Robot or Human? – The Marketing Phenomenon of Virtual Influencers

- A Case Study About Virtual Influencers' Parasocial Interaction on Instagram

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Victoria Molin
Sofia Nordgren
Supervisor: Sabine Gebert Persson

ABSTRACT

Title: Robot or Human? The Marketing Phenomenon of Virtual Influencers: A Case Study About Virtual Influencers' Parasocial Interaction on Instagram.

Purpose: As it is already established that human influencers can create parasocial interaction with their followers, the purpose of this study is to explore parasocial interaction with virtual influencers through their perceived source credibility.

Research Questions:
How are consumers responding to interaction with virtual influencers on Instagram?
What factors in source credibility facilitate parasocial interaction between the actors?

Method: This case study has conducted semi-structured interviews with Swedish consumers along with information collected on two virtual fashion influencers: LilMiquela and Noonoouri. Before the interviews, a pretest in interacting with the virtual influencers on Instagram was conducted. Afterwards, the transcripts have been analyzed in accordance to the presented operationalization and led to subcategories found to be relevant for the facilitation of PSI.

Conclusion: It was shown that consumers responded better to interaction with humanlike virtual influencers regarding their appearance and lifelike activities. Although, consumers also perceive their appearance and behavior as unpleasant and unrealistic when being too close to reality. Their perceived humanness affected the level of attractiveness, similarity and trustworthiness. As such, these are the factors that affect the degree of source credibility and thus facilitate PSI with them. Virtual influencers stand in front of a problem with both authenticity and transparency, as they are created and owned by companies. This has implications for their overall attractiveness, as authenticity is shown to be important for consumers on Instagram. However, lack of authenticity and transparency mostly implicates the trustworthiness of them, as the communicator is unknown. Virtual influencers are perceived to have a superior ability of being available online and personal in interaction. Therefore, it is shown to have a positive effect on the facilitation of PSI as it increases their attractiveness. However, it also indicates that they are controlled by a company which has a negative effect as it decreases the trustworthiness of them. To conclude, consumers' virtual robot acceptance is proposed to be a precursor for developing PSI with virtual influencers in conjunction with the three factors in source credibility: trustworthiness, attractiveness and similarity.

Keywords: *Parasocial Interaction, Influencers, Influencer Marketing, Virtual Robots, Robot Acceptance, Source Credibility*

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1. Introduction

Along with the rise of social media, the latest introduction of virtual influencers has been acknowledged. These are online personalities acting on Instagram and they have millions of followers (Mathur, 2019). The virtual influencer is a fictive computer-generated image, that is built on artificial intelligence (AI) and inspire followers on Instagram with content on e.g., fashion and experiences (MediaKix, 2019). Just as humans, virtual influencers have different personas where they have social and professional lives, and express thoughts and emotions (Maughan, 2018). Although, unlike real influencers, they are created by companies (Nolan, 2018). In a recent study of Fullscreen, there is shown to be a lack of transparency on how much of the virtual influencer that is AI driven, or if it is manually driven by a human (Chowdhary, 2019). In addition, the same study shows that only 15% of followers of virtual influencer find them credible and 23% perceive their content as authentic (Ibid). This reveals some clear issues regarding their credibility as virtual influencers. In spite of this, there are several fashion companies already incorporating these new online personalities in marketing activities, e.g., Gucci, Prada and Balmain (Yap, 2018). As an example, @LilMiquela is a virtual influencer with over 1.5mn followers on Instagram that did a take-over for Prada's account during one of their fashion shows (Allwood, 2018). Furthermore, a study from Beauty and Monitor argues that there is an increased popularity of using this new promotion strategy and predicts a further development and expansion of it in the near future (Barnett, 2019).

The virtual influencer is an extension of human influencers, as this is the original influential personality on Instagram. This personality goes beyond traditional celebrities, as these influencers are "everyday" individuals who have achieved popularity through their social media personalities (Garcia, 2017). As such, they are of marketing value for brands as they produce authentic social media content (Lou & Yuan, 2019). Influencer marketing refers to paid or sponsored partnerships between brands and influencers, where the vast majority of them are females (Hennessy, 2018). The goal for firms is to collaborate with these trusted personalities who are seen to have the ability to influence their consumers (Abidin 2016; Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). The main strengths with human influencers is grounded in their tendency to be believable, accessible and intimate when sharing personal and professional aspects of their lives, which makes it easier for consumers to relate and identify themselves with these personalities (Abidin 2016; Chung & Cho, 2017; Djafarova & Rushworth, 2017; Kim & Song, 2016). Moreover, followers are argued to trust influencers almost as much as they trust their friends and family (Hung, Chen & Tse, 2011) and this source credibility of the influencer is seen as one of the main pillars in influencer marketing (Colliander & Dahlén, 2011; De Veirman, Cauberghe, & Hudders, 2017; Lou & Yuan, 2019; Lu, Chang &

Chang, 2014). Source credibility is depending on factors such as trustworthiness, attractiveness, similarity and expertness (Munnukka, Uusitalo & Toivonen, 2016) and have been found to positively affect parasocial interaction (PSI) between followers and influencers (Chung & Cho, 2017; Yuan et al, 2016). PSI refers to a made-up relation consumers' have with media personas (Horton & Wohl, 1956), and today there is an extension of PSI to social media (Labrecque, 2014). Chung and Cho (2017) state that PSI with human influencers are further facilitated through the use of social media, due to it being a highly reciprocal platform where the sharing of personal feelings to others is amplified.

1.1 Problem Discussion

The use of AI in social media is suggested to lead to increased capability of creating suitable content that users want to interact with (Kose & Sert, 2017). As such, virtual influencers could become superior human influencers in storing, analyzing and reacting to consumer data. In addition, they can be programmed to convey brands in a failsafe way, illustrating its benefit for marketing managers (MediaKix, 2019). However, there is a gap in the academic research on consumer responses to this influencer and whether this extension of influencer marketing is credible in the sense that follower can develop PSI with fictive influencers.

Due to the fact that authenticity is key with human influencers (Lou & Yuan, 2019), the virtual influencers' authenticity is threatened because of their non-existence. The fact that they are not humans could compromise the interaction with them, as consumers' have been found to be doubtful to interaction with robots (Wirtz et al., 2018). Previous research has established that robot acceptance to a large extent is dependent on perceived humanness, social presence and social interactivity of the robot (Ibid). Within perceived humanness, the uncanny valley theory posits another problem. Mori (1970) found that if an artificial robot is similar to a human, the more it is trusted, but if it is too resembling a human, the receiver will perceive this as unnatural and discourage the interest of interacting. Moreover, research on virtual avatars shows that consumers' perception on trustworthiness is decreased compared to the social interaction with humans (Riedl et al., 2014). As trust is an important pillar in influencer marketing, this reveals some issues for marketers acknowledging this new promotion activity. However, the research of Riedl et al. (2014) was conducted before the introduction of virtual influencers, and it mainly discussed static avatars on the Internet. Therefore, it becomes important to further study virtual influencers as they act upon a dynamic platform like Instagram, where the enabling of a more dialogical interaction and visual expressions makes the virtual avatars more humanlike. Nevertheless, PSI is still questioned to be facilitated as Labrecque (2014) indicates that PSI is less fostered if the consumer is aware of the fact it is a robot interacting on social media and

not a human. However, his study only included research on consumer responses to interaction with chatbots, as studies on virtual influencers have not yet been conducted. Although, based on the previous studies on the subject of robots and interaction, there appears to be challenges for virtual influencers to develop PSI with their followers and be of marketing value for brands. One way could be through possession of source credibility, which as mentioned is found to be related to PSI, and crucial in influencer marketing. However, it is uncertain how virtual influencers could possess source credibility and through this facilitate PSI as there are no studies on this topic. In order to benefit the research gap on this phenomenon, this paper investigates interaction with virtual influencers on Instagram through interviews with Swedish consumers. The chosen virtual influencers are from the fashion industry, as this is the most common industry in virtual influencer marketing.

1.2 Purpose

As it is already established that human influencers can create parasocial interaction with their followers, the purpose of this study is to explore parasocial interaction with virtual influencers through their perceived source credibility.

1.3 Research Questions

To fulfill the purpose, two questions are developed:

How are consumers responding to interaction with virtual influencers on Instagram?
What factors in source credibility facilitate parasocial interaction between the actors?

2. Analytical Framework

In order to explore PSI with virtual influencers on Instagram, certain theoretical concepts need to be acknowledged. By beginning to review theory on PSI and its ties to influencers, its importance in influencer marketing is sought to be explained. Furthermore, it is hard to imagine PSI with virtual influencers without an understanding of consumers' criteria onto interacting with them in the first place. Here theory on robot acceptance serve as an aid in understanding what virtual influencers should fulfill in order to be accepted by consumers. Finally, as they communicate on Instagram, research on source credibility is reviewed as this is the core in influencer marketing. This further helps the authors to understand how PSI can be facilitated between virtual influencers and their followers.

2.1 Parasocial Interaction Theory

The concept of PSI originates from the 1950's when Horton and Wohl (1956) presented it to address the tendency of people developing feelings of having made-up intimate social relations with characters in media. They distinguish PSI with three markers: friendship, understanding and identification. Friendship is defined by Tukachinsky (2010) as a sense of intimacy and liking to the extent that a friendship is nurtured. Understanding is referring to how a follower feel a personal bond to the media character, which is dependent on having knowledge of the character's deeper motivations and values. Lastly, identification means the adoption of similar traits, behaviors or values as the media person (Horton & Wohl, 1956). Furthermore, PSI is triggered if the media persona addresses the viewer in the performance and are adapting their communication so that the viewer feels seen (Ibid).

2.1.1 Parasocial Interaction on Social Media

Considering the changes of the media environment, and the extension of it to include digital platforms (Labrecque, 2014), the research on PSI has taken a new form. Mainly because the ability to initiate and maintain PSI is heightened through the interactive and reciprocal nature of social media (Chung & Cho, 2017; Yuan et al., 2016). Furthermore, Labrecque (2014) means that social media is a platform which enhances PSI through being open and allow for interactivity. Regarding virtual influencers in this paper, Labrecque (2014) found that the use of automated computer responses on social media through bots also is found to foster PSI, especially when addressing the person interacting. Although, the consumer needs to be unaware of the fact that it is computer-generated, which questions the benefits of non-human communication from a PSI perspective (Ibid).

Moreover, Yuksel and Labrecque (2016) argue that influencers in collaborations with brands can develop PSI with their followers on social media. This is further supported by Kupfer et al.

(2018) when stating that it is beneficial for brands to partner up with influencers because they have a vast social network, referring to the PSI they bring forth. Chung and Cho (2017) explicitly state that PSI with endorsers are facilitated through the use of social media and further that self-disclosure e.g., when revealing personal feelings to others, is an amplifier for developing relationships with their followers. This may be explained by how social media enable for PSI to be created through the reciprocal commenting, liking and sharing features (Ding & Qui, 2017). Yuksel and Labrecque (2016) claim that this allows for real behavioral manners to be replicated virtually on social media, which enhances the sense of intimacy.

2.2 Influencers and Influencer Marketing

Influencers have an authentic approach and share their private and professional lives through different opinions and experiences on social media (De Veirman et al., 2017). Further, influencers are often differentiated within a specific area for which they are experts in, and they usually have a genuine and engaged follower-base, with tendencies of PSI, that is perceived as marketing value for brands (Lou & Yuan, 2019). Therefore, this has led to the emergence of influencer marketing across several industries, where the influencer is seen as a credible and organic opinion leader when communicating brand's products and services with its followers (De Veirman et al., 2017; Kemp et al., 2018). The practice of influencer marketing is based upon a paid or sponsored agreement where the purpose is to build a stronger brand image through influencers' reliable content, which in turn will influence purchase intention and increase brand awareness (Kemp et al, 2018; Kietzmann et al., 2011). This is connected to its subtle approach, as the follower is not noticing the endorsement as clearly compared to traditional advertising (Ding & Qui, 2017; Wood & Burkhalter, 2013).

2.3 Virtual Robot Acceptance

Considering the profile and activities of human influencers in marketing, the need for understanding virtual influencers is evident. This is covered with the help of previous research on robots, where much of it has centered around how robots are going to be accepted by people. In the case of humanlike robots, the uncanny valley theory is problematizing the benefits of being similar to humans, as being too similar also can be perceived as uncomfortable (Mori, 1970). Further, the lack of ability to convey emotion is also a main obstacle and empathetic intelligence is unlikely to be replaced by robots due to the difficulties in interpreting and reacting to human feelings (Huang & Rust, 2018). Wirtz et al. (2018) also supports this, when stating that the introduction of robots will not be easily adopted by people referring to their ability to only imitate emotional responses. This inherently entails less authenticity and warmth in the interaction between a robot and a human, compared to what can be felt with real humans

(Ibid). Based on the strength of human influencers' to be authentic, it questions how virtual influencers are to be accepted by followers and further develop PSI.

Wirtz et al. (2018) recently conducted a research concerning robot acceptance, where they acknowledged different forms of service robots, one among them the virtual robot. The virtual robot was put forward as an intangible service, which consists of holograph-, video-, voice- and text-based functionalities. Therefore, this paper suggests that virtual influencers are categorized as virtual robots since they consist of these four functionalities. Regarding robot acceptance, Stock and Merkle (2018) argue that the robot must fulfil social-emotional needs of people. Applying this onto virtual influencers, three social-emotional elements need to be considered: perceived humanness, perceived social interactivity and perceived social presence of the robots (Tinwell, Grimshaw & Williams, 2011; Van Doorn et al., 2017). These three social-emotional factors are suggested to further explain virtual influencers and the acceptance of them.

Perceived humanness is the first social-emotional factor that is complex due to human perceptions on robots. People are more inclined to bond with humanlike robots (Rau, Li & Li, 2010). However, it is found that a robot with a face similar to a human, leads to disappointment when it is discovered that they cannot act as convincingly as they look. As such, it is recommended that robots should not look as a "synthetic human" (Duffy, 2003). Perceived humanness is tied to the aforementioned uncanny valley theory, which explains how there is a fine line between preferring and trusting a realistic face on an artificial human, and finding it unsettling if it looks too real (Mori, 1970). It is believed the reluctance among people to interact with humanlike robots is due to this. Moreover, humans are also found to be less forgiving in the interaction when having an uncanny perception of the virtual character (Tinwell et al., 2011). *Perceived social interactivity* is the second social-emotional factor and it relates to how socially capable the robot is in interaction. It can be determined even if the robot is not physical (Breazeal, 2003). Wirtz et al. (2018) claim the acceptance of robots depend on their social ability in adjusting and aligning with humans' needs and expectations in interaction. *Perceived social presence* is the third social-emotional factor. Unlike social interactivity, this is more purely about the availability of the robot. It builds on the notion of trust as increased when in company with another social being (Wirtz et al., 2018). This is now accomplished through automated social presence (ASP), which refers to how well a robot can be there for humans and create a sense of care-taking without being physically present (Heerink et al., 2010). Therefore, trust in virtual robots is contingent on them being socially present (Wirtz et al., 2018).

2.4 Source Credibility Theory

The acceptance and trust in virtual robots are argued to be dependent on social-emotional elements. However, as virtual influencers possess a role as a communicator with a purpose to influence others, not only trust, but source credibility becomes vital. Hovland, Janis and Kelley (1953) introduced the concept of source credibility to emphasize the need of the communicator's credibility for a message to have a persuasive effect on the receiver. Due to its relevance in many industries, it has ever since been further researched by a host of scholars (Colliander & Dahlén, 2011), resulting in various source credibility models taking additional and elaborated dimensions into account.

Hovland et al. (1953) mean the core pillars of source credibility lies in the trustworthiness and expertness of the messenger. *Trustworthiness* of a communicator relates to the degree of confidence the receiver has in that the intent is valid (Friedman, Santeramo & Traina, 1979; Ohanian, 1990). The dimension of trustworthiness is thus founded in consumers' perception of a source to be sincere, truthful or honest (Giffin, 1967; Hovland et al., 1953). *Expertness* refers to the perceived competence of the communicator, regarding their experience, knowledge and skills. This is related to how the communicator is able to make specific claims about a subject through having a perceived expertise (Ibid). Later on, Ohanian (1990) added the dimension of attractiveness onto source credibility. The original source credibility model was thus extended to a three-dimensional model combining trustworthiness and expertness with attractiveness (Ibid). *Attractiveness* relates to the consumer's perceived likability, familiarity and similarity of the communicators message (McGuire, 1985; Ohanian, 1990). McGuire (1985) suggests that familiarity refers to the level of acquaintance that the audience has with the source. At the same time, the perceived likeability relates to the behavior and physical appearance of the communicator, which has to be in line with its audience in order to be attractive. Similarity refers to how resembling the recipient is its source, e.g., regarding ideological and demographic aspects (Ibid). Lynch and Schueler (1994) argue that people who consider others to be similar to them, often tend to be more likable compared to people that are dissimilar. Trustworthiness, expertness and attractiveness have shown an influential effect on the persuasion of consumers (Harmon & Coney, 1982; Moore, Hausknecht & Thamodaran, 1988; Sternthal, Phillips & Dholakia, 1978; Wu & Shaffer, 1987), and the influencing of their attitudes (Craig & McCann, 1978; McGinnies & Ward, 1980).

2.4.1 Source Credibility and Influencers

In commercial settings, the benefits of source credibility refer to the positively increased effectiveness of marketing communication in brand awareness (Ohanian, 1990) and consumers' attitudes toward marketing activities and brands (Goldsmith, Lafferty & Newell, 2000; Lee &

Koo, 2015; Munnukka et al., 2016). Therefore, source credibility theory is commonly used for research regarding endorser credibility (Brown & Hayes, 2008; Cunningham & Bright, 2012; Dwivedi, Johnson & McDonald, 2015; Lee & Koo, 2015; Lou & Yuan, 2019; Munnukka et al., 2016; Ohanian, 1990; Pornpitakpan, 2004).

As an example, Munnukka et al. (2016) explore peer endorsers' credibility related to the source's *trustworthiness, expertness, attractiveness* and *similarity*. As such, they further elaborate on the aforementioned source credibility model of Ohanian (1990) by putting forward similarity as an independent dimension, and not just a subcategory of attractiveness, because of the specific importance of similarity in e.g., age, values and nationality, in an influencer's persuasiveness (Lou & Yuan, 2019; Munnukka et al., 2016). As previously outlined, there are several interpretations of source credibility and what factors that affect the outcome of it. However, this paper will focus on the four dimensions of source credibility developed by Munnukka et al. (2016), including trustworthiness, expertness, attractiveness and similarity, as these explicitly have been explored on the topic of influencers.

Although, in previous studies on influencers, scholars have acknowledged these four source credibility dimensions differently. Munnukka et al. (2016) suggest that the link between attractiveness and similarity of influencers and their followers should be consistent to obtain credibility. Therefore, the greater similarity between the actors, the greater credibility of the endorser (Bower & Landreth, 2001; Ohanian, 1990; O'Keefe, 1990). This follows Lou and Yuan (2019) who argue there is a tendency of only following influencers that followers identify themselves with. In turn, some studies have emphasized that trustworthiness and similarity are the key pillars for influencer credibility (De Veirman et al., 2017), and that trustworthiness of the endorser has more impact than the perceived expertise (McGinnies & Ward, 1980). Similarly, Lou and Yuan (2019) recent research on influencer marketing and source credibility of branded posts on social media showed that influencers' trustworthiness, attractiveness and similarity have a positive effect on followers' trust of their posts in collaboration with brands.

2.4.2 PSI Through Source Credibility on Social Media

Previous studies have shown that source credibility have a direct and positive impact on PSI between followers and peer endorsers on social media (Chung & Cho 2017; Yuan, Kim & Kim, 2016). Especially similarity, one of the dimensions of source credibility, is brought forward by Fu, Xu and Yan (2019) to enhance the development of PSI in this context. In addition, another dimension of source credibility, attractiveness, have also been argued to be a positive precursor for developing PSI with peer endorsers on social media (Liu, Lida & Zhang, 2019). Due to the

fact that these relationships are developed through social media interactions today, researchers have acknowledged that source credibility is as important for developing positive PSI on this media as well as it is on other medias (Chung & Cho, 2017; Yuan et al., 2016). Chung and Cho (2017) argue that if an endorser possess trustworthiness in terms of being open, comprehensible and intimate with its followers on social media, it will lead to positive feelings and increase the degree of credibility. In addition, Yuan et al. (2016) suggest that those social media users that have decided they want to use the platform for building relationships and entertainment, are more prone to shape strong PSI with peer endorsers.

2.5 Analytical Model

Previous scholars argue that PSI is affected by source credibility, where these have been used together in order to understand the interaction between peer endorsers and their consumers (Chung & Cho, 2017; Ding & Qui, 2017; Yuan et al., 2016). As such, these two theories are interlinked in the authors developed analytical model. The aim is to explore these concepts on the new marketing phenomenon of virtual influencers as they are also used as peer endorsers in collaborations with brands on Instagram. Due to the lack of previous research on virtual influencers, the social-emotional elements of robot acceptance (Wirtz et al., 2018) have been used to gather an understanding on consumer responses to virtual robots - a category virtual influencers in this paper are argued to belong to.

In order to answer the research question of how consumers are responding to interaction with virtual influencers on Instagram and what factors of source credibility that facilitate parasocial interaction between the two actors, the authors propose the following analytical model (see figure 1). As previous scholars suggest that the acceptance of virtual influencers is determined by the consumer's perceived humanness, social interactivity and social presence of the virtual influencer (Tinwell et al., 2011; Van Doorn et al., 2017), it is suggested that these social-emotional elements needs to be addressed before perceived source credibility and potential PSI. Source credibility is found to be an important reason for the success of influencer marketing (De Veirman et al., 2017; Lou & Yuan, 2019) along with having a positive effect on PSI (Chung & Cho, 2017; Yuan et al., 2016). Source credibility is defined by Munnukka et al. (2016) to consist of four dimensions: trustworthiness, expertness, attractiveness and similarity. These are illustrated in the authors model to measure which factors of source credibility that shows to have an important and positive effect on PSI with virtual influencers on Instagram. Previous research has shown that some factors of source credibility are more important in the context of PSI with human influencers. For example, similarity was added by Munnukka et al. (2016) due to its importance regarding the credibility of influencers, which is also supported by Fu et al.

(2019). In addition, attractiveness has been argued as especially prominent (e.g., Liu et al., 2019). Therefore, the factors are separated in the model to allow for different factors to have an impact on PSI with virtual influencers.

The analytical model illustrates the connection between source credibility and PSI, which as mentioned has been shown to be of importance concerning PSI with human influencers. Therefore, this is also suggested to have a positive effect on the enabling of PSI with virtual influencers. Although, as they are not only influencers but also robots, the initial acceptance of virtual robots is therefore deemed to be necessary to consider in this context. Consequently, this study's contribution is to explore how PSI is facilitated by source credibility in the context of virtual influencers on Instagram.

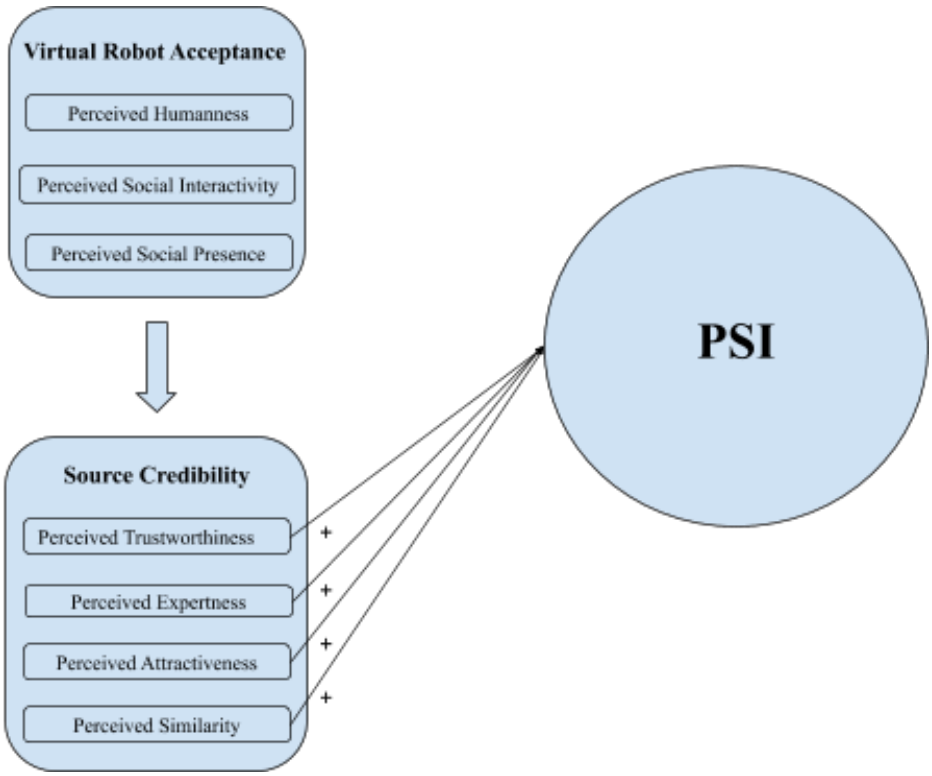

Figure 1. Analytical model.

3. Methodology

In order to explore what factors that facilitate the development of PSI with virtual influencers, this study has conducted semi-structured interviews along with information collected on two virtual fashion influencers: LilMiquela and Noonoouri. Before the interviews, the respondents did a pretest of following these on Instagram and were encouraged to interact with them. This has been analyzed and ended with results showing what factors of source credibility that is important when developing PSI with virtual influencers as well as the responses to them.

3.1 Research Design and Strategy

Due to the ongoing rise of virtual influencers as a marketing phenomenon, there is a need for increased knowledge to capture this. As such, this study explores factors that could affect the development of PSI with virtual influencers, referring to consumers' acceptance of them as well as their perceived source credibility, which have not yet been explored in academia. A case study strategy was chosen, as this is argued by Saunders et al. (2012) to answer how and what questions. This was essential in order to understand the consumers' interpretations on the interaction with the virtual influencers. Therefore, the interactions with virtual influencers was explored through interviews and secondary data of virtual influencers. As there are some problems identified regarding the lack of transparency in qualitative research (Bryman & Bell, 2011), this study has sought to give reasons for every step in the data collection to ensure dependability e.g., when keeping records of the interviews as well as explaining the data analysis process. Theoretical findings on human influencers and the concepts outlaid as relevant in this influencer-follower dynamic was used as a support when conducting the interviews with the respondents. As such, established theories were used in combination of new insights on the subject of interaction with virtual influencers on Instagram. This in order to strengthen the opportunity to get several perspectives on virtual influencers and their interaction with followers for the generation of new knowledge.

3.2 Data Collection

It was important to conduct primary data through semi-structured interviews in order to explore the phenomenon in real life, due to the lack of research on consumers' responses of virtual influencers. Before, the interviews the authors also followed several virtual influencers' Instagram accounts to learn more about them and their behavior. This revealed interesting insights (see Table 1) that was vital in order for the authors to understand them before conducting the interviews. Moreover, as the case study explores a new phenomenon, as mentioned the authors before the interviews also took part of secondary data on virtual influencers through updated industry articles on the Internet. Due to them being new on the market, these articles analyzed their behaviors as well as where they come from and what

implications they have for influencer marketing. This further helped the authors interpretations of virtual influencers acting on Instagram, along with the primary data.

3.2.1 Sample Strategy and Selection

The sample of this study is non-probable and firmly purposive. The authors are aware of the limitations of non-probability sampling, as Bryman and Bell (2011) argue it is hard to generalize the result, as well as it is biased when choosing respondents non-randomly. Although, this approach is useful in this study that seeks to capture the phenomenon of virtual influencers from a specific perspective. It was hard to reach contact with actual followers on Instagram, as the phenomenon is new, and the followers are mainly based abroad. The authors were also critical towards them because there is no way to control that these are genuine Instagram accounts, meaning that these could be fake. Therefore, the authors made a choice of conducting semi-structured interviews with respondents not knowledgeable about virtual influencers before the study to gain more rich data than would have been possible through questionnaires sent on Instagram. To handle this, the authors decided to conduct a pretest where the respondents could learn about the phenomenon during a one-week trial (see chapter 3.2.2). Naturally, this reduces the credibility of the research as they are not original followers of virtual influencers. In order to select proper candidates, the authors developed three criteria:

- Young women between the ages of 18-29
- Interest in fashion
- Followers of human influencers on Instagram

The first criterion relates to the obvious popularity of following influencers among women (Hennessy, 2018) and it is also based upon the fact that young users between the ages of 18-29 dominate the use of Instagram (Worthy, 2018). As they are virtual fashion influencers, the second criterion refers to the respondents' similar interests. This was regarded necessary in order to answer the research question as theory on source credibility suggests there is a need for some kind of similarity between the follower and the influencer (Lou & Yuan, 2019). The third criterion refers to their earlier knowledge and frequent act of following human influencers on Instagram, as the study had its outset in influencer marketing. This criterion was fulfilled by first asking and then verifying if they did follow human influencers.

Ten relevant Swedish respondents that fulfilled the aforementioned criteria were reached out to on social media. Eight of them accepted and resulted in an age range between 18-28. This was important in order to reach a wide range of young women, which enabled for possible

differences in consumer responses of virtual influencers. Although, a consequence of choosing Swedish candidates is the risk of not completely capturing the similarity aspects in source credibility. Due to the virtual influencers being of Brazilian-American and French nationality (see Table 1) it might have an effect on the perceived similarity, which reduces the credibility in this study. Nevertheless, this was inevitable due to time- and geographic constraints.

3.2.2 Pretest

One week before the interviews, a pretest was conducted by the respondents on Instagram. This was decided upon the fact that they lacked knowledge of virtual influencers and needed to interact with these before the interviews. The one-week trial was guided with instructions sent through email, which included information on which virtual influencers to follow on Instagram and encouraged them to be active followers for a week. This was carried out for the respondents to get a preunderstanding and to test interacting with the virtual influencers. In order to control that they actively followed the virtual influencers, the authors sent out one reminder to check if they followed the instructions.

The limited time of one week was due to the time- and geographic constraints of the research process, which is a limitation in this study. In addition, despite the guide and the reminder, there were no way to control that they actually were active followers of the virtual influencers. Naturally, the risk is that the respondents are less believable if not following them long and actively enough. However, the test was assessed to enable more reflective interviews, where the interviewee had time to reflect on the phenomenon and thus provide more in-depth answers regarding their responses and perception on source credibility.

3.2.3 Selection of Virtual Influencers

During the scanning of virtual influencers on Instagram, LilMiquela and Noonoouri were chosen for the respondents to follow during their one-week trial. Through scanning both their Instagram accounts and marketing industry articles on the internet, the authors identified that they are behaving and communicating much like humans e.g., having brand collaborations and responding to comments. However, it is still unknown whether it is pure AI or humans behind the virtual influencers (Chowdhary, 2019). The owner of LilMiquela is Brud, a Los Angeles based technology company (Shieber, 2018) and the owner of Noonoouri is Joerg Zuber, the artistic director of Opium Effect, a luxury design and branding bureau (Ghanem, 2018). As such, both of them are owned by a company and are not hiding the fact that they are robots in their communication, but they are not transparent with to what extent they are managed.

The selection strategy for LilMiquela and Noonoouri was based upon their relevance in terms of having a vast number of followers and high activity on Instagram. Moreover, the level of humanlike appearance and having collaborations with fashion brands, was pivotal in the selection strategy. This to tie it to influencer marketing but also for the respondents to see the similarities of human influencers they already follow. The two virtual influencers differ somewhat in their characteristics as well as appearance, while both correspond with the criteria of being humanlike (see images in Appendix 3). The authors chose two virtual influencers in order to suit the time constraints of this paper, as well as two being enough for the respondents to follow during their one-week trial. Below the authors present a table of useful interpretations regarding their Instagram personalities:

Instagram	Followers	Profile	Expertise area	Activities
@LilMiquela	1.6MN	- 19-years old - Brazilian-American - Living in LA - Liberal advocate - Friend of @Bermudaisbae and @Blawko22 (other virtual influencers)	Fashion entrepreneur collaborating with brands, political activist, singer, model	- Post photos on outfits and travels, both with and without sponsors several times a day. - Share many stories (i.e., video clips) when doing everything from going for a coffee, celebrating her birthday with friends, visiting Coachella and interviewing (human) artists.
@Noonoouri	297K	- 18-years old - Living in Paris - Globetrotter - Passion for art and fashion - Environmentalist	Fashion ambassador for luxury brands	- Post photos on her posing in real high couture, both with and without human friends, several times a day. - Share videos from her travels to fashion houses or corporate offices. - Share many informative pieces on social or environmental issues, e.g., women's rights and animal protection.

Table 1. Information about @LilMiquela and @Noonoouri.

3.2.4 Semi-structured Interviews

This study has conducted semi-structured interviews which was needed in order to capture the respondents' responses of virtual influencers and their interaction with them. The interviews were held face-to-face between 2019-04-17 and 2019-04-26 in Sweden. It was deemed important that the interviews were held by both authors, which is argued by Guba and Lincoln (1994) to confirm objectivity in the data collection. A supportive interview guide of 15 questions (see Appendix 2) was followed, which was formulated beforehand through an operationalization of the analytical framework (see Appendix 1). The interview questions were open-ended to enable for a flexible discussion about the concepts, which is argued by Saunders et al. (2012) to allow for follow-up questions to dig deeper when necessary. For example, when the respondents illustrated their own examples of feelings about virtual influencers.

The interviews had varying degrees of engagement and flow in the discussion. The authors' identified a consequence of having an open-ending discussion, as the respondents had tendency of losing focus on what is relevant for this study. This was handled by aiming to direct the respondents back onto the subject by asking follow-up questions. The interview guide was helpful in keeping the authors aware of what is important in regard to the study's purpose. Moreover, the pretest carried out before the interviews was also noticed to have an impact. Some respondents seemed to be more reflective on the subject of virtual influencers, whereas some struggled. This is due to the authors lack of ability to control that the respondents fully committed to the assignment given. As such, some respondents' involvement was more valuable in the following analysis. However, all respondents had interesting findings and perspectives on the phenomenon of virtual influencers.

The respondents have been notified about their protected confidentiality and anonymity. As such, other than their age and profile of interest, they remain anonymous in the study and will be assigned a number in the findings and analysis (see table 2). Moreover, with the consent of the interviewees, the interviews were audio-recorded in order to fully commit to the conversation and thereby extract citations afterwards. To ensure a natural setting, the interviews were held in Swedish as it is the respondents and the authors native language. This reduced language barriers and misunderstandings in the discussion. Therefore, the recordings were transcribed in Swedish and typical quotations was further translated into English. The main consequence of this is the risk of losing specific meanings, as the authors are not fluent in English and some words are hard to translate, e.g., slang. This have been recognized and similar words were found in order to benefit the trustworthiness and authenticity of it. Below the authors present a table of more detailed information regarding the interviews:

Respondent	Years of Age	Length of Interview	Date of Interview
1	24	29.5 min	17-04-2019
2	23	36 min	17-04-2019
3	25	26 min	17-04-2019
4	20	35 min	23-04-2019
5	18	25 min	23-04-2019
6	22	44.5 min	25-04-2019
7	28	39.5 min	26-04-2019
8	26	27.5 min	26-04-2019

Table 2. Information about the respondents and the interviews.

3.3 Literature Discussion

The search strategies were followed by professional recommendations as well as using keywords in search machines, and these were: “Parasocial Interaction”, “Influencers”, “Influencer Marketing”, “Virtual Robots”, “Robot Acceptance”, “Source Credibility”. The number of journals was selected and evaluated in order to use the most relevant ones connected to the purpose of the study, which is vital when reviewing literature according to Saunders et al. (2012). The main criteria in the search strategies for this paper was that the journals were peer reviewed and cited by other scholars, in order to reach trustworthiness.

During the research, the authors have encountered obstacles regarding the theory of PSI as this has been dealt with in different ways. Scholars have cited other scholars work of PSI and referred to it as parasocial relationship (PSR). The interchangeable use of PSI and PSR is due to the similarity of the two concepts. Some scholars have recognized this and have attempted to deliver some clarity of the differences. For example, Dibble, Hartman and Rosaen (2016) define PSI as restricted to the interaction taking place and PSR as more long-term. This reveals the challenges of understanding for which one to choose. However, the authors of this study have chosen to consequently use PSI due to its dominance in research. Moreover, the difference between the concepts was not regarded to be problematic for the research as ultimately, they both refer to a sense of relation.

3.4 Operationalization

As presented in chapter 2.5, the authors have developed an analytical model from the theories used, which have been further translated through an operationalization (see Appendix 1). Human influencers and influencer marketing have set the foundation of the operationalization, and the sample selection ensured that the respondents understood these concepts. Therefore, question 1-3 intends to investigate how the interviewee perceive and value human influencers on Instagram, in order to understand what is important to the respondent in interaction with them. As the study focuses on responses to virtual influencers, these have been measured by asking questions on their perception on the social-emotional elements of virtual robot acceptance. This is covered in question 4-6, where the purpose is to explore how consumers interpret virtual influencers due to them being robots and how they are used in virtual influencer marketing. For example, question 5 aims to discover the respondents’ experience of the two virtual influencers e.g., their appearance and interactivity.

Moreover, PSI was measured in the context of Instagram in question 7-10. The respondents were asked questions about their interactions with the virtual influencers (Q7-9), to gain an understanding of what can relate to PSI. For example, question 10 is developed to discover

possible tendencies for a relationship with the virtual influencer, in order to capture the sense of intimacy. In addition, source credibility was measured in regard to how consumers perceive virtual influencers on Instagram as it is a precursor for PSI. The aim was to explore the source credibility dimensions by individually addressing each dimension in question 11-15. Question 13 investigated if they can identify themselves with the characters (to capture similarity) and question 15 investigated the possible reasons for following them (to capture attractiveness). These were indirectly addressed to enable for the respondent to discuss freely. Some were also direct, for example by asking how they find them credible in virtual influencer marketing (Q11) and how they perceived the virtual influencers' trustworthiness (Q14). The operationalization enhances the trustworthiness of the data, as the respondents are suggested to be fully able to answer the questions and in turn fulfill the purpose of the study.

3.5 Data Analysis

The data analysis had its outset in the operationalization of existing theory used in this paper. The transcripts were read several times by the authors in order to make sense of the data and the most prominent findings connected to the concepts (e.g., virtual robot acceptance) were bolded. This coding is similar to the qualitative content analysis where large amount of data is analyzed (Bryman & Bell, 2011). Thereafter, the bold keywords where concepts had been identified were color-coded; green for responses to human influencer, red for responses to virtual robots, blue for credibility in virtual influencers, and purple for PSI with virtual influencers. The next step was to select quotes that illustrated the major findings and transfer them into a coding scheme (see Appendix 4). The coding scheme was designed to allocate quotes to each dimension of the concepts (e.g., trustworthiness was separated from the other dimensions within source credibility). A consequence of this is the fragmentation of data, when disregarding the social context during coding. However, the quotes were not distorted, and it was necessary to choose quotes that could help the authors illustrate the findings.

Problems aroused when some of the quotes could relate to more than one concept or dimension from the theory. Many theoretical concepts are similar to each other, for example PSI, social interactivity and social presence. To illustrate how the authors encountered this problem, this quote is an example: *"You got kind of tingly when they liked and commented back, then I was like, It notices me" (R5)*. This is as an indication of PSI as the respondent felt seen by the virtual influencer. However, this could have gone under perceived social presence as well. Although, when reviewing the theories, PSI is more related to a feeling of being addressed and therefore it was decided that all indications towards being seen was connected to PSI. Another example refers to the resemblance between perceived humanness and the similarity dimension of source

credibility: "*I don't feel tempted to wear the dresses she wears for example, she's a doll with a very skinny and distorted body - will it look good on me?" (R7).* The authors interpreted this as suitable for the similarity dimension, as it refers to the relatedness between the actors. It takes perceived humanness to another level by comparing oneself to the virtual influencer and questioning similarities. This is further identified within the dimension of attractiveness, as similarity is developed from this, it is an argument to place it in the similarity dimension.

When the authors had placed the quotes within the dimensions, they were further analyzed and subcategories were identified (e.g., 'Being seen as a follower' and 'Virtual influencers' profile' in the case of the quotes above) after recognizing similar patterns from many respondents. All concepts and dimensions were subcategorized due to different interesting findings. PSI and the dimensions of source credibility were found to have several subcategories, in contrast to human influencers and the dimensions of virtual robot acceptance that only had one subcategory identified each (e.g., Importance of availability within the dimension of Social presence). After the coding process within the scheme, the most dominant quotes were selected and further translated into English as an additional support for the empirical findings (see chapter 4).

4. Empirical Findings

Within the concepts and its dimensions developed from the operationalization, there are subcategories found which are summarized below. The findings illustrate differences between LilMiquela and Noonoouri in regard to factors affecting the facilitation of PSI with them. Further, differences between human and virtual influencers are also presented concerning PSI. Additional quotes from the findings are presented in the coding scheme (see Appendix 4), in order to get a deeper understanding of the different concepts, its dimensions and their subcategories in the context of virtual influencers.

4.1. Human Influencers and Influencer Marketing

It was shown that all of the respondents followed human influencers to gain inspiration. It was also important to relate to the influencer they followed, as illustrated by respondent 2: *"You want to relate to the person to some extent… For example, I follow one influencer that is half South Korean, and I'm half South Korean and thereby I get to see what fits her, what colors, what she does with her hair (...)".* Another important criterion of following human influencers was their authentic content, as respondent 1 argued: *"(...) On the other hand I believe she is very open on Instagram. She is herself. Maybe she doesn't have the best skin all the time or eats specific food".* All of the respondents agreed on this, as they wanted to be inspired to the extent it felt real. Moreover, a feeling of a relation towards their favorite influencers was also expressed, as they have followed them since their beginning.

4.2 Perceived Humanness of Virtual Influencers'

All of the respondents highlighted the importance of humanlike robots. LilMiquela was perceived as being more humanlike, due to her more believable visual appearance compared to Noonoouri. For example, respondent 3 described the virtual influencers differences: "*LilMiquela is more lifelike, while the other one is more of a bratz-caricature who is 1.50 long with a giant head. I did not like Noonoouri, but I like LilMiquela".* At the same time, respondent 7 commented that it was hard to recognize whether or not LilMiquela was real: *"I would not have thought about that she was virtual the first times when I checked her stories (...) compared to Noonoouri who was a doll, she was not made to look like a real human".* There were split opinions regarding LilMiquela's humanlike appearance, the same respondent commented: *"I don't know which one of them is the best, which one of them who is more trustworthy, because I get annoyed when she pretends that she's real while she's not (...) But I don't get inspired by Noonoouri, she looks fake, she's really a doll".* Other respondents agreed on this finding, as LilMiquela's humanlike appearance was perceived as being too close to reality. Further, the majority of the respondents expressed being more influenced by LilMiquela's appearance.

4.3 Perceived Social Presence of Virtual Influencers'

What was noticed by the respondents was how available the virtual influencers were on Instagram. Respondent 4 summarized: *"It was like you got a closer relationship to them because it felt like they posted much more and answered to the response they got if I commented".* She, and the majority of the respondents, appreciated this. However, an expressed annoyance due to the too frequent updates was also identified. Moreover, some respondent gave the example of virtual influencers' not being able to have "meet and greets" with their followers. Therefore, respondent 5 was thinking they respond so much to comments because of their irrelevance in "real life". This was in line with respondent 7, who thought it was in the virtual influencer's interest to make an effort to respond to everyone, as well as respondent 8 who felt that "they're there to serve their followers".

4.4 Perceived Social Interactivity of Virtual Influencers'

The majority of the respondents believed that Noonoouri and LilMiquela were communicating in the same way human influencers do on Instagram. Respondent 3 commented: "*I believe that the idea with virtual influencers is to interact in a humanly way".* This was also illustrated by respondent 1 more specifically: *"They are writing in a way humans' do, when using emojis and all of that (...)".* Further, respondent 8 commented: *"I really believe that the strength with them is to capture their audience when thinking of do my followers want purely stylistically, what I do, what I like and how I express myself (...)".* Moreover, the virtual influencer's problems of considering the specific context in real life was identified. For example, respondent 1 argued:

"But I remember that Noonoouri posted something from Paris and then it was someone commented 'how can you post this picture during the fire in Notre Dame?' (...), it was no context really, because she answered the comment with something else".

4.5 Perceived Trustworthiness of Virtual Influencers'

The respondents compared the virtual influencers to human ones, meaning it is a fake reality shown in both accounts. The majority were critical towards influencer marketing overall and felt it was a lack of authenticity regardless of human or virtual. However, respondent 4 and 5 were more positive and questioned why the use of virtual influencers in marketing is any difference to using real people. They mean that *"In the same way you trust a robot you can trust a person*" (R5) and thought "*It was normal collaborations with things they had passion for and stand behind*" (R4). At the same time, the respondents expressed uncertainty regarding how they function and whether it is more than one person behind the opinions of the virtual influencer. As such, they argued it felt uneasy to not see the team behind the influencer or know what their background or intentions are. For example, respondent 7 argued: *"I guess I trust them less when there is a big company behind and not a private person*".

4.6 Perceived Attractiveness of Virtual Influencers'

At a first glimpse from following LilMiquela and Noonoouri, the curiousness of following a robot was highlighted, for example, respondent 6 argued: *"It is kind of funny that it is a robot, because before this all started, I wanted to follow them to see how it worked (...)"*. The other respondents claimed it was interesting to follow them but will not continue doing it after the one-week trial. Moreover, it was also found that Noonoouri and LilMiquela have too many collaborations with brands on Instagram, which made them less inspired by their posts. For example, respondent 1 argued: *"I saw that LilMiquela had three sponsored posts in her feed in a week and that is quite a lot. I don't think it is communicated what type of spons there is (...) No greater credibility there"*. Other respondents commented on the problem of having too many tags within one post, for example: *"It was ads everywhere, all the posts had some tag and if they want to reach authenticity, they have to be more of "this is my breakfast", to capture the everyday life (...) I believe that real influencers work on this quite a lot to build a brand (...)"* (R2). It was also argued that LilMiquela was better at being humoristic in her captions, in comparison to Noonoouri who many thought were too branded.

LilMiquela visited Coachella during the respondents one-week trial and this activity was experienced to be unrealistic. For example, respondent 1 argued: *"Not so great credibility... Now when LilMiquela was on Coachella, I had a hard time to understand how this is*

happening. If there were real people there, I would have understood the whole thing (...)". Others agreed on the fact that these activities are making LilMiquela more humanlike and lifelike, while Noonoouri lacked the ability of capturing their attention.

4.7 Perceived Similarity of Virtual Influencers'

The importance of being able to relate to characters was acknowledged in different ways. The appearance of the virtual influencers was an obstacle to see similarities with them, especially for Noonoouri. Respondent 7 argued: *"I don't feel tempted to wear the dresses she wears for example, she's a doll with a very skinny and distorted body - will it look good on me?".* Similarly, respondent 6 concluded you want to know how the clothes fit on a real human. Respondent 2 was more explicit: "*The robot would be more relatable if it looked more like me, that is a real human*", and further that she would be more interested if a virtual influencer based in Sweden came along. Overall, it was easier to relate to LilMiquela: "*LilMiquela was more like a real person who does her thing and stand up for herself (...) I can see myself in that, that you should go your own way*" (R4). Despite the difference in appearance, Noonoouri's and LilMiquela's age was risen as an obstacle for the respondents to relate to them.

