

Human vs. Virtual Influencers: Analyzing the Impact of Unnatural Sexiness on Viewers’ Hedonic Consumption

Extended Abstract

*The author will attend the **in-person** conference if this submission is accepted.

First and Corresponding Author (Presenter)

lu-Chen Lai

Affiliation: Master Student; Institute of International Business, National Cheng Kung University (Taiwan)

Mailing Address: No.1, University Road, Tainan City 701, Taiwan (R.O.C)

Phone Number: +886-0958887708

Email: R66095034@gs.ncku.edu.tw

Second Author

Ya-Hui Kuo

Affiliation: Assistant Professor; Institute of International Business, National Cheng Kung University (Taiwan)

Mailing Address: No.1, University Road, Tainan City 701, Taiwan (R.O.C)

Phone Number: +886-6-275-7575 (ext. 53507)

Email: yahuikuo@ncku.edu.tw

Human vs. Virtual Influencers: Analyzing the Impact of Unnatural Sexiness on Viewers' Hedonic Consumption

Keywords: *unnatural sexiness, human influencers, virtual influencers, hedonic consumption, consumer behavior, self-objectification, benign envy, malicious envy, influencer marketing, virtual influencer marketing, social media, Instagram*

Introduction

The use of sexualized marketing tactics by brands has become more prevalent, leading to intense competition among influencers and exaggerated, unnatural appearances. Appearance plays a crucial role in attracting followers and securing income on visually-oriented platforms like Instagram. Understanding the impact of influencer appearance is crucial for influencers, followers, consumers, and the marketing industry.

This research aims to understand how and if human influencers (HIs) and virtual influencers (VIs) can mitigate the impact of unnaturally sexy appearances on viewers or consumers. We will focus on hedonic consumption engagement, as influencers and social media platforms such as Instagram provide hedonic values, while considering the mediators of benign and malicious envy, and self-objectification, we aim to provide valuable insights into consumer behavior and influencer marketing.

Literature review and hypotheses

When hedonic is applied to consumer consumption, the enjoyment, pleasure, happiness, multi-sensory, fantasy and emotive aspects between the consumers' experience with products (Hirschman & Holbrook, 1982), and the shopping experience (Babin et al., 1994) becomes the main focus, all these aspects can be considered as hedonic consumption.

Unnatural sexiness in the context of influencer appearances can refer to as the extreme modifications and enhancements of appearance that go beyond what is considered natural (Taft, Choi, & Cosley, 2013). Such unnatural sexiness has been found to elicit negative reactions from viewers, who perceive it as ridiculous, wrong, unnatural, and unrealistic (Holmqvist & Frisén, 2012). This raises questions about the impact of unnatural sexiness influencers on viewers' hedonic consumption engagement.

Previous research has shown that exposure to excessive image filtering and manipulation on social media can lead to negative evaluations and reduced trust (Hong et al., 2020; Wood-Barcalow et al., 2010). Additionally, social media platforms like Instagram, where appearance is emphasized, can contribute to a heightened focus on extreme modifications and intense competition among HIs (Matthews, Lynch, & Martins, 2016). It is important to understand the impact of unnatural sexiness HIs and VIs on viewers' hedonic consumption engagement, as it is based on emotional well-being and pleasure (Zhong & Mitchell, 2012). Thus, hypothesis one proposed.

***H1:** Unnatural sexiness of a HI (vs VI) will lower (vs higher) consumer hedonic consumption.*

Self-objectification is a phenomenon defined by the objectification theory (Fredