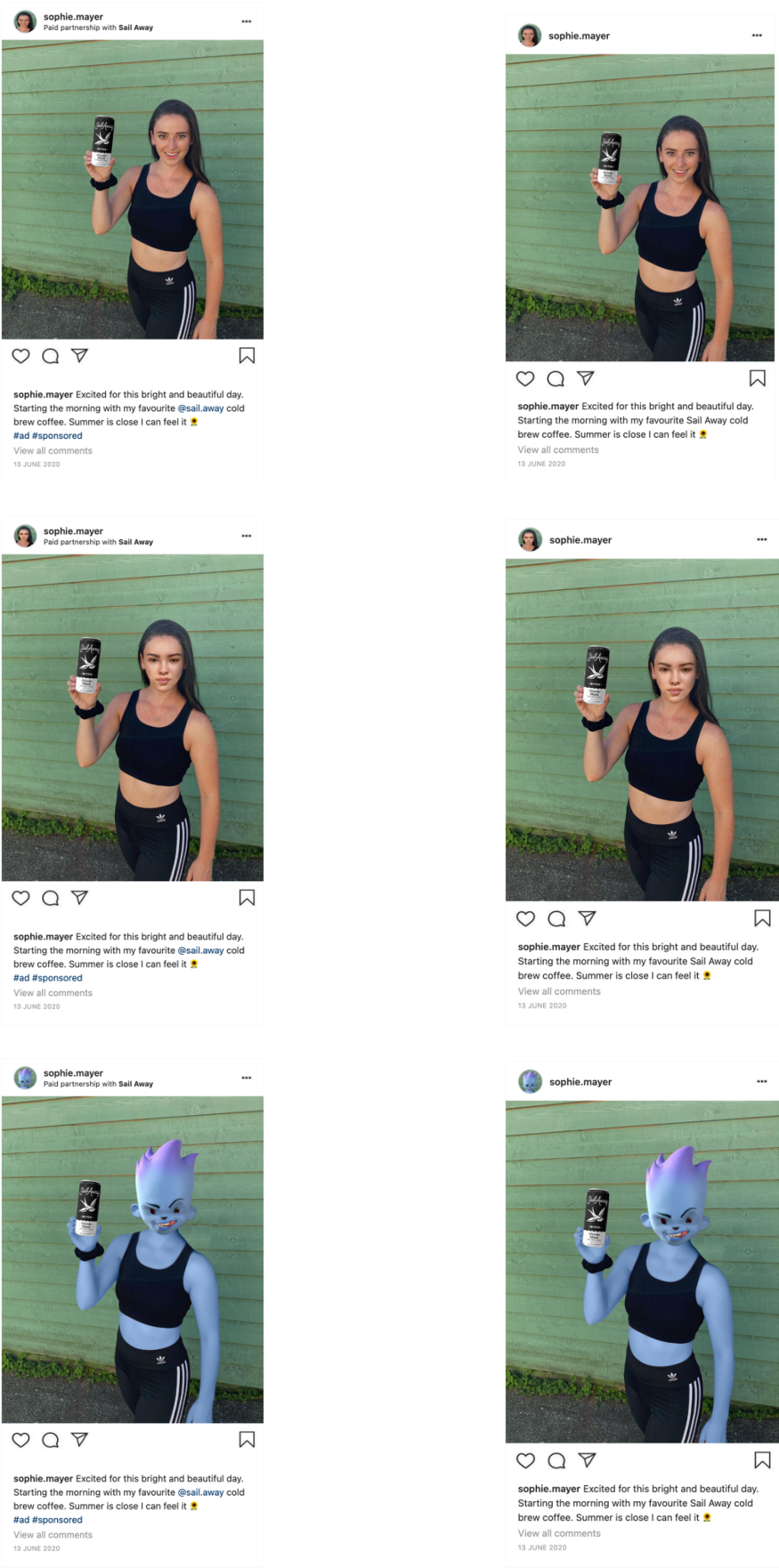


Figure 2. Main study manipulations

Measures

The online questionnaire contained questions where the dependent variables (purchase intention, brand trust, consumer engagement, social presence, and adverse behavioural intentions towards the influencer) and the mediating variable (source credibility) were measured. Additional variables such as socio-demographics, Instagram usage, and familiarity with the influencer and the brand were also measured.

Purchase intention.

Purchase intention was measured with four single items adapted from Taylor and Baker (1994) and Putrevu and Lord (1994) (see Appendix 4 for items). The items in the scale were measured using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The four items formed a reliable scale (Cronbach's alpha is .77).

Brand trust.

Brand trust was measured with six items, which were adapted from Chaudhuri and Holbrook (2001) and Laroche et al. (2012) (see Appendix 4 for items). The items in the scale were measured using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The six items formed a reliable scale (Cronbach's alpha is .89).

Consumer engagement.

Consumer engagement was measured with three components: cognitive, affective, and behavioural consumer engagement. Cognitive consumer engagement was measured with three single items and affective consumer engagement was measured with four single items. Both the items from cognitive and affective consumer engagement were measured with a scale adapted from Hollebeek et al. (2014). Behavioural consumer engagement was measured

with nine single items adapted from Berne-Manero and Marzo-Navarro (2020) (see Appendix 4 for items). The items in the scales were measured using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The three items for cognitive consumer engagement formed a reliable scale (Cronbach's alpha is .88). The four items for affective consumer engagement formed a reliable scale (Cronbach's alpha is .94). The nine items for behavioural consumer engagement formed a reliable scale (Cronbach's alpha is .91). The sixteen items for consumer engagement formed a reliable scale (Cronbach's alpha is .95).

Source credibility.

Source credibility was measured with attractiveness, trustworthiness, and expertise. These variables were measured with a scale adapted from Ohanian (1990), with four items per component (see Appendix 4 for items). The items in the scale were measured using a bipolar Likert scale. The four items for attractiveness formed a reliable scale (Cronbach's alpha is .92). The four items for trustworthiness formed a reliable scale (Cronbach's alpha is .96). The four items for expertise formed a reliable scale (Cronbach's alpha is .95). The 12 items for source credibility formed a reliable scale (Cronbach's alpha is .95).

Adverse behavioural intention towards the influencer.

Adverse behavioural intention towards the influencers was measured with three components: 'swiping further', 'writing a negative comment' and 'unfollowing the specific influencer'. These variables were measured with a scale adapted from (Preckeler, 2019), with two items for the components 'swiping further' and 'writing a negative comment' and one item for the component 'unfollowing the specific influencer' (see Appendix 4 for items). The items in the scale were measured using a 7-point Likert scale, ranging from 1 (strongly

disagree) to 7 (strongly agree). The five items formed an acceptable scale (Cronbach's alpha is .63).

Social presence.

Social presence was measured with five single items based on Gefen and Straub (2003) (see Appendix 4 for the items). The items in the scale were measured using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The five items formed a reliable scale (Cronbach's alpha is .93).

Results

In this chapter, the results of the online experiment are presented. First, statistical analyses regarding the main and interaction effects for supporting the hypotheses are discussed. Furthermore, the mediating role of source credibility is explained.

Multivariate analysis of variance

A multivariate analysis of variance (MANOVA) was used to investigate the effects of influencer type and disclosure type conceptualization on purchase intention, brand trust, consumer engagement, and the mediator source credibility.

Using this analysis, the effects of influencer type and disclosure type conceptualization on adverse behavioural intention towards the influencer and social presence were also investigated.

There was a Wilks' Lambda performed to examine the general effects between the independent and combined dependent variables. The results of the multivariate analysis are displayed in Table 2.

Table 2

Multivariate tests

	Independent variable	<i>F</i>	<i>p</i>
Wilks' Lambda	Influencer type	3.36	< .001
	Disclosure type	.55	.87
	Influencer type*Disclosure type	1.22	.22

A Wilks' Lambda test shows that there is a significant main effect of influencer type on the combined dependent variables throughout ($\Lambda = 0.76$, $F(22, 496) = 3.36$, $p < .001$).

However, there was no significant main effect of disclosure type found ($\Lambda = 0.98$, $F(11, 248) = .55$, $p = .87$). Moreover, no significant interaction effect was found between the independent variables ($\Lambda = 0.90$, $F(22, 496) = 1.22$, $p = .22$).

A Roy's Largest Root test did show that there is a significant interaction effect between the independent variables ($\phi_{\max} = .09$, $F(11, 249) = 2.03$, $p = .03$).

Main effects of influencer type

Table 3 shows that there was a significant main effect of influencer type on the combined dependent variables. A summary of the means and standard deviations of the dependent variables can be found in Table 4.

Table 3

Test of between subject design effect

Independent variable	Dependent variable	<i>F</i>	<i>p</i>
<i>Influencer type</i> : Real/ Humanised/ Animated	Purchase intention	.96	.39
	Brand trust	.02	.98
	Consumer engagement	.18	.84
	Cognitive dimension	.17	.85
	Affective dimension	.70	.50
	Behavioural dimension	.01	.99
	Source credibility	8.56	< .001
	Attractiveness	26.03	< .001
	Trustworthiness	2.98	.05
	Expertise	.79	.46
	Adverse behavioural intention	4.68	.01
	Social presence	.79	.46

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A MANOVA analysis showed that influencer type had a significant main effect on source credibility ($F(2, 258) = 8.56, p < .001$). The influencer type social media influencer was found to be a more credible source ($M = 3.79, SD = 1.13$) than an animated virtual influencer ($M = 3.00, SD = 1.38$). The influencer type humanised virtual influencer ($M = 3.59, SD = 1.32$) was also considered to be a more credible source than an animated virtual influencer ($M = 3.00, SD = 1.38$).

Moreover, influencer type had a significant main effect on attractiveness ($F(2, 258) = 26.03, p < .001$). The influencer type social media influencer was considered more attractive ($M = 4.32, SD = 1.25$) than animated virtual influencer ($M = 2.79, SD = 1.61$). The influencer type humanised virtual influencer ($M = 3.98, SD = 1.46$) was also considered to be more attractive than an animated virtual influencer ($M = 2.79, SD = 1.61$).

Furthermore, influencer type had a significant main effect on trustworthiness ($F(2, 258) = 2.98, p = .05$). The influencer type social media influencer was considered more trustworthy ($M = 3.59, SD = 1.36$) than influencer type animated virtual influencer ($M = 3.05, SD = 1.48$).

Additionally, influencer type had a significant main effect on adverse behavioural intention towards the influencer ($F(2, 258) = 4.68, p = .01$). An animated virtual influencer ($M = 3.62, SD = 1.15$) was considered to have a higher level of adverse behavioural intention towards it, than towards a social media influencer ($M = 3.16, SD = .97$).

Table 4

Summary influencer type means (M) and standard deviations (SD)

	Real influencers		Humanised influencers		Animated influencers	
	N= 86		N= 94		N= 84	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Purchase intention	2.46	1.17	2.27	1.22	2.23	1.12
Brand trust	3.08	1.09	3.06	1.09	3.07	1.16
Consumer engagement	2.80	1.13	2.74	1.03	2.70	1.12
Cognitive dimension	3.78	1.54	3.66	1.51	3.65	1.52
Affective dimension	3.07	1.44	2.91	1.29	2.83	1.36
Behavioural dimension	2.35	1.13	2.35	1.06	2.33	1.15
Source credibility	3.79	1.13	3.59	1.32	3.00	1.38
Attractiveness	4.32	1.25	3.98	1.46	2.79	1.61
Trustworthiness	3.59	1.36	3.40	1.52	3.05	1.48
Expertise	3.46	1.38	3.39	1.64	3.17	1.60
Adverse behavioural intention	3.16	0.97	3.29	0.97	3.62	1.15
Social presence	3.03	1.39	3.01	1.46	2.78	1.38

Main effects of disclosure type

Table 5 shows there was no main effect found for sponsorship disclosure type on the combined dependent variables.

A summary of the means and standard deviations of the dependent variables can be found in Table 6.

Table 5

Test of between subjects' design effect

Independent variable	Dependent variable	<i>F</i>	<i>p</i>
<i>Disclosure type:</i> Disclosed/ Undisclosed sponsorship	Purchase intention	.07	.79
	Brand trust	.00	.99
	Consumer engagement	.29	.59
	Cognitive dimension	.85	.36
	Affective dimension	.55	.46
	Behavioural dimension	.02	.90
	Source credibility	.07	.79
	Attractiveness	.27	.61
	Trustworthiness	.10	.75
	Expertise	.25	.62
	Adverse behavioural intention	1.25	.27
	Social Presence	.47	.49

Analyses of the dependent variables in Table 5 shows that there was no significant main effect of sponsorship disclosure type on the dependent variables. This analysis shows that there were no differences in purchase intention, brand trust, consumer engagement, adverse behaviour, social presence, source credibility (attractiveness, trustworthiness, expertise) between the groups who were exposed to an Instagram post where the sponsorship

was disclosed and the groups who were exposed to an Instagram post where the sponsorship was not disclosed.

Table 6

Summary type of disclosure means (M) and standard deviations (SD)

	Undisclosed sponsorship <i>N</i> = 137		Disclosed sponsorship <i>N</i> = 127	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Purchase intention	2.33	1.07	2.30	1.28
Brand trust	3.07	1.10	3.07	1.12
Consumer engagement	2.71	1.03	2.78	1.15
Cognitive dimension	3.61	1.50	3.80	1.54
Affective dimension	2.88	1.33	3.00	1.40
Behavioural dimension	2.34	1.05	2.35	1.17
Source credibility	3.50	1.29	3.44	1.35
Attractiveness	3.76	1.55	3.66	1.61
Trustworthiness	3.33	1.44	3.37	1.51
Expertise	3.40	1.50	3.28	1.61
Adverse behavioural intention	3.42	1.04	3.28	1.04
Social presence	3.01	1.37	2.88	1.45

Interaction effect of influencer type and sponsorship disclosure type

There was no interaction effect found between the independent variables, influencer type and disclosure type, on the dependent variables, which is shown in Table 7.

A summary of the means and standard deviations of the dependent variables can be found in Table 8 and Table 9.

Table 7

Test of between subjects' design effect

Independent variable	Dependent variable	<i>F</i>	<i>p</i>
Influencer type*Disclosure type	Purchase intention	.68	.51
	Brand trust	1.03	.36
	Consumer engagement	1.37	.26
	Cognitive dimension	1.17	.31
	Affective dimension	1.94	.15
	Behavioural dimension	1.75	.18
	Source credibility	.38	.69
	Attractiveness	.26	.78
	Trustworthiness	.34	.71
	Expertise	2.00	.14
	Adverse behavioural intention	.40	.67
	Social presence	.37	.69

The analysis of the interaction between the independent variables and the dependent variables in Table 7 shows that there was no significant interaction effect of influencer type and sponsorship disclosure type on the dependent variables. This analysis shows that there were no differences in purchase intention, brand trust, consumer engagement, adverse behaviour, social presence, source credibility (attractiveness, trustworthiness, expertise) between the groups who were exposed to an Instagram post where the sponsorship was

disclosed and the groups who were exposed to an Instagram post where the sponsorship was not disclosed, regardless of the influencer type that was portrayed in the Instagram post.

Table 8

Summary influencer type and disclosure type means and standard deviations part 1

		Real influencers <i>N</i> =86		Humanised influencers <i>N</i> =94		Animated influencers <i>N</i> =94	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Undisclosed sponsorship <i>N</i> = 137	Purchase intention	2.42	1.08	2.23	1.09	2.37	1.07
	Brand trust	2.97	1.05	3.18	1.09	3.05	1.17
	Consumer engagement	2.61	.99	2.75	.97	2.77	1.15
	Cognitive dimension	3.71	1.44	3.42	1.47	3.73	1.59
	Affective dimension	2.78	1.42	2.99	1.29	2.85	1.32
	Behavioural dimension	2.16	.98	2.41	.99	2.42	1.19
	Source credibility	3.76	1.20	3.70	1.24	2.98	1.32
	Attractiveness	4.37	1.35	3.95	1.30	2.91	1.67
	Trustworthiness	3.51	1.41	3.47	1.47	2.96	1.38
	Expertise	3.39	1.36	3.67	1.53	3.07	1.56
	Adverse behavioural intention	3.18	.98	3.32	.95	3.78	1.14
	Social presence	2.98	1.40	3.12	1.42	2.89	1.31

Table 9

Summary influencer type and disclosure type means and standard deviations part 2

		Real influencers <i>N</i> =86		Humanised influencers <i>N</i> =94		Animated influencers <i>N</i> =94	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Disclosed sponsorship <i>N</i> = 127	Purchase intention	2.50	1.27	2.32	1.38	2.09	1.17
	Brand trust	3.19	1.13	2.92	1.08	3.09	1.16
	Consumer engagement	2.99	1.23	2.72	1.12	2.63	1.09
	Cognitive dimension	3.85	1.64	3.96	1.52	3.57	1.47
	Affective dimension	3.36	1.43	2.80	1.29	2.82	1.43
	Behavioural dimension	2.54	1.24	2.27	1.16	2.24	1.11
	Source credibility	3.82	1.06	3.46	1.42	3.02	1.44
	Attractiveness	4.26	1.17	4.02	1.65	2.67	1.54
	Trustworthiness	3.67	1.32	3.32	1.60	3.13	1.59
	Expertise	3.53	1.43	3.05	1.73	3.27	1.65
	Adverse behavioural intention	3.13	.96	3.25	1.00	3.47	1.14
	Social presence	3.07	1.39	2.89	1.51	2.67	1.46

Mediation effect of source credibility

Besides the direct main and interaction effects of the independent variables on the dependent variables, the mediation effect of the possible mediating variable source credibility was tested. Since there was only a main effect of influencer type on the dependent variables found ($\Lambda = 0.76$, $F(22, 496) = 3.36$, $p < .001$) and there was no significant main effect found of disclosure type on purchase intention, brand trust, and consumer engagement, a mediation effect could only possibly occur between influencer type and the dependent variables purchase intention, brand trust, and consumer engagement.