4.8 Perceived Expertness of Virtual Influencers'

There were split discussions regarding the virtual influencers' expertise area on Instagram. Respondent 3 noticed LilMiquela and her ability of doing many things: *"Yeah, it was interesting to listen to her song on Spotify. So yeah, in some way my truth value increased for her actually (...) because she can do things and is more developed".* Moreover, respondent 2 argued that virtual influencers cannot be believable: *"(...) Clothes, I don't know if I would care if she said 'this is my go-to-top', then I would not believe it. But I would definitely be inspired to buy something if they posted something nice. But if it would have been a facial product, then I would not have bought it. I almost get annoyed because of this".*

4.9 PSI with Virtual Influencers'

The experience of being seen by the virtual influencers while interacting on Instagram was identified. Respondent 2 and 6 commented they were feeling tingly and excited when interacting. To illustrate, respondent 2 argued: *"If I connect it to normal influencers, virtual influencers become much closer. Because now I can chat with my idol or whom it might be through writing on Instagram. I felt this with her, LilMiquela, because this creature has these many followers and I can chat with her. It felt kind of tingly and cool (...)".* Moreover, respondent 4 commented on the specific experience of interacting with virtual influencers on Instagram: *"Either they liked or commented back, and this would normal influencers never do in the same way (...) in that way, a closer bond was created to them 'like oh now she commented*

or responded on my comment, she sees me'. I can imagine that those who follow these virtual influencers from start, their bond gets very strong due to the response from them (...)". This was also supported by respondent 7: *"(...) It feels like people can trust and like them, when getting response on their questions which creates a kind of relation, like 'you remember me, I'm Bob and we talked last week'".* However, respondent 2 further argued a backside of only liking in the interaction: *"At first, you think oh how nice with a like, but it's not a person. It gets double-sided, because first you think yeah she likes the comment, but then I would rather get a like from a real person than always getting it from a virtual".*

Respondent 4 and 5 felt that since they responded in a more personalized way than human influencers, it was like they became "friends". In addition, respondent 6 thought it was more fun to comment and show support to Noonoouri's Instagram posts. Respondent 6 experienced a difference in communication from Noonoouri and LilMiquela: "*Noonoouri doesn't share much from her private life, it's a lot of clothes and company names. LilMiquela on the other hand, she's like 'one day until I turn 19' and now she had photos from her birthday party (...) so then you feel that if I follow her one more year I will think like 'it was a year ago she turned 19'. It is much easier to build a relationship to such a robot*". Accordingly, respondent 8 thought it felt more personal to follow LilMiquela but that she senses that they both want to create a "community" with their followers considering they are addressing them so often.

5. Analysis

Given virtual influencers are new in the market and the knowledge of what they are and how they function still is limited, their dimensions of source credibility seem to be difficult to establish. This raises questions on how consumers respond to virtual influencers. It was shown from the interviews that the respondents found it hard to interact with LilMiquela and Noonoouri as they always had in mind that they were not real. Consequently, it was made clear that they were unsure of how the robots' function and how it made it difficult to lower their guard and pursue interaction with them. PSI is through this shown to be dependent on virtual robot acceptance (Wirtz et al., 2018), as the respondents' perception on them determined the path towards PSI. It was clear there were major disagreements in the way they respond to LilMiquela and Noonoouri and how this was explained through the different factors that have an impact on the development of PSI. Being more humanlike proved important to facilitate PSI with virtual influencers, which is not surprising considering Tinwell et al. (2011) state a more humanlike robot is preferred in interaction. The interviews imply that LilMiquela's more humanlike face and body invited to more inspiration, in comparison to how Noonoouri's doll-characteristics was found off-putting. For example, it was hard for the respondents to get

inspired by a dress if it was shown on Noonnouri due to her unnatural body compared to LilMiquela. Ultimately, the goal for influencers is to inspire and persuade consumers in their communication on Instagram (Kietzmann et al., 2011), which questions how a non-humanlike virtual influencer is going to be able to develop PSI. It could therefore be interpreted that one of the social-emotional needs, perceived humanness (Rau et al., 2010) was important as the respondents were more inclined to follow and interact with LilMiquela. Moreover, as they were more inspired by LilMiquela, her attractiveness was considered higher than compared to Noonoouri. This finding indicates that attractiveness has an impact on the degree of source credibility, which refers to the likability of e.g., the source's physical appearance that has to be in line with the audience in order to be found attractive (McGuire, 1985).

Contradictory, LilMiquela also encountered problems by being too humanlike when some expressed feelings of unpleasantness by her appearance. The uncanny valley theory (Mori, 1970) explain this finding as it argues there is a fine line between preferring and trusting a more visually persuasive face on a robot and finding it uncanny if it is too persuasive. This could prohibit the ability for LilMiquela to develop PSI, in line with Tinwell et al. (2011) suggestion that people's reluctance to interact with robots is due to having this uncanny perception. As there seems to be disagreements regarding how virtual influencers should look like, it indicates major implications for PSI. It could be interpreted that virtual influencers should look like humans in order to be able to facilitate PSI with their followers, while at the same time the resemblance cannot be precise.

Considering that the responses of LilMiquela were both positive and negative in regard to her humanlike appearance, it is suggested that virtual influencers should be humanlike to the extent that it is transparent that they are robots, so the followers won't feel cheated. Even if Noonoouri was not perceived with the same feelings of unpleasantness, LilMiquela was still considered more trustworthy and this was due to her humanlike appearance. This further implies that trustworthiness is an important factor in source credibility, as it relates to the sincerity and honesty in the source's communication (Giffin, 1967; Hovland et al., 1953). Hence, even if LilMiquela was not real, she tried to look like a human which leads to her having a simpler path to achieve PSI, as her look entails trustworthiness in comparison to Noonoouri. Maybe it could be interpreted that consumers' responses to virtual influencers are grounded on prejudices about robots, meaning that they normally do not look like humans and are therefore less trustworthy. This opens up questions regarding the future of humanlike robots and how virtual influencers are one step closer towards creating an interactive platform for influencing humans when having a humanlike appearance.

However, the interviews also indicate the lack of relatedness towards virtual influencers. Even if LilMiquela was preferred, the importance of similarity was discovered through how the respondents were less inclined to interact with them due to age gap and place of residence. The resemblance in demographics and dialogical aspects are the foundation of the similarity factor of source credibility (McGuire, 1985). In addition, similarity is argued by several scholars to be of great importance regarding an influencer's credibility (e.g. De Veirman et al., 2017) and further their ability to develop PSI (Fu et al., 2019). As the respondents were Swedish, it was shown to have an impact that both LilMiquela and Noonoouri were living and visiting places they could not relate to. Due to LilMiquela being of Brazilian-American nationality and Noonoouri of French nationality, it seemed to prevent interaction with them in the same way.

Accordingly, the findings also indicate that consumers would rather follow a Swedish virtual influencer. This seems to reveal consumers' tendency of relating to virtual influencers in the same way they do with human influencers. However, how can this be understood? A simple explanation of this could be what Lou and Yuan (2019) suggest, that followers only follow influencers they tend to identify themselves with. As such, the likelihood of following a virtual influencer is small if not demographically similar. This was also seen in the age, when LilMiquela's age of 19 and Noonoouri's age of 18, were further determiners for interaction with them. Even if the respondents are in their 20's and therefore close to the virtual influencers in age, the age gap seemed to be too big in order for them to fully interact. Therefore, it could be interpreted that PSI with virtual influencers will be blocked due to a younger age of the virtual influencer, as it has consequences on the ability to relate. For instance, the respondents found it hard to relate when they e.g., dressed too young and used a teenage language. Perhaps this block can be more explained by their different life stages, rather than age per se, as the respondents felt that LilMiquela was acting in a way they did some years ago.

At the same time, the interviews indicate that two respondents (R4 & R5) were more inclined to develop PSI with both LilMiquela and Noonoouri. This could be explained by their younger age compared to the other respondents, which further reveals the importance of similarity in age in order to facilitate PSI with virtual influencers. Moreover, as these respondents are digital natives, it could be interpreted that they are more used to robots and AI in comparison to the other respondents, which also could explain the elders' reluctance to interact with them. This is in line with Ohanian (1990), who affirms that the greater similarity that is found between the communicator and the receiver, the greater credibility of the endorser. In addition, it strengthens how Munnukka et al. (2016) claim similarity to be extra important in an influencer's source credibility. One of the younger respondents could see beyond LilMiquela as a robot and see

similarities in the fact that she was “doing her own thing”. As such, it is suggested that LilMiquela was risen to a level where relatedness could be accomplished, maybe due to her more humanlike appearance. Perhaps Noonoouri is also more unattainable as she dresses in high couture. Therefore, she could be perceived more as a mannequin and less as a human.

However, in contrast to this respondent, other respondents dehumanized the virtual influencers by referring to them as “it”. These respondents thus imply that they have decided the virtual influencers are robots from the beginning. Naturally, this has an impact on the ability to develop PSI, as it implies the virtual robots cannot be seen as a real influencer. Even if PSI relates to the made-up relation the audience has to a media endorser (Horton & Wohl, 1956), it further challenges the relation one can create to a made-up influencer like the virtual influencer. Perhaps this relation can be developed with virtual influencers even when calling them “it”, but it is more likely assumed that consumers are reluctant to PSI with them due to this.

Another major finding related to LilMiquela’s and Noonoouri’s differences in perceived humanness, is their lifelike activities. Due to the fact that LilMiquela posted images and movies of her visiting Coachella, interviewing artists and eating dinner, it made her more humanlike in comparison to Noonoouri’s static snapshots of her posing in high-couture dresses. In turn, this made LilMiquela more attractive as the respondents felt this was inspiring. Perhaps this can be explained by how the perceived likeability of the communicator refers to its behavior, which has to be in line with the audience in order to be attractive (McGuire, 1985). Therefore, it was evident that the level of authenticity increased along with LilMiquela doing lifelike activities as the respondents could recognize themselves in this, whereas it for Noonoouri never occurred. The ability to identify oneself in the behavior have through this been interpreted to play a part in the source credibility of the virtual influencer. More important is that the identification with the endorser’s behavior is important to develop PSI (Horton & Wohl, 1956).

However, the interviews also indicate an annoyance of how LilMiquela’s activities were unrealistic for a virtual robot. This questions how far virtual influencers can go in their lifelike behavior and at the same be seen as attractive. It could be illustrated by LilMiquela’s behavior, when she pretended it was all real and personally experienced when conducting her lifelike activities. This seems to decrease the level of attractiveness because it was perceived as fake. Turning to Duffy (2003), people tend to be less forgiving in the interaction when robots with a “synthetic human face” cannot act as convincingly as they look. Consequently, consumers’ responses to humanlike robots and their lifelike activities could problematize PSI. However, the respondents were still more inclined to interact with LilMiquela than Noonoouri.

Nevertheless, it implies that attractiveness of her behavior is balancing on a fine line of being perceived as real or fake and could therefore both facilitate and prevent PSI. On the other hand, Noonoouri was not perceived to be attractive at all, which again indicates how attractiveness is a crucial facilitator for PSI, in line with Liu et al. (2019) finding on how attractiveness positively affects PSI with human influencers on social media.

The findings further indicate similarities between LilMiquela and Noonoouri, as both of them had problems of having too much sponsored posts in their Instagram feed compared to human influencers. This could be interpreted to challenge their degree of attractiveness and trustworthiness. Both LilMiquela's and Noonoouri's frequency in brand collaborations could be explained by them being robots and not having anything else to post on their Instagram accounts. However, it was indicated that LilMiquela was authentic and humoristic when sharing personal aspects of her life e.g., her birthday celebrations. As argued by Chung and Cho (2017), influencers are more believable and likely to nurture PSI when being personal about their lives, which makes it easier for consumers to identify themselves with them. In comparison to LilMiquela, the perception was that Noonoouri did not have any balance in her distribution of authentic and branded content, and she was therefore considered less attractive. This also indicates it was easier to get to know LilMiquela compared to Noonoouri, as she had a different approach when doing relatable lifelike activities alongside her frequent brand collaborations. Lou and Yuan (2019) suggest attractiveness to be one of the determiners of source credibility before developing any sense of trust in human influencers' branded posts. Arguably, it is suggested that virtual influencers should not communicate branded posts more than needed if they want to be perceived as attractive and credible in the matter of virtual influencer marketing. Instead, they could create more authentic content from their everyday life.

Even if they were perceived as fake when having too much branded content, the findings also indicate that human influencers are perceived just as fake as virtual ones. This may be related to the idea of having the perfect content along with retouched images nowadays. However, this was not appreciated by the respondents as they wish for authentic content in order to be inspired. This further question the whole influencer marketing era, as there seems to be a movement from perfection towards authenticity. For virtual influencers in contrast to human influencers, this is suggested to create a dilemma considering the ability to be authentic is difficult when not being a real person with authentic purposes. Instead, it is interpreted from the findings that their purpose is to be a marketing tool and an intriguing entertainment channel. This questions virtual influencers' success and further development, as consumers responses to interaction with them seem to be disturbed by the lack of authenticity coming from their fictive existence.