A mediation analysis was performed by Model 4 of the PROCESS macro for SPSS, by Hayes (2018).

Purchase intention.

A mediation analysis (Figure 3) was carried out to find out whether source credibility mediates the effect of influencer type on purchase intention. Firstly, the effect of the independent variable influencer type on the dependent variable purchase intention, ignoring the mediator (source credibility), showed that influencer type is not a significant predictor of source credibility ($b = -.004$, $t(261) = -.048$, $p = .962$). Secondly, the effect of influencer type on the mediator source credibility was found to be significant ($b = -.393$, $t(262) = 3.999$, $p < .001$). Thirdly, the mediation analysis showed that the effect of the mediator (source credibility), controlling for influencer type, was significant ($b = .287$, $t(261) = 5.327$, $p < .001$). Fourthly, when controlling for the mediator (source credibility) the independent variable influencer type was found to not be a significant predictor towards purchase intention ($b = -.117$, $t(262) = -.299$, $p = .195$). Finally, the indirect effect was tested using non-parametric bootstrapping. The indirect effect was found to be statistically significant ($b = -.113$, $SE = .044$, 95% CI = $[-.210, -.042]$).

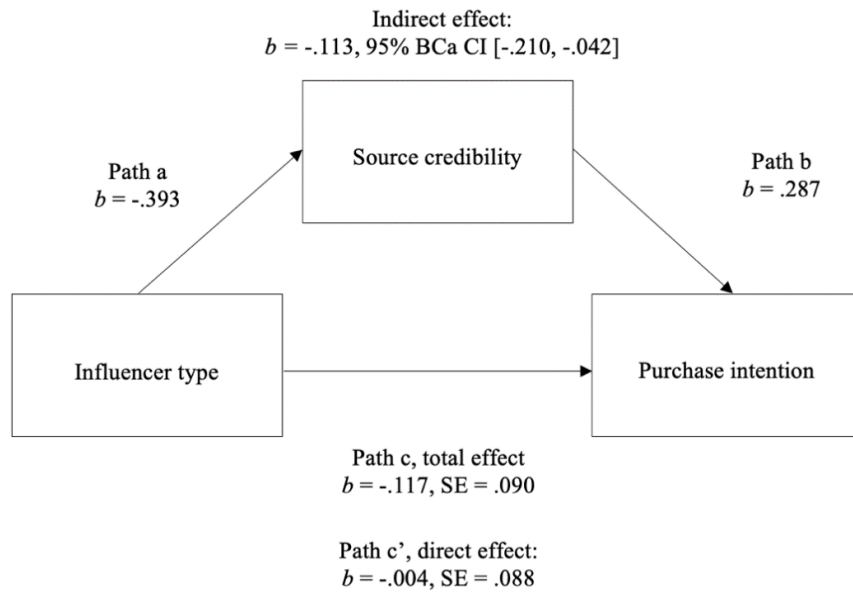


Figure 3. Mediation model for purchase intention with source credibility as a mediator

Table 10

Mediation effect of source credibility on purchase intention per influencer type

Influencer type	Effect of IV on mediator (a path)	Unique effect of mediator (b path)	Indirect effect (ab path)	95% CI	
	<i>b</i>	<i>b</i>	<i>b</i>	Lower	Upper
Social media influencer	.48 (.006) *	.28 (<.001) **	.13	.04	.27
Humanised virtual influencer	.19 (.26)	.29 (<.001) ***	.06	-.04	.17
Animated virtual influencer	-.68 (<.001) **	.29 (<.001) ***	-.20	-.38	-.08

Notes. * $p < .01$ ** $p < .001$ *** $p < .0001$

The total effect of the social media influencer on purchase intention (c path) was $b = .214$, SE = .154, $p = .166$. When controlling for the mediator, the direct effect of the social media influencer on purchase intention (c' path) was $b = .079$, SE = .149, $p = .594$. The total effect of the humanised virtual influencer on purchase intention (c path) was $b = -.081$, SE = .151, $p = .592$. When controlling for the mediator, the direct effect of the humanised virtual influencer on purchase intention (c' path) was $b = -.137$, SE = .144, $p = .341$. The total effect of the animated virtual influencer on purchase intention (c path) was $b = -.131$, SE = .155, $p = .401$. When controlling for the mediator, the direct effect of the animated virtual influencer on purchase intention (c' path) was $b = -.07$, SE = .152, $p = .644$.

Brand trust.

A possible mediation of source credibility for the effect of influencer type on brand trust was also investigated (Figure 4). Firstly, the direct effect of the independent variable influencer type on the dependent variable brand trust, ignoring the mediator (source credibility) indicated that influencer type is not a significant predictor of brand trust ($b = .110$, $t(261) = 1.331$, $p = .185$). Secondly, results showed that influencer type was a significant predictor of source credibility ($b = -.393$, $t(262) = 3.999$, $p < .001$). Thirdly, source credibility was in turn found to be a significant predictor of brand trust ($b = .290$, $t(261) = 5.734$, $p < .001$). Influencer type was found not to be a significant predictor of brand trust after controlling the mediator (source credibility) ($b = -.004$, $t(262) = -.043$, $p = .966$). Finally, after testing using non-parametric bootstrapping, it was found the indirect effect was statistically significant ($b = -.114$, 95% CI = $[-.208, -.044]$).

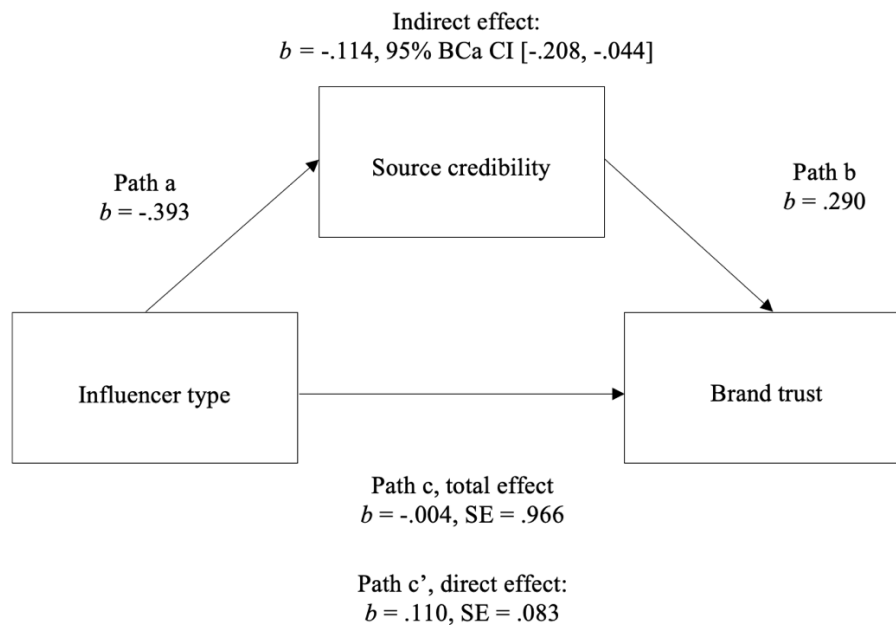


Figure 4. Mediation model for brand trust with source credibility as a mediator

Table 11

Mediation effect of source credibility on brand trust per influencer type

Influencer type	Effect of IV on mediator (<i>a path</i>)	Unique effect of mediator (<i>b path</i>)	Indirect effect (<i>ab path</i>)	95% CI	
	<i>b</i>	<i>b</i>	<i>b</i>	Lower	Upper
Social media influencer	.48 (.005) *	.28 (<.001) ***	.13	.04	.27
Humanised virtual influencer	.19 (.26)	.28 (<.001) ***	.05	-.04	.16
Animated virtual influencer	-.68 (<.001) **	.29 (<.001) ***	-.20	-.37	-.07

Notes. * $p < .01$ ** $p < .001$ *** $p < .0001$

The total effect of the social media influencer on brand trust (c path) was $b = .014$, $SE = .146$, $p = .924$. When controlling for the mediator, the direct effect of the social media influencer on brand trust (c' path) was $b = -.12$, $SE = .14$, $p = .393$. The total effect of the humanised virtual influencer on brand trust (c path) was $b = -.016$, $SE = .143$, $p = .901$. When controlling for the mediator, the direct effect of the humanised virtual influencer on brand trust (c' path) was $b = -.069$, $SE = .135$, $p = .609$. The total effect of the animated virtual influencer on brand trust (c path) was $b = .003$, $SE = .147$, $p = .981$. When controlling for the mediator, the direct effect of the animated virtual influencer on brand trust (c' path) was $b = .202$, $SE = .143$, $p = .157$.

Consumer engagement.

A mediation analysis (Figure 5) was also carried out to find out whether source credibility mediates the effect of influencer type on consumer engagement. The analysis found that the direct effect of the independent variable influencer type on the dependent variable consumer engagement, ignoring the mediator source credibility, indicated that influencer type is not a significant predictor of consumer engagement ($b = .067$, $t(261) = .828$, $p = .409$). Results also showed that influencer type was a significant predictor of source credibility ($b = -.393$, $t(262) = -3.999$, $p < .001$), as well as that source credibility was a significant predictor of consumer engagement ($b = .296$, $t(261) = 5.980$, $p < .001$). However,

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influencer type was not a significant predictor of consumer engagement after controlling for the mediator source credibility ($b = -.049$, $t(262) = -.587$, $p = .558$). The results, after using non-parametric bootstrapping, indicated that the indirect effect was statistically significant ($b = -.116$, $SE = .044$, 95% CI = $[-.214, -.044]$).

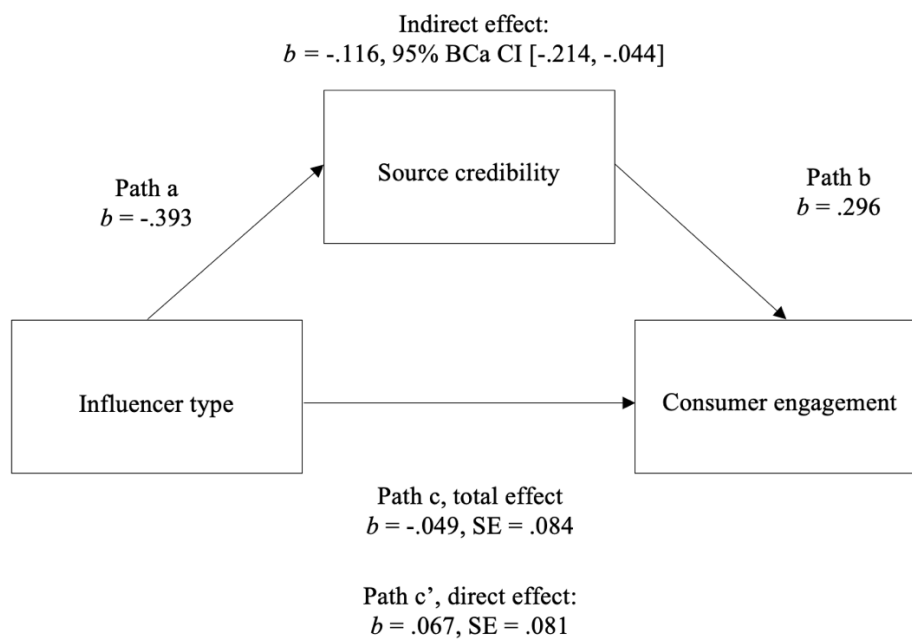


Figure 5. Mediation model for consumer engagement with source credibility as a mediator

Table 12

Mediation effect of source credibility on consumer engagement per influencer type

Influencer type	Effect of IV on mediator (<i>a</i> <i>path</i>)	Unique effect of mediator (<i>b</i> <i>path</i>)	Indirect effect (<i>ab path</i>)	95% CI	
	<i>b</i>	<i>b</i>	<i>b</i>	Lower	Upper
Social media influencer	.48 (.006) *	.29 (<.001) ***	.14	.04	.27
Humanised virtual influencer	.19 (.26)	.29 (<.001) ***	.06	-.04	.16
Animated virtual influencer	-.68 (<.001) **	.30 (<.001) ***	-.20	-.38	-.09

Notes. * $p < .01$ ** $p < .001$ *** $p < .0001$

The total effect of the social media influencer on consumer engagement (*c* path) was $b = .081$, $SE = .143$, $p = .574$. When controlling for the mediator, the direct effect of the social media influencer on consumer engagement (*c'* path) was $b = -.057$, $SE = .137$, $p = .678$. The total effect of the humanised virtual influencer on consumer engagement (*c* path) was $b = -.017$, $SE = .14$, $p = .901$. When controlling for the mediator, the direct effect of the humanised virtual influencer on consumer engagement (*c'* path) was $b = -.072$, $SE = .132$, $p = .587$. The total effect of the animated virtual influencer on consumer engagement (*c* path) was $b = -.064$, $SE = .144$, $p = .657$. When controlling for the mediator, the direct effect of the animated virtual influencer on consumer engagement (*c'* path) was $b = .14$, $SE = .139$, $p = .318$.

Hypotheses overview

Table 13 displays the hypotheses that were tested in the current study and the extent to which they were supported by the findings of the statistical analyses.

Table 13

Overview of results of the hypotheses

	Hypotheses	Result
H1a	Social media influencers have a more positive influence on purchase intention, brand trust, and social presence compared to virtual influencers.	Rejected
H1b	Virtual influencers have a more positive influence on consumer engagement compared to social media influencers.	Rejected
H2	Humanised virtual influencers have a more positive influence on purchase intention, brand trust, consumer engagement, and social presence compared to animated virtual influencers.	Rejected
H3a	A message with no disclosed sponsorship will have a more positive influence on purchase intention, consumer engagement, and brand trust compared to a message with a disclosed sponsorship.	Rejected
H3b	A message with no disclosed sponsorship will have less adverse behavioural intention towards the influencer compared to a message with a disclosed sponsorship.	Rejected
H4a	A disclosed sponsorship will have a more positive influence on purchase intention, brand trust, and consumer engagement for a social media influencer than for a humanised virtual influencer or an animated virtual influencer.	Rejected
H4b	A disclosed sponsorship will have less adverse behavioural intention towards the influencer for a social media influencer than for a humanised virtual influencer or an animated virtual influencer.	Rejected
H5a	The effect of influencer type on purchase intention, brand trust, and consumer engagement, is mediated by their source credibility (their attractiveness, trustworthiness, and expertise).	Supported
H5b	The effect of a sponsorship disclosure (indicated or not) on purchase intention, brand trust, and consumer engagement is mediated by source credibility (attractiveness, trustworthiness, and expertise) of the influencer type.	Rejected

Discussion

The goal of this study was to determine whether and to what extent influencer type and type of sponsorship disclosure affected purchase intention, brand trust, and consumer engagement. Findings of this research showed no direct effects of influencer type and sponsorship disclosure were found on purchase intention, brand trust, and consumer engagement. However, influencer type was found to have an indirect impact on these dependent variables when mediated by source credibility. Interestingly, the direct effects of influencer type that were found, were on an influencer level and not on a brand level.

These findings contribute to the existing literature, as this study adds new information about the effect on source credibility when studied on human and virtual influencers. Moreover, it offers practical recommendations, as it provides the advice to focus on influencers' source credibility level when choosing an influencer for their influencer marketing.

In the following section the main results will be discussed, followed by theoretical, and practical implications, limitations, and possible future research.

Discussion of the results

Findings from this research showed no direct effects of influencer type on purchase intention, brand trust, consumer engagement, and social presence. However, the results did show that influencer type had an indirect effect on purchase intention, brand trust, and consumer engagement when mediated by source credibility. So, hypothesis 5a was revealed to be supported. According to these findings, it can be assumed that influencers (virtual or not) only have an impact on purchase intention, brand trust, and consumer engagement when their credibility is triggered first.