Moreover, the interviews also indicate that frequency of branded posts seems to affect trustworthiness. Perhaps this can be understood by the lack of attractiveness in both LilMiquela's and Noonoouri's branded posts, as they were not authentic to begin with. Turning to the problem of them being virtual robots, they cannot have an opinion in anything they recommend which questions their ability to influence humans. As virtual influencers cannot touch, see or use any product, they genuinely cannot recommend something to their followers. This goes against the essence of influencer marketing, where the goal is to collaborate with credible and organic opinion leaders when communicating products of brands (De Veirman et al., 2017; Kemp et al., 2018). In turn, this has led to the major finding that expertness seems to not have any effect on source credibility in the case of virtual influencers and the development of PSI. Expertness relates to the skills and competence of a communicator and how they are allowed to make specific claims through being seen to possess expertise (Hovland et al., 1953). Therefore, the findings imply that virtual influencers cannot have an expertise due their non-existence and incapability of being credible in recommending e.g., the effect of skin-care products. Rather than them being perceived as experts when doing and stating things, it is interpreted from the interviews that the respondents treated it as lack of attractiveness and trustworthiness instead. This differs from human influencers, as their purpose is to have an expertise in a specific area (Lou & Yuan, 2019). Even if LilMiquela and Noonoouri had the same interest in fashion as the respondents, it is interpreted from the findings that they could not fulfil any sense of expertise in the same way as human influencers can. This question the virtual influencers' expertness and it is therefore disregarded as a facilitator for developing PSI.

The lack of trustworthiness in communicating recommendations also leads to the problem of who the actual communicator is behind LilMiquela and Noonoouri. Consequently, the interviews further indicate the concern about not knowing who posted the photos, wrote the captions, responded to comments etcetera. In contrast to human influencers who usually consists of one person, the respondents' agreed on the fact that virtual influencers are harder to trust due to the lack of transparency around how the virtual influencer function and what their purpose is. This leads to the problem of not knowing the intent of the virtual influencer, which is problematic for the trustworthiness since it is based upon valid intentions (Friedman et al., 1979). As both LilMiquela and Noonoouri are owned by companies, it is still unknown if or how many people there are behind the scenes of their actions on Instagram. The different opinions behind e.g., Noonoouri's ambivalent views or the humoristic captions of LilMiquela are interpreted to have implications on the trustworthiness. The findings indicate communication problems for virtual influencers, as they could be contradictory in their comments from time to time as well as conveying inappropriate statements. As such, the

intentions of the virtual influencers are not trustworthy as it could be anyone communicating, even a man, which is not in line with their presented gender. Naturally, this could also present challenges for the development of PSI, given it is dependent on creating a relation through gathering an understanding of the underlying motivations and values of this person (Horton & Wohl, 1956). Thereby, it is unclear whether this understanding could be developed for virtual influencers, as the motivations and values could correspond not only to one person, but to several ones. Moreover, as PSI entails a made-up relation to a specific endorser (Ibid), it is suggested to be hard to develop if the underlying concern about the team behind them and what their opinions actually are, is disturbing this.

In addition, the teams behind LilMiquela and Noonoouri could also explain their frequent updates and responses to comments, as this was another major finding in this study that differs from human influencers' interaction. Virtual robot acceptance in terms of perceived social interactivity and perceived social presence (Wirtz et al., 2018), was here proved to be relevant for PSI. The findings highlighted that the virtual influencers' communication was far more frequent and personalized than what the respondents felt human influencers have. The perceived social presence of a virtual robot is theorized as something that needs to be fulfilled for humans to accept them (Wirtz et al., 2018), and it was indications in the findings that their availability was high and appreciated by the respondents. Perhaps this could be explained by them being non-existent and as such exaggerate their online presence through frequent communication with their followers. It is still unknown whether there are teams operating LilMiquela and Noonoouri or if they communicate through automated social presence (Heerink et al., 2010). However, their frequency and personalized communication in e.g., liking and responding to comments suggests that there are teams doing this for them as there is a minor chance that AI could accomplish this yet. In addition, their perceived ability to communicate as humans, in terms of using emojis and flexible social media language indicates there are teams behind both of them to some extent.

However, an error that indicated automated social presence was shown in one of the findings, when Noonoouri during the fire in Notre Dame was perceived to not adjust her communication to the context. Therefore, it is suggested that virtual influencers could be operated in a combination of both humans and AI, as they fulfill the need of availability but at the same time fail in their perceived social interactivity sometimes, referring to how well they are able to adjust their communication to humans' needs and expectations (Wirtz et al., 2018). The study revealed some examples where LilMiquela and Noonoouri failed to meet the empathetic expectations in their communication, which is also found by Wirtz et al. (2018) to be a problem

in order to trust robots today. Consequently, the extended interpretation is that the trustworthiness decreases along with the degree of source credibility when their social presence and social interactivity is questioned by the respondents. If there is a perception of a team behind the communication of the virtual influencers', it implies that the trustworthiness is jeopardized due to lack of transparency. The same implication was discovered when the virtual influencers was perceived to communicate on their own, as it resulted in errors of AI that the respondents reacted negatively to in terms of trusting them. Virtual influencers thus seem to have a problem no matter which communication they conduct, and inevitably this could have consequences on the development of PSI. Turning to Labrecque's (2014), his study found PSI to be less fostered if the consumer is aware it is a robot interacting. The responses to the virtual influencers seems to follow this finding, as the awareness of them being robots' is interpreted to have an effect on the degree of trustworthiness and as such PSI.

Moreover, trustworthiness to virtual influencers' is hard to compare to trustworthiness to human influencers. Despite of the fact that the findings showed there was a lack of trust in both types of influencers', it could be interpreted that the trust to human influencers' have been built over time. Following this logic regarding how trust appears for human influencers, trustworthiness could be an issue for virtual influencers considering the respondents interest declined quite quickly due to the lack of perceived attractiveness. Therefore, it seems unlikely they will continuously follow the virtual influencer and build trust over time. Turning to Chung and Cho (2017), they state that the endorser's openness, comprehensibility and intimacy shape trustworthiness. This could need some time to get an apprehension of, revealing how the limitation of the one-week trial when the respondents interacted with the virtual influencers could have an effect on the facilitation of PSI. Moreover, the confusion of how they function seemed to permeate the whole interaction and could disturb the comprehensibility needed to trust them. The fact that the respondents did not perceive them as open, especially Noonoouri, could also disfavor trust and subsequently PSI.

However, virtual influencers' ability to engage in the interaction allowed for some type of bond and intimacy to be created. This bond seemed to be dependent on the fact that virtual influencers was perceived to be closer when the opportunity of a direct communication was enabled. Therefore, social media's reciprocal nature is suggested to be a facilitator for PSI with virtual influencers, which is supported by the same findings with human ones (Ding & Qui, 2017). What does this mean for virtual influencers' communication with its followers? Yuksel and Labrecque (2010), argue how opportunities to like and comment on posts increases the feeling of intimacy on social media. Given they are fictive online characters, this ability to chat directly

could therefore enhance the level of intimacy than would have been possible outside this platform. For example, one respondent felt it was more worth it and fun to comment on LilMiquela compared to Kim Kardashian as she would be more likely to respond. This could be interpreted to affect attractiveness of source credibility, as it is an incitement for following them. As such, this could facilitate PSI with them considering a human influencer does not have time to nurture a dialogue in the same extent. It is therefore interpreted that their main hope to develop PSI rely on their superior ability to be an available social media communicator.

The findings clearly indicate a sense of care-taking and feelings of being seen by LilMiquela and Noonoouri, which the respondents normally lack with human influencers. When the communicator is addressing its audience, it is argued by Horton and Wohl (1956) to trigger PSI. Therefore, this could also facilitate PSI between virtual influencers and their followers. Moreover, the sense of intimacy and liking could also lead to a developed friendship (Tukachinsky, 2010). This was noticed by the respondents in the sense that a community appeared to exist around both LilMiquela and Noonoouri, where followers behaved as their loyal fans. Although, it is interpreted that this was not the case with the respondents in this study as their one-week trial was not enough to create this kind of relationship with them. At the same time, it is suggested to be hard to maintain the feeling of liking the virtual influencers' as the respondents' sensation of excitement during interaction quickly decreased when the initial curiousness had been stilled.

The overall interpretation was that the virtual influencers had a quick rise and fall in the respondents' views, and the fact that they were not interested in the long-term prohibited the development of friendship for PSI. How can this problem for interaction with virtual influencers be understood? The main implications that is suggested to prohibit the interest and potential PSI was firstly the importance of similarity in age, nationality and values. Moreover, their level of attractiveness in regard to the respondents' ability to draw inspiration from their conducted activities and brand collaborations was interpreted as significant. Further, trustworthiness is thought to be a major credibility factor for the development of PSI with virtual influencers, especially the concern of having teams behind both LilMiquela and Noonoouri. Last but not least, the responses to them being robots' and not real influencers, challenged the development of PSI, due to its obvious influence on other factors.

5.1 Empirical Model

The empirical findings indicate a clear connection between virtual robot acceptance and source credibility, where the three social-emotional factors affect three of the factors in source credibility. Source credibility in turn, is suggested to not fully enable PSI alone, as the factors in the virtual robot acceptance have been found as vital in the case of virtual influencers. Therefore, virtual robot acceptance is proposed to be a precursor for developing PSI with virtual influencers in conjunction with the three factors in source credibility: trustworthiness, attractiveness and similarity. These connections are illustrated in the empirical model below. Further, one dimension of source credibility from the analytical model, expertness, was not perceived to be an important precursor for PSI, due to split opinions in the findings as well as similarities found in the attractiveness and trustworthiness dimension. As such, it is suggested to be indifferent in regard to facilitating interaction on Instagram with virtual influencers and is therefore discarded in the empirical model.

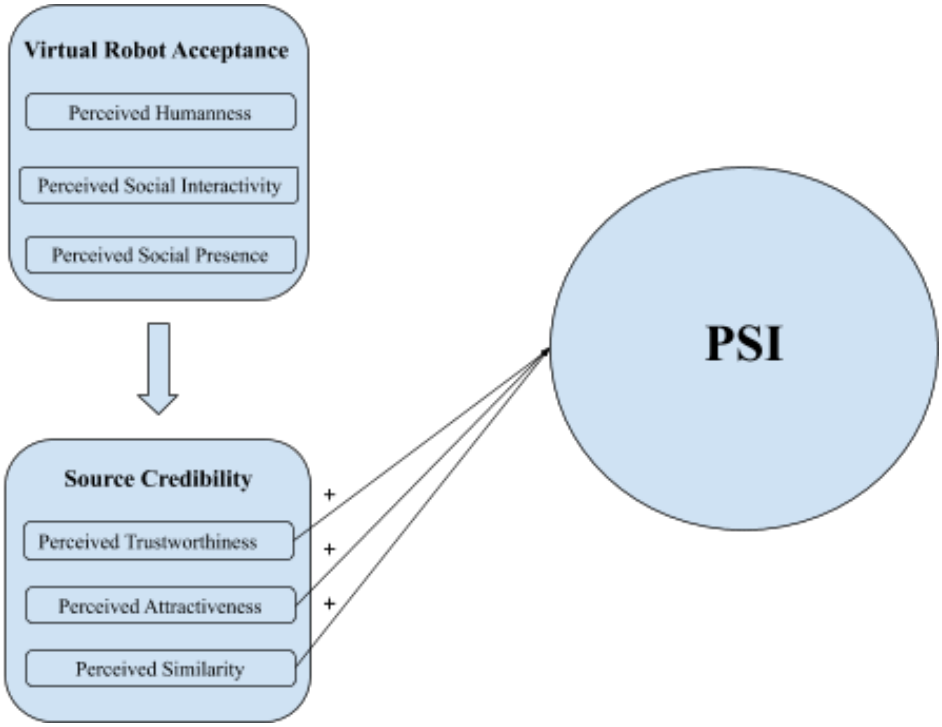

Figure 2. Updated analytical model: Empirical model.

6. Conclusion and Discussion

The purpose of this study was to explore PSI with virtual influencers through their perceived source credibility. However, to understand this the responses to them is needed to be considered. The study has shown that consumers are more inclined to interact with virtual influencers that have a stronger humanlike approach in regard to their appearance as well as in lifelike activities. This also entailed a higher trust in the virtual influencers even though a too humanlike appearance could be a problem. This response was no surprise considering previous research on robots and what is a preferred appearance. This might be due to that the reason behind fashion influencers overall, is for the follower to become inspired and influenced by their interests and appearance. Therefore, the ability to relate and see similarities between oneself and the virtual influencer proved significant in order to facilitate PSI. In addition, their humanlike appearance also affects the attractiveness of them. This stresses that the similarity and attractiveness factors of source credibility need to be consistent in order to be found credible as a virtual influencer, just as suggested in previous research on human influencers.