This is consistent with the source credibility model of Ohanian (1991), who found that influencers' perceived characteristics can transfer to their message, which can then influence their followers' brand attitudes and consumer behaviour, and purchase intention (Gunawan & Huarng, 2015). The characteristics of influencers, according to the source credibility model, that influence influencers' followers are the influencers' perceived trustworthiness, expertise, and attractiveness. So, depending on the attractiveness, trustworthiness, and expertise of an influencer, their credibility can subsequently be transferred to the brand they are promoting, and thus increase purchase intention, brand trust, and consumer engagement.

When zooming in on the specific influencer types of this research, both social media influencer and animated virtual influencer type had an indirect effect on purchase intention, brand trust, and consumer engagement when mediated by source credibility. However, the humanised virtual influencers did not have an indirect effect on these dependent variables when mediated by source credibility.

So, since the humanised virtual influencer type did not have an indirect effect on the dependent variables mediated by source credibility, while social media and animated virtual influencer did. This study finds that this provides evidence for the uncanny valley, as users react differently, concerning purchase intention, brand trust, and consumer engagement mediated by source credibility, to the more humanised virtual influencers than to either social media influencers or animated virtual influencers.

The uncanny valley theory argues that when non-human entities become more human-looking, they may reach a point where people's affinity with them decreases (Beer et al., 2015) due to the perception of an uncanny resemblance to humans (Wiese & Weis, 2020). So, their imperfect resemblance to humans can make people uncomfortable, leading to uncertainty and distrust (Nowak et al., 2009), which in turn could reduce source credibility (Zhengyan & MacDorman, 2018). A large meta-analysis confirmed the effect (Diel, Weigelt,

& McDorman, 2022), which means that uncanny valley hinders the effect of these humanised virtual influencers.

So, although humanised virtual influencers' appearance is more similar to humans and found to be more credible and attractive than animated virtual influencers in this study, it does not seem to be enough to neutralise the effects of uncanny valley when mediated by source credibility. Thus, it appears that humanised virtual influencers pay a price for their human appearance.

The results of this study regarding source credibility as a mediator contribute to the knowledge of source credibility as source credibility mostly has been researched concerning celebrity endorsement and human influencers (Schouten et al., 2020). So, this research adds to the development of knowledge concerning virtual influencers and source credibility. Moreover, it adds on previous studies that argue that source credibility dimensions can increase the effectiveness of advertising (O'Keefe, 1990; Deshpandé & Stayman, 1994). The current study also provides some useful recommendations for marketers and brands that are interested in influencer marketing. This study found source credibility is useful in predicting purchase intention, brand trust, and consumer engagement. Thus, influencers (human and virtual) need to present themselves as someone who can be perceived as attractive and trustworthy, as well as someone with expertise. Since these characteristics affect their credibility. Furthermore, influencers' source credibility is valuable for marketers, as it seems to play an important role when it comes to influencer marketing on Instagram. Still, these findings do beg the question if not the type of influencer, but the characteristics of an influencer are crucial in influencing how people react to Instagram posts.

As mentioned above, the findings of this research showed no direct effects of influencer type on purchase intention, brand trust, consumer engagement, and social

presence. Thus, hypotheses 1a, 1b and 2. These results are in contrast with research that found highly anthropomorphised characters would be perceived as more credible, likeable, and engaging (Wexelblat, 1997) due to their resemblance to humans (Seymour et al., 2020). Moreover, it contradicts research that found virtual influencers drive more engagement than social media influencers (Ong, 2020).

A possible explanation for these results could be that the difference between social media influencers and virtual influencers, as well as social media influencers, humanised virtual influencers, and animated virtual influencers are not big enough. However, since they did have an indirect effect, it seems that if source credibility is triggered first, they do affect the dependent variables. Therefore, highlighting the importance of the perceived trustworthiness, attractiveness, and expertise of influencers, whether they are virtual or human.

Another explanation could be that consumers are aware of persuasion attempts from influencers on Instagram. So, it could be that the difference between social media and virtual (humanised or animated) is less tangible, as consumers' past knowledge about influencers and their possible persuasion attempts is activated. So, to them, it does not matter whether influencers are human or virtual, to the consumer they are both perceived as influencers.

Another reason could be that the participants in this study were only exposed one time to a screenshot of a fictitious influencer's Instagram post. Participants were not able to scroll through this influencer's profile, read comments, or search for more information. Therefore, they were unable to further explore the influencer or the brand in the post. Moreover, since the influencers in this study were fictional, participants did not have a prior bond with the influencer. So, since the participants did not know the influencer, it would have been difficult to make judgements about the brand, but also about the influencer.

Quite a lot of research has been conducted about influencer type, as well as comparisons between different types of influencers (Schouten et al., 2020; Kay et al., 2020). However, academic research that compares the use of social media influencers and virtual influencers is limited. A reason for this could be that virtual influencers are a new phenomenon that has only recently emerged. So, to the author's best knowledge, there are no previous published studies that compare virtual influencers (humanised and animated) with social media influencers on purchase intention, brand trust, consumer engagement, and social presence. Therefore, the results of this study still add knowledge to the field of influencer marketing and virtual influencers. The practical implications of this research are for marketers. The results of this study recommend that whether to use a virtual influencer (humanised or animated) or a social media influencer in a brand's communication strategy should not be the focus, as the type of influencer does not seem to matter on a brand level. However, since virtual influencers are a new phenomenon and literature is limited, there are many more aspects of virtual influencers to explore in future research.

The analysis of the results of sponsorship disclosure found that disclosed or undisclosed sponsorship in an Instagram post did not seem to have an effect. The study assumed an undisclosed sponsorship would have more positive influence on purchase intention, brand trust, and consumer engagement. Moreover, it assumed undisclosed sponsorship was predicted to induce less adverse behavioural intention towards influencers. Nevertheless, the results did not support this assumption, therefore rejecting hypotheses 3a and 3b.

These findings are in contrast with research that discovered disclosed sponsorship negatively affects people's purchase intention, consumer engagement, and brand perceptions (Boerman & Van Reijmersdal, 2016). A possible explanation might be that as influencer

marketing has grown over the years, consumers have become increasingly aware of the different types of sponsorships on social media, including Instagram. Moreover, as regulations were enforced to state when sponsorships are present (Stichting Reclame Code, 2014), sponsorship recognition could have been rapidly increased. Thus, to adapt to new sponsorship types, consumers could have adjusted their persuasion knowledge. This is consistent with the persuasion knowledge model of Friestad and Wright (1994), who found that consumers' attitude towards advertising can change over time when they gain knowledge about persuasion intents and tactics. So, it could be assumed that consumers have adapted their persuasion knowledge and are therefore aware that both sponsorship disclosure types are trying to persuade them. Leading to the result that sponsorship disclosure types in Instagram posts are not effective for purchase intention, brand trust, and consumer engagement and do not affect adverse behavioural intention towards the influencers.

Moreover, one could say that participants did not even notice the sponsorship disclosures in the Instagram posts. To investigate if this is the case, future research with an eye-tracking study is needed to investigate if participants notice and pay attention to sponsorship disclosures in Instagram posts, disclosed or not.

In addition to there being no direct effects of sponsorship disclosure on the dependent variables, no indirect effects were found. So, source credibility did not mediate the relationship between sponsorship disclosure and the dependent variables purchase intention, brand trust, and consumer engagement in this study. Meaning, hypothesis 5b is not supported. It was expected that a disclosure, indicated or not, would lead to more purchase intention, brand trust, and consumer engagement when the influencer type was perceived as credible. A possible explanation for these results might be that consumers are becoming more aware of persuasion methods and can therefore recognize sponsored content on Instagram. So,

regardless of source credibility, due to consumers' adjusted persuasion knowledge, they can protect themselves from persuasion (Boerman, Willemsen, & Van Der Aa, 2017).

Contrary to what is already discovered about sponsorship disclosure, the results of this study found that the way an Instagram post is sponsored (disclosed or undisclosed) does not matter. So, although no significant effects were found, this research still contributes to the literature about sponsorship disclosure. Moreover, as this study also explored how sponsorship disclosure on Instagram posts affects people's behavioural intention towards influencers, the results also contribute to the literature about how sponsorship disclosure affects influencers. The results of this study lead to the assumption that whether an Instagram post is disclosed as sponsored or not, people activate their persuasion knowledge as a defence mechanism. Therefore, in the future marketers and influencers may need to examine possible strategies to ensure their Instagram posts are not perceived as persuasion attempts and try not to evoke the feeling of sponsorship.

Although it was expected that there would be an interaction effect between influencer type and sponsorship disclosure, this was not the case. Resulting in the rejection of hypotheses 4a and 4b. This study expected that disclosed sponsorships have more positive influence on purchase intention, brand trust, and consumer engagement for a social media influencer than for a humanised virtual influencer or an animated virtual influencer. Moreover, it was expected that disclosed sponsorships evoke less adverse behavioural intention towards the influencer for a social media influencer than for a humanised virtual influencer or an animated virtual influencer.

However, it seems that there is no difference in the use of sponsorship disclosure for social media influencers or virtual influencers (humanised or animated) on purchase intention, brand trust, consumer engagement, and adverse behavioural intention. So, the use

of disclosed sponsorship does not appear to aid social media influencers to have more positive influence on purchase intention, brand trust, and consumer engagement, or decrease adverse behavioural intention towards influencers compared to virtual influencers (humanised or animated).

An explanation for there being no interaction effect could be that the chosen brand and influencer of the fictitious Instagram post might not have been perceived as credible by the participants. This could have been due to the lack of congruence between the influencers and the sponsored product, as recent research suggests influencer-brand congruence is critical for the acceptance of disclosed sponsored content (Schouten et al., 2020). So, future research is needed to investigate if there is an interaction effect when there is influencer-brand congruence, for instance with products from certain categories such as fashion (Zak & Hasprova, 2020).

Additional findings, other than this study initially set out to investigate, showed that influencer type had direct effects on other variables. It was found that influencer type influenced adverse behavioural intention towards the influencer. There was more intention of adverse behavioural towards animated virtual influencers than towards social media influencers.

Additionally, the results showed that influencer type influenced source credibility. Social media influencers and humanised virtual influencers were found more credible than animated virtual influencers. Moreover, influencer type affected attractiveness. Social media influencers and humanised virtual influencers were found to be more attractive than animated virtual influencers. Furthermore, influencer type influenced trustworthiness. Social media influencers were perceived as more trustworthy than animated virtual influencers.

An explanation for these findings could be that social media influencers are found to be more credible and trustworthy because they are humans (Schouten et al., 2020) and most like the participants of this study, but also because this is the influencer type people are used to seeing on Instagram every day.

The results of influencer type showed that it had direct effects, but not on variables about what people think about the brand. The additional findings show that influencer type has direct effects on the influencers themselves, how they are perceived, and how people behave due to this perception. This begs the question of why this is the case. The influencer type influences how people behave and think about the influencer, but this does not translate to what people think about a brand, nor does it influence people's behaviour towards the brand.

These findings add evidence to the thought that influencers' characteristics perhaps are more important than the influencer type for creating successful influencer marketing campaigns.

However, as source credibility mediates the effect of influencer type regarding consumers' behaviour and thoughts about the brand, it could also mean that there will be an effect of influencer type on the brand level if this research used non-fictitious influencers. Therefore, it is recommended to further research what characteristics of influencers (human and virtual) make them effective for influencer marketing, as well as conduct research using non-fictitious influencers.

Limitations & Future research

This study has possible limitations that should be considered in future research.

Firstly, due to a global pandemic, this study mainly used purposive sampling to select participants. This might have biased the results and impacted the external validity. So, to

make more reliable assumptions, future studies should lean towards using a probability sampling method.

Moreover, the chosen product used as the sponsored product in the Instagram post was coffee. There is a possibility that the participants did not like coffee in general or the type of coffee product presented in the Instagram post, which might have biased the results. Moreover, perhaps a different product category, such as fashion or cosmetics, might have suited the study better. So, the examination of different products in future studies could be interesting. Furthermore, it could be interesting to see the difference between products that fulfil different types of consumer goals, such as hedonistic, utilitarian, or self-expression. Future research could also focus on other brands, such as familiar and unfamiliar brands, to study their effect on the dependent variables.

Additionally, this study did not reflect a realistic Instagram situation as participants were not able to further scroll through profiles and search for more information about the influencers and brand. Participants only had a single image of an Instagram post and were only exposed once to the Instagram post, which perhaps did not give them enough information. So, to reflect a more realistic situation, it would be interesting in future research to provide participants with the option to look around on the Instagram account of the influencer and the brand.

Moreover, in this study participants were only confronted with a one-time exposure of a screenshot of an influencer and were not able to have a look at the Instagram post after that. For future research, it would be interesting to provide participants with the option to look more often at the manipulation of the Instagram post. Do people process sponsorship disclosure differently when they are exposed longer or more often, and will people's opinion about the influencer change when seeing an Instagram post more often, or longer? To determine this, future research could use eye-tracking in their study.

Another limitation of this study might be the fact that in the online questionnaire, questions regarding social presence were asked about the Instagram post instead of the influencer in the Instagram post. This could have possibly influenced the degree of social presence of the influencer types in this study. So, this should be avoided in future studies. Moreover, since Instagram photo posts were used in this study, this could also have influenced the degree of social presence of the influencers. Future research should compare Instagram photo posts with Instagram video posts as the type of medium could affect the degree of social presence of virtual influencers.

Furthermore, because non-fictional influencers were used in this study, the influencers did not have a strong following and did not have a strong para-social relationship with their followers. Additionally, participants were exposed for the first time to these influencers. So, to determine the influence of non-fictional influencers, further research could be conducted where they use existing virtual and social media influencers. Moreover, it would also be interesting to combine this study with the influencers' followers, as they are also often the target audience of advertising.

Another limitation of this study might be that virtual influencers are owned by companies, so this could influence how participants perceive their social presence. Future studies should investigate if there is a difference between virtual influencers who are controlled by AI or by a team of humans on the degree of social presence.

In addition, the sample of this study consisted mainly of people between the ages of 18 and 34. Therefore, for now, the findings of this study can only be used by brands and influencers in their influencer marketing when their target audience is between the ages of 18 and 34. For future research, it would be interesting to ask people from the Alpha generation to participate, as this generation is growing up in the digital age and will interact even more naturally with technologies such as virtual influencers. Moreover, it would also be

interesting to see if the results of this study would change when it would select participants from countries who are more used to virtual agents in their day-to-day life, such as China and Korea (Teh, 2021).

Finally, future studies should continue to study virtual influencers since literature is scarce.

Conclusion

This study introduced virtual influencers as a relatively new phenomenon. This influencer type appears to be more frequently used in influencer marketing. However, there is little empirical research about virtual influencers and their impact on consumers, showing a considerable gap. Therefore, the goal of this study was to contribute to the field of influencer marketing by gaining new insights into the effect of virtual influencers and sponsorship disclosure on purchase intention, brand trust, and consumer engagement.

The study revealed that there is no distinction between social media influencers and virtual influencers (humanised or animated) for purchase intention, brand trust, consumer engagement, and social presence. Moreover, no distinction was found between disclosed sponsorship and undisclosed sponsorship for purchase intention, brand trust, consumer engagement, and adverse behavioural intention towards the influencer. Additionally, there was no interaction effect found between influencer type and sponsorship disclosure. So, it cannot be stated that for a disclosed or undisclosed sponsorship a certain influencer type is more effective. Although this study could not prove which influencer type is more effective to influence consumers' purchase intention, brand trust, and engagement, this study did find that the effect of influencer type on purchase intention, brand trust, and engagement was mediated by source credibility.

This study adds knowledge to the field of influencer marketing and sponsorship disclosure and supports existing knowledge about source credibility. Moreover, it adds new insights into the field of virtual influencers, which has little academic research. Along with its contribution to sponsorship disclosure and influencer marketing literature, this study also contributes a better practical application of influencers (virtual or social) in a brand's marketing activities. Moreover, it provides proof of the importance of future research on minimising perceptions of persuasion.

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Finally, to answer the research question, it can be concluded that both the influencer type and sponsorship disclosure do not influence purchase intention, brand trust, and consumer engagement. Only when influencer type is mediated by source credibility does it have an effect on purchase intention, brand trust, and consumer engagement.

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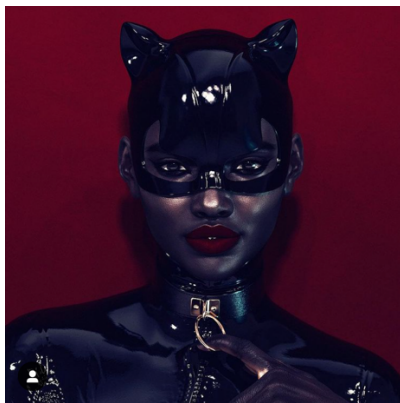
Appendix 1

Examples of Influencers

Examples of humanised virtual influencers.