Moreover, the level of the attractiveness factor was decreased when the virtual influencers had too many collaborations, which was an obstacle for developing PSI. At the same time, the branded posts also decreased the trustworthiness of them, as there was not an even distribution of branded and authentic content. Trustworthiness was shown to be the major factor of source credibility in regard to PSI with virtual influencers and permeated many aspects. As trust is an important component for influencing others, this was found even more important for virtual influencers than for human influencers. One part of this is because virtual influencers stand in front of a problem concerning their inability to be credible in their expertness. Whenever they give recommendations there is an issue regarding the plausibility of them doing that, considering they are not real. This leads to a lack of trustworthiness in their opinions, which also relates to the problem of the limited transparency regarding who the actual communicator is. This itself decreases the source credibility and development of PSI. Due to the fact that virtual influencers are owned by companies, it challenges all actions made by them as these cannot be perceived as trustworthy when being initiated by an anonymous source. Today, there is a demand for transparency in society due to the availability of digital media. Not least in influencer marketing which builds on persuasiveness, transparency is required in order to be trustworthy. This reveals major challenges for virtual influencers to develop PSI in comparison to human influencers as these are not genuine accounts. As such, they are met with skepticism regarding who they actually are and whether they have another intent than to sell products.

Furthermore, another response was their superior ability to humans' in communicating in a frequent way. This enhanced the level of intimacy with virtual influencers, showing that there were tendencies into developing bonds with them. Their social presence in regard to being constantly available and care-taking of the consumers could strengthen the degree of trustworthiness and thus facilitate PSI. An emerging reason for this was suggested to be how they need to exaggerate their online presence due to their physical non-existence. Given they are stuck in a virtual universe, it forces them to prove their utility and ability to influence their followers on Instagram. At the same time, another reason could relate to the teams behind virtual influencers that are suggested to support in the delivery of frequent communication. However, as this is still unverified, it again becomes an issue of the trustworthiness of who is the one available behind the virtual influencer's Instagram account. Naturally, this also has its implications for PSI with virtual influencers, as the barrier onto interaction increases.

In addition, a response also showed that the perception of the virtual influencer's language and tone was in line with humans' way of interacting. Considering how human influencers' benefits lies in the ability to engage with their follower base, this perceived ability of the virtual influencer to do the same was appreciated and encouraged PSI. However, the remembrance of low transparency regarding whether the communication is human or AI-driven, increases at times of poor interactivity, and as such contributes to less trustworthiness. The interpretation is that there seems to be opportunities to further develop the same skills as humans' in adjusting to a larger context when using AI, especially when sensitivity and empathy is required. This follows earlier research confirmations on robots' lack of empathetic intelligence. Although, what the future holds for virtual influencers in regard to their social availability and interactivity is not known. As of right now, consumers' responses show a confusion in how the virtual influencer's communication is managed.

The factors that are of great importance and determine the degree of source credibility in interaction with virtual influencers are found to be trustworthiness, attractiveness and similarity. These are argued to be dependent on consumers' acceptance of virtual influencers in the first place. For the development of PSI to be enabled between the actors, the aforementioned three factors are thus considered to be most prominent in virtual influencers' source credibility. Expertness in turn, was found to subside into a question of trustworthiness and attractiveness when the source only exists virtually. Even if this study recognized some positive indications of the facilitation of PSI, virtual influencers cannot meet the same expectations that human influencers fulfill in regard to source credibility due to the fact that they are robots and under the ownership of a company. Therefore, it is argued to be even more of importance for virtual

influencers to be perceived as trustworthy. As such, trustworthiness is seen as having the most affect in the context of PSI with virtual influencers, along with attractiveness and similarity.

6.1 Managerial and Researcher Implications

The introduction of virtual influencers has accelerated and has been left relatively unexplored. This leaves marketing managers without much knowledge about this phenomenon and how virtual influencers are perceived by consumers on the market in contrast to human influencers. This study argues that managers should use this new marketing phenomenon with following considerations in mind:

- Managers should create/choose humanlike virtual influencers conducting lifelike activities in order to benefit their marketing campaigns on social media.
- Managers should create/choose a virtual influencer that is surrounded by transparency of the creator/communicator.
- Managers should create/choose virtual influencers who have a genuine combination of authentic content together with brand collaborations.
- Managers should create/choose virtual influencers that their target group can relate to in terms of demographics and interests.

Several researcher implications have been found in this study. Firstly, the empirical model contributes to the understanding behind the process of PSI with virtual influencers. As shown, the responses on virtual robot acceptance is a precursor for trustworthiness, attractiveness and similarity and further PSI. Therefore, the major researcher implication is the contribution to the gap in research on the responses to virtual influencers. Secondly, as Wirtz et al. (2018) only considered virtual and physical robots in their research on robot acceptance in the service industry, this study further develops the work on the acceptance of virtual influencers. Thirdly, as source credibility mostly have been researched concerning celebrity endorsement, another researcher implication is the development on this research in the matter of virtual influencers' degree of source credibility. Fourthly, as this study used Munnukka et al. (2016) earlier research on source credibility in regard to human influencers on social media, this study has shown that expertness is not an important factor for the degree of credibility concerning PSI. Fifthly, this study has identified similarities between two of Wirtz et al. (2018) social-emotional elements of virtual robot acceptance and PSI, as social presence and social interactivity are similar to the traits of PSI which have caused problems in analyzing the results of this study. Therefore, a researcher implication is to consider this when using these theories in research.

6.2 Limitations and Future Research

This study's limitations mainly concern the sampling. Firstly, the authors' interviewed Instagram users who were not original followers of virtual influencers. This means that the results are based on respondents who are not following virtual influencer by own choice but asked by the authors to follow them. This could make the data less credible and consequently reduce both theoretical and practical value of the study. Therefore, it presents the opportunity for future studies with more loyal followers as respondents. This would allow more in-depth research and as such generate new insights on the topic of consumer perceptions to virtual influencers. A second limitation is the one-week trial when the respondents followed the influencers. Naturally, perceptions on interaction and relationships with the virtual influencers can change and build over time, which advices future researchers to conduct a longer study as the limited time could have had an impact in this study.

Thirdly, the respondents were all Swedish which is a limitation since virtual influencers are more popular outside of Sweden. Additionally, the chosen virtual influencers are based abroad, which brings forward two main limitations. One of them is the fact that the results are hard to generalize to other virtual influencers or to followers of other origins. Moreover, as the virtual influencers are based elsewhere in the world, are of young age, and as mentioned not originally followed by the respondents, it introduces the problem of not being able to relate to them. This is a limitation as the study's focus was source credibility and PSI. Accordingly, as a suggestion for future research, a match between the virtual influencers and the followers could be sought to remove the problem of differing demographics.

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Appendix 1. Operationalization.

Theory	Interview Question	Reference	Purpose
Influencers and Influencer Marketing	1. Why do you follow influencers on Instagram? 2. What is important for you when following an influencer? (E.g., frequent updates, values, authenticity, attractive content). 3. Can you describe your relationship to influencers you follow? (E.g., a favorite influencer of yours).	Social media influencers are perceived to be believable, accessible and intimate when sharing personal and professional aspects of their live (Chung & Cho, 2017; Kim & Song, 2016; Schau & Gilly, 2003). Consumers trust influencers almost as much as they trust their friends and family (Hung et al., 2011).	Intends to investigate how the interviewee values human influencers on Instagram and how they perceive them.
Virtual Robot Acceptance	4. In comparison to human influencers, can you describe the experience of virtual influencers? 5. Describe the difference between the two virtual influencers that you followed, e.g., depending on their appearance and content.	In the acceptance of robots, their perceived social presence refers to how well a robot can be there for humans and create a sense of care-taking (Heerink et al., 2010). In contrast, Wirtz et al., (2018) doubt that the introduction of robots will be easily adopted by people. Referring to their lack of real emotions. Perceived humanness (...) it is recommended that robots should not look as a "synthetic human" (Duffy, 2003). This is tied to the Uncanny valley theory, which explains how there is a fine line between preferring a realistic face on an artificial human, and finding it unsettling if it looks too real	Intends to explore how consumers interpret virtual influencers and how they are used in virtual influencer marketing.

		(Mori, 1970; Tinwell et al., 2011).	
	6. How do you feel about brands using virtual influencers in their marketing?	Human influencers are seen as a credible and organic opinion leader when communicating brands products and services with its followers (De Veirman et al., 2017; Kemp et al., 2018).	
Parasocial Interaction	7. What was your impression of the ability to communicate and interact with virtual influencers on Instagram? 8. In what way did the interaction with virtual influencers made you feel seen, or maybe even special?	PSI between viewers and media personas consists of three markers: *friendship, understanding* and *identification.* PSI is triggered if the media persona addresses the viewer in the performance and adapts their communication so that the viewer feels considered *(*Horton & Wohl, 1956).	Refers to investigate how consumers perceive the interaction with virtual influencers on Instagram.
	9. In regard to virtual influencers, how would you say the interaction is similar and/or different to human influencers?	Wirtz et al. (2018) claim the acceptance of virtual robots regarding the social interactivity among people depend on their social ability and that they align with human's needs and expectations.	
	10. Do you believe that it is possible to build a relationship with a virtual influencer? Explain your thoughts about this (e.g., did you notice any relationship tendencies in them during your experience?)	Chung and Cho (2017) state that PSI with endorsers are facilitated through the use of social media and further that self-disclosure e.g., when revealing personal feelings to others, is an amplifier for developing relationships. Therefore, openness and high interactivity are antecedents for PSI (Labrecque, 2014).	

Source Credibility	11. Did virtual influencers give you any sense of credibility in their branded posts on Instagram? Explain your thoughts about this.	Lou and Yuan (2019) showed that human influencers trustworthiness, attractiveness and similarity to their followers have a positive effect on followers' trust of their posts in collaboration with brands.	
	12. How and to what degree did you felt influenced by the virtual influencers? 13. In regard to your experience, how would you say that you can relate to virtual influencers?	Lou and Yuan (2019) argue that there is a tendency of followers only following influencers that they identify themselves with. This means that the greater similarity the recipient has with the source, the greater credibility of the endorser (Bower & Landreth, 2001; Ohanian, 1990; O'Keefe, 1990). The Uncanny valley theory posits that if an artificial robot becomes similar to a human, the more it is trusted (Mori, 1970).	Refers to investigate if consumers perceive virtual influencer marketing as credible, as well as if they can identify themselves with the characters and the possible reasons for following them.
	14. Due to the fact that virtual influencers are robots, how would you interpret their perceived trustworthiness as Instagram influencers?	Trustworthiness is one of the key pillars for human influencer credibility with a strong influence on the effectiveness of advertising (De Veirman et al., 2017).	
	15. What could be a possible reason of following a virtual influencer? E.g., based on their perceived characteristics of expertise.	The use of AI intelligence in social media is argued to lead to increased capability of creating suitable content that users want to interact with (Kose & Sert, 2017). (...) Huang and Rust (2018) claim robots are quickly becoming more advanced and suggest that they possess four intelligences: mechanical, analytical, intuitive, empathetic.	

Appendix 2. Interview Guide.

- Present yourself and show gratitude towards the respondents' participation.
- Inform the respondents on the purpose of the study.
- Ask for permission to record the interview.
- Ask if they prefer to be anonymous in the study.
- Inform about the approximate interview time: 30 minutes.
- Start the interview - do not forget to ask follow-up questions to allow for discussion.

Influencers and Influencer Marketing

1. Why do you follow influencers on Instagram?

2. What is important for you when following an influencer? (E.g., frequent updates, values, authenticity, attractive content).

3. Can you describe your relationship to influencers you follow? (E.g., a favorite influencer of yours).

Virtual Robot Acceptance

4. In comparison to human influencers, can you describe the experience of virtual influencers?

5. Describe the difference between the two virtual influencers that you followed, e.g., depending on their appearance and content.

6. How do you feel about brands using virtual influencers in their marketing?

Parasocial Interaction

7. What was your impression of the ability to communicate and interact with virtual influencers on Instagram?

8. In what way did the interaction with virtual influencers made you feel seen, or maybe even special?

9. In regard to virtual influencers, how would you say the interaction is similar and/or different to human influencers?

10. Do you believe that it is possible to build a relationship with a virtual influencer? Explain your thoughts about this (e.g., did you notice any relationship tendencies in them during your experience?)