Virtual influencer Lil' Miquela (Miquela, 2020).



Virtual influencer Shudu (Shudu, 2018).



Virtual influencer Imma (Imma, 2021).

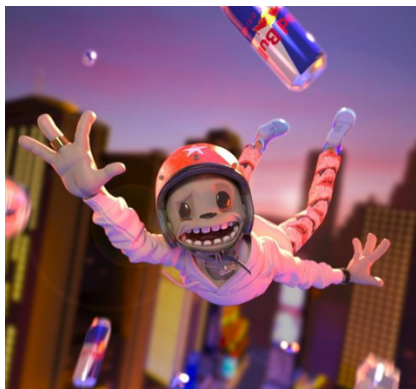


Virtual influencer Blawko (Blawko, 2019).

Examples of animated virtual influencers

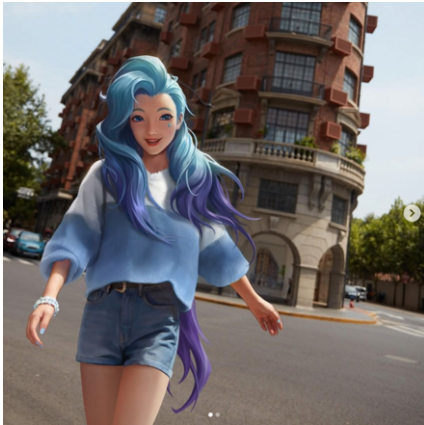


Virtual influencer Noonnoori (Noonnoori, 2020).



Virtual influencer Janky (Janky, 2020).

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Virtual influencer Seraphine (Seraphine, 2020).



Virtual influencer Guggimon (Guggimon, 2020).

Examples of (human) social media influencers.



Will Taylor (Will Taylor, 2021).

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Noa Maxime Pardoel (Noa Maxime Pardoel, 2021).



Chelsea (Chelsea H, 2021).



Makayla Anisa (makaylaanisa, 2020).

Appendix 2
Preliminary Test Manipulations Stimuli

Social media influencers:

1.



2.



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Humanised virtual influencers:

1.



2.



THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE

Animated virtual influencers:

1.



2.



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Disclosed and undisclosed sponsorship Instagram posts:

1.



2.



3.



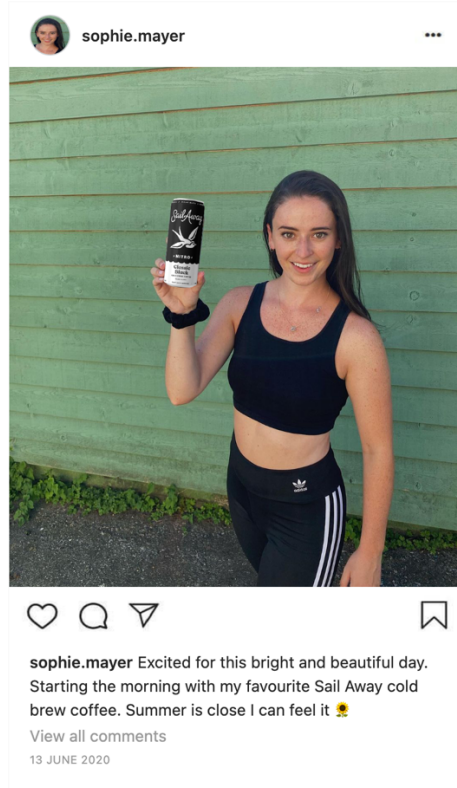
4.



Appendix 3

Main study Manipulated Stimuli

Social media influencer with undisclosed sponsorship:



Social media influencer with disclosed sponsorship

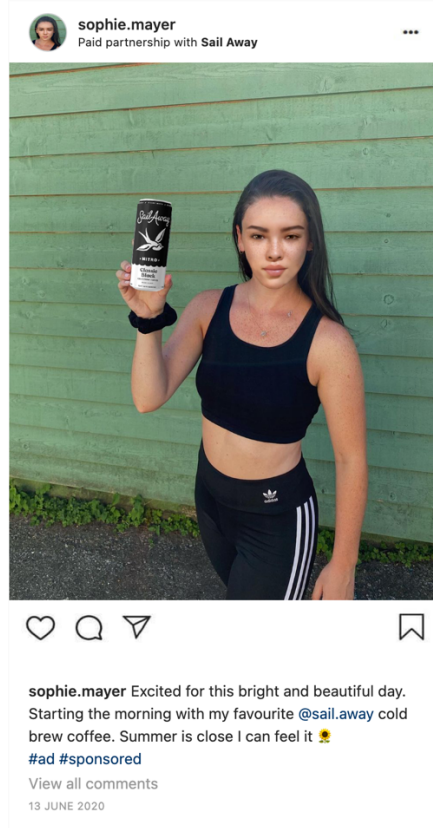


THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE

Humanised virtual influencer with undisclosed sponsorship:



Humanised virtual influencer with disclosed sponsorship:



THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE

Animated virtual influencer with undisclosed sponsorship:



Animated virtual influencer with disclosed sponsorship:



Appendix 4**Variables' Measurement Items for Main Study**

Table A1

Overview of variable measurement items

Variable	Items
Purchase intention	<ul style="list-style-type: none"> - I will consider purchasing Sail Away the next time I need a coffee. - It is likely that I will buy Sail Away's coffee. - I have no intention to buy Sail Away's coffee. - I would consider buying Sail Away's coffee.
Brand trust	<ul style="list-style-type: none"> - I would trust Sail Away. - I would rely on Sail Away. - I would perceive Sail Away as honest. - I would perceive Sail Away as safe. - Sail Away would give me everything that I expect out of the product. - Sail Away would never disappoint me.
Consumer engagement: Cognitive	<ul style="list-style-type: none"> - Interacting with this influencer on Instagram would make me think about this influencer. - I would think about this influencer a lot when I am interacting with them on Instagram. - Interacting with this influencer on Instagram would stimulate my interest to learn more about them.

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Consumer engagement: Affective

- I would feel very positive when I interact with this influencer on Instagram.
- Interacting with this influencer on Instagram would make me happy.
- I would feel good when I interact with this influencer on Instagram.
- I would feel proud to follow this influencer on Instagram.

Consumer engagement: Behavioural

- This post spurs me to interact very actively with the influencer.
- This post strongly encourages me to make comments mentioning other people.
- This post strongly encourages me to make comments with emojis.
- This post directly triggers the impulse to “like” this post.
- This post directly triggers the urge to “share” this post.
- This post directly triggers the urge to visit the website of the brand.
- This post makes the brand easy to remember.
- This post directly triggers the urge to seek further product information.
- I intend to buy the product presented by the influencer.

Source credibility: Attractiveness

- Sexy/ not sexy
- Beautiful/ ugly
- Elegant/ plain
- Attractive/ unattractive

Source credibility: Trustworthiness

- Honest/ dishonest

Source credibility: Expertise	<ul style="list-style-type: none">- Reliable/ unreliable- Sincere/ insincere- Trustworthy/ untrustworthy- Experienced/ not experienced- Knowledgeable/ unknowledgeable- Qualified/ unqualified- Expert/ not an expert
Adverse behavioural intention towards the influencer: Swiping further	<ul style="list-style-type: none">- If I would see this post on my Instagram feed, I would swipe further- If I would see this influencer on my Instagram feed, I would swipe further.
Adverse behavioural intention towards the influencer: Writing a negative comment	<ul style="list-style-type: none">- If I would see this post on my Instagram feed, I would write a negative comment- If I would see this influencer on my Instagram feed, I would write a negative comment.
Adverse behavioural intention towards the influencer: Unfollowing the specific influencer.	<ul style="list-style-type: none">- If I would see this post on my Instagram feed, I would unfollow the influencer who has created it
Social presence	<ul style="list-style-type: none">- There is a sense of human warmth in this Instagram post- There is a sense of sociability in this Instagram post.- There is a sense of human sensitivity in this Instagram post.- There is a sense of human contact in this Instagram post.- There is a sense of personness in this Instagram post.

Appendix 5
Main questionnaire



Dear respondent,

Thank you for your interest in participating in my research study on how people perceive Instagram posts. As part of my Master thesis, I am conducting the following questionnaire and thanks to your contribution and time spent, I am aiming to provide practical as well as academic insights on Instagram. At the beginning of the questionnaire, you will see an Instagram post and you will be asked to answer questions based on the post you saw. After that, you will be asked a few demographic questions.

There are no right or wrong answers, so I would like to encourage you to give honest answers. Please be informed that your participation in the research is completely voluntary and you are able to stop at any time without giving any reasons. Your data is treated confidentially and anonymously.

It is advised to conduct the survey on a laptop or a computer. The questionnaire will take approximately **6 to 10 minutes** to complete.

If you have any questions regarding this research, feel free to contact me (w.e.m.wolff@student.utwente.nl).

Kind regards,

Wietske Wolff

MSc Communication Science

University of Twente

☐

I have read, understood the information provided above, and I agree to participate in this study.

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Are you between 18 and 34 years old?

- ☐ Yes
- ☐ No

Do you have an Instagram account?

- ☐ Yes
- ☐ No

How often do you use Instagram?

- ☐ Multiple times a day
- ☐ Once per day
- ☐ Multiple times per week
- ☐ Once per week
- ☐ Once per month
- ☐ Less than once a month
- ☐ Never

Influencers are people on Social Media (Twitter, Facebook, Instagram etc.) with a high number of followers. They often promote brands or products on Social Media aimed at reaching their followers, for which they might get paid by companies.

(You can still continue with this questionnaire if you do not follow influencers)

Do you follow influencers on Instagram?

- ☐ Yes
- ☐ No



On the next page, you will be presented with an Instagram post of an influencer.

Imagine you are looking at this Instagram post on your Instagram feed on your smartphone.

Please take your time to observe the details in the picture as well as the caption presented.

The picture below shows an Instagram post of a virtual influencer.

"Virtual influencers are a new type of online influencers. They are fictional computer-generated influencers, also known as CGI-influencers, who have human personalities. They can have realistic characteristics and features of humans, but they can also have more animated characteristics. However, as they are computer programmed, the owning company of the virtual influencer has total control over their actions."

Please take your time to observe the details in the picture as well as the caption presented.

or

The picture below shows an Instagram post of an influencer.

Please take your time to observe the details in the picture as well as the caption presented.

THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE



To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The influencer shown in the Instagram post is famous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am familiar with the influencer shown in the Instagram post	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have seen the influencer shown in the Instagram post before on social media.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The brand shown in the Instagram post is familiar to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have heard of the brand shown in the Instagram post	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have seen advertisements for the brand shown in the Instagram post	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE



To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I will consider purchasing Sail Away the next time I need a coffee.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is likely that I will buy Sail Away's coffee.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have no intention to buy Sail Away's coffee.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would consider buying Sail Away's coffee.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE

To what extent do you agree with the following statements?

In light of this influencer's Instagram post...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I would trust Sail Away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would rely on Sail Away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would perceive Sail Away as honest.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would perceive Sail Away as safe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree with the following statements?

In light of this influencer's Instagram post...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Sail Away would give me everything that I expect out of the product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sail Away would never disappoint me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE

To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Interacting with this influencer on Instagram would make me think about this influencer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would think about this influencer a lot when I am interacting with them on Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with this influencer on Instagram would stimulate my interest to learn more about them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE



To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I would feel very positive when I interact with this influencer on Instagram.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with this influencer on Instagram would make me happy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel good when I interact with this influencer on Instagram.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel proud to follow this influencer on Instagram.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE

To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
This post spurs me to interact very actively with the influencer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This post strongly encourages me to make comments mentioning other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This post strongly encourages me to make comments with emojis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This post directly triggers the impulse to "like" this post.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This post directly triggers the urge to "share" this post.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This post directly triggers the urge to visit the website of the brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This post makes the brand easy to remember.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This post directly triggers the urge to seek further product information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to buy the product presented by the influencer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
If I would see this post on my Instagram feed, I would swipe further.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I would see this influencer on my Instagram feed, I would swipe further.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I would see this post on my Instagram feed, I would write a negative comment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I would see this influencer on my Instagram feed, I would write a negative comment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I would see this post on my Instagram feed, I would unfollow the influencer who has created it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



I find the influencer in this Instagram post...

	1	2	3	4	5	6	7	
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not sexy
Beautiful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ugly
Elegant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Plain
Attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unattractive

I find the influencer in this Instagram post...

	1	2	3	4	5	6	7	
Honest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dishonest
Reliable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unreliable
Sincere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Insincere
Trustworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Untrustworthy

I find the influencer in this Instagram post...

	1	2	3	4	5	6	7	
Experienced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not experienced
Knowledgeable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unknowledgeable
Qualified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unqualified
Expert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not an expert



To what extent do you agree with the following statements?

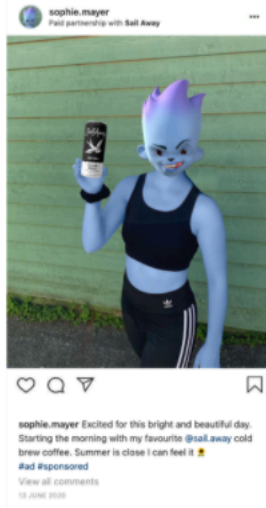
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
There is a sense of human warmth in this Instagram post.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a sense of sociability in this Instagram post.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a sense of human sensitivity in this Instagram post.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a sense of human contact in this Instagram post.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a sense of personness in this Instagram post.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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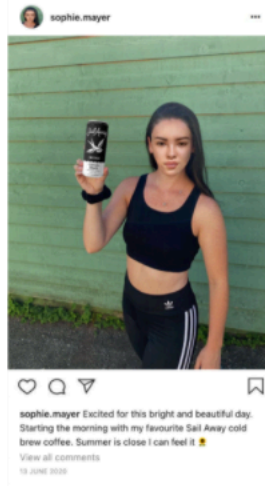


Which of these Instagram posts did you see during this questionnaire?

☐ Post 1.



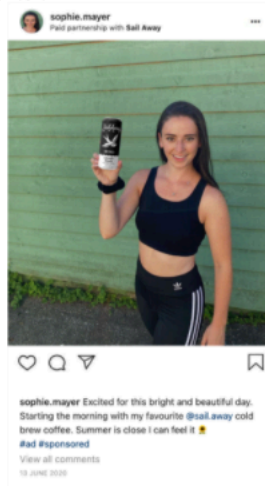
☐ Post 4.



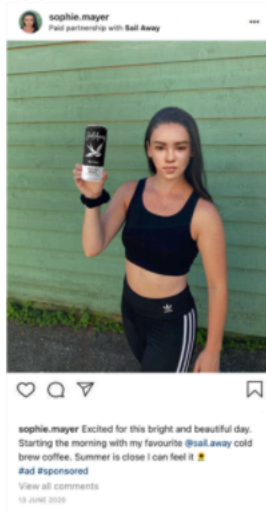
☐ Post 2.



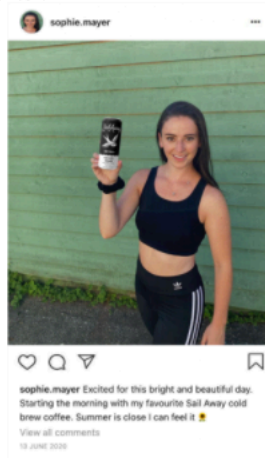
☐ Post 5.



☐ Post 3.



☐ Post 6.



THE EFFECT OF VIRTUAL INFLUENCERS AND SPONSORSHIP DISCLOSURE



How old are you? (e.g. 25)

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Non-binary / third gender
- ☐ Prefer not to say

What is your nationality?

What is the highest level of school you have completed or the highest degree you have received?

- ☐ Less than high school degree
- ☐ High school graduate
- ☐ Bachelor's degree in secondary vocational education (MBO)
- ☐ Bachelor's degree in college (HBO)
- ☐ Bachelor's degree in university (WO)
- ☐ Master's degree (WO)
- ☐ Doctoral degree (PhD)
- ☐ Professional doctoral degree (JD, MD)



Thank you for participating in this questionnaire.

The purpose of the online experiment was to investigate how different sponsorship disclosure types and different influencer types of Instagram posts impact purchase intention, brand trust and consumer engagement. It was necessary to withhold information about the purpose of the online experiment prior to your participation in order to obtain unbiased responses.

If you have any additional questions or if you wish to withdraw your initial consent for participating in this questionnaire, please send an e- mail to the researcher:
w.e.m.wolff@student.utwente.nl

The Instagram posts that were shown within this research were fictitious and were only created for the purpose of this research study.

Thank you again for your participation in this questionnaire

Please click on the arrow to hand in this questionnaire.