Source Credibility

11. Did virtual influencers give you any sense of credibility in their branded posts on Instagram? Explain your thoughts about this.

12. How and to what degree did you felt influenced by the virtual influencers?

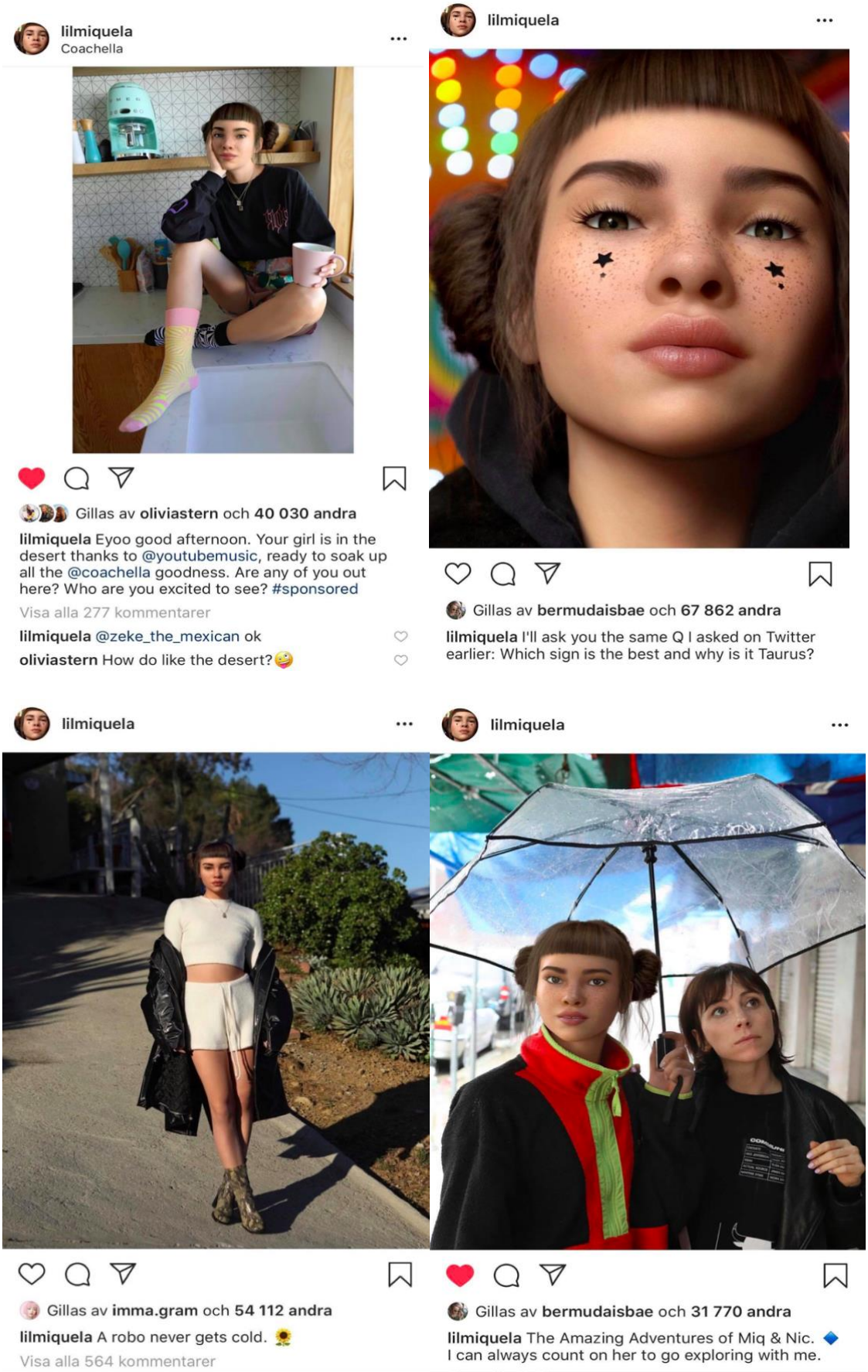
13. In regard to your experience, how would you say that you can relate to virtual influencers?

14. Due to the fact that virtual influencers are robots, how would you interpret their perceived trustworthiness as Instagram influencers?

15. What could be a possible reason of following a virtual influencer? E.g., based on their perceived characteristics of expertise.

- Ask if the respondent is OK with the fact the answers will be used in our study.
- Is there anything that the respondent would like to add?

Appendix 3. Images of @LilMiquela and @Noonoouri.



noonoouri
Le Royal Monceau - Raffles Paris

9 970 gilla-markeringar

noonoouri athleisure at home 👉 @leroyalmonceau #RoyalMonceau @gigihadid #REEBOKxGIGI #MadeForPlay sponsored #ad @reebok @reebokclassics #gigihadid #noonoouri

noonoouri
Le Royal Monceau - Raffles Paris

10 842 gilla-markeringar

noonoouri go glow-rious 💎 @lancaster_beauty #Getreadytoglow #OhMyGold #LiveWithLight👉 SWIPE sponsored ad

noonoouri

Gillas av **saramontazami** och **10 472 andra**

noonoouri found my 🌈 @leaf_greener #FindARainbowDay 👉 tag yours @miumiu #MiuMiu

noonoouri
Triennale Milano

Gillas av **vimolin** och **10 241 andra**

noonoouri literally 'triple-triennale-drama' @yoox @toiletpapermagazineofficial @federicomarchetti @mauriziocattelan

Appendix 4. Coding Scheme.

RESPONSES TO HUMAN INFLUENCERS'	EMPIRICAL FINDING	SUBCATEGORY
Human influencers and influencer marketing	"I think it is a mix between inspiration of food, clothes and especially restaurants are fun (...) When they go to trendy places... It is nice to keep up". (R2) "I don't want to get annoyed and not follow influencers' who makes me stressed. Who is too... That lives too much of a dream life. It has to be some moderation". (R8) "You get to see them develop and become successful. Like the Kardashians for example, you have seen them since they were little children and now Kylie is a millionaire and like, it is quite inspiring that they are women. It is nice to follow them (...)". (R5)	**Importance of inspiration and authenticity**
RESPONSES TO VIRTUAL ROBOTS'		
Perceived humanness	"(...) It gets weird really, because actually it is the humanlike appearance with LilMiquela and then I accept it more". (R2) "Because I almost think it's uncomfortable that she (LilMiquela), looks so real. Because the other, Noonoouri, she's not looking real, authentic. So you can differentiate them like that". (R5)	**Humanlike vs. Uncanny**
Perceived social presence	"When I followed Noonoouri and LilMiquela, it was almost that you got a closer relationship to them because… It felt like they updated more frequently, and they also answered on your comments". (R4) **"**I thought it was fun and very cool. If they had not responded as much I wouldn't think it would give as much as it did". (R4) "(...) So I think that they, the difference is that they put more effort in just because I think a regular influencer, for example Hannalicious, her interest is to take a good photo, get many likes and to make the company happy. She doesn't care so much if Jenny, 15 likes the post or not, or respond to comments etc...". (R7)	**Importance of availability**

Perceived social interactivity	"(...) I believe that the idea with virtual influencers is to interact in a humanly way". (R3) **"**When Notre dame burn down and Noonoouri commented it, a normal person would get a lot of hatred for it... You don't post that kind of picture, tag people in it, like branded clothes". (R3) "I really believe that the strength with them is to capture their audience when thinking of do my followers want purely stylistically, what I do, what I like and how I express myself, but I believe we have some sort of distance to them mentally, but that does not mean I am less inclined to follow them so to speak". (R8)	**Importance of meeting the expectations**
CREDIBILITY IN VIRTUAL INFLUENCERS'		
Trustworthiness	"Actually, you can see it as normal influencers are fake, because they are not real either. They fake their picture quite much as well". (R2) "Yeah but they do the same kind of things, they post photos, they have collaborations and they have a style, they have a brand (...) I just felt, why would this be different, that is - more different than with regular influencers that have collaborations?". (R4)	**Virtual influencers just as human influencers**
Trustworthiness	**"**But yeah, I had a problem of not thinking about the man who created her and like, how does it work, does he respond? Or is the system? Or is she her own person? Or is it him being behind all this? It is hard to leave out". (R4) "I'm critical to them both, because I knew it was a company behind. But I'm also critical to influencers overall (...) I don't know which company that is behind them, I don't know what their values are, I don't know what their opinions on collaborations - regardless of collaboration. How do their background look like? How good/bad are those companies compared to a regular influencer? (...) I guess I trust them less when there is a big company behind and not a private person". (R7)	**Unknown creator of the virtual influencer**
Attractiveness	"I want to know more because it's so sick (...) I was like, it's such an insane phenomenon so I have to follow and get to know what they are doing (...) but then when you've learnt them, then you're like, well	**Curiousness of the phenomenon**

	now I know. Then I don't have to follow". (R1)	
Attractiveness	"It was ads everywhere, all the posts had some tag and if they want to reach authenticity, they have to be more of "this is my breakfast", to capture the everyday life (...) I believe that real influencers work on this quite a lot to build a brand (...)". (R2) "The captions are a bit boring, or Noonoouri's are. Most of them are like, just tags and company... yeah it feels like it's a lot of ads (...) but with LilMiquela (...) her captions are more thoughtful, and they try to make it fun as well (...) Noonoouri feels more company-based whereas LilMiquela feels more like a regular influencer". (R6)	**Virtual influencers' collaborations**
Attractiveness	"(...) but it is almost easier to accept when it's clothes, because it only stands there like a mannequin and that is also fake. But Coachella is an experience, she cannot think anything about this really". (R2) "You entered a more exclusive world through the virtual influencers, Coachella, cool clubs. That was a little different, because for a real person it's not possible to produce that type of content that quickly. That was a big difference". (R3)	**Virtual influencers' activities**
Similarity	"(...) If a Swedish virtual influencer would appear, I would follow it". (R2) "(...) She's trendy, sort of a young teenager, and I feel I have gone past that stage of my life. So when I follow her it feels as if I'm following a child". (R6)	**Virtual influencers' profile**
Similarity	"I felt I could relate more to LilMiquela than Noonoouri because she was an avatar posting cool pictures, while LilMiquela was more like a real person who does her thing and stand up for herself (...) I can see myself in that, that you should go your own way". (R4) "(...) Because they don't wear the clothes for real either. You want to see how they look like on a real person. Bags are okay (...) but especially when it's clothes, then you're like 'ehh, how did that happen'". (R6)	**Virtual influencers' appearance**
Expertness	"(...) Clothes... I don't know if I would care if she said "this top is my go-to garment", then I would not believed it. But I would definitely be inspired to buy something if they posted something nice. But if it would have been a facial product, then I would not	*This dimension was shown not to have any prominent subcategories, due to the split opinions and similarities with the attractiveness dimension. As*

	have bought it. I almost get annoyed because of this". (R2) "(…) If it would be some robot influencer that recommended exercises or something, then I think it could be interesting". (R7)	*such, it was indifferent for the purpose of the study.*
PSI WITH VIRTUAL INFLUENCERS'	"But I actually got the impression that they responded to the questions asked, it wasn't just in general. They answered on the questions and what it thought about it, but Noonoouri who only likes your comments, I don't get the feeling of being special". (R2) "They reply to pretty much every comment, and if they didn't they 'liked' the comment so you are seen in one way or another. That was what I noticed to be the biggest difference, that this bond gets much stronger. It becomes like a friend, more than someone you look up to and monitor from afar". (R4) "You get all tingly when they liked or commented back. Then I was like, it notices me". (R5)	**Being seen as a follower**
PSI WITH VIRTUAL INFLUENCERS'	"(...) It was almost like you became friends with them. Like when I comment on something, so they could like back or even respond back". (R5) "Eh... I noticed that a lot of the comments were positive, especially on LilMiquela's there weren't so much negative responses. If someone wrote anything negative, her followers will jump to her defense and wrote like don't care about that person, you are so good, and this is so good (...)". (R7) "Because I noticed in the way they write that they want to be quite inclusive (...) I would say that they are good at addressing their followers (...) But it felt more personal to follow LilMiquela". (R8)	**Perceived friendship**

* Green = Responses to Human Influencers'
* Red = Responses to Virtual Robots'
* Blue = Credibility in Virtual Influencers'
* Purple = PSI with Virtual Influencers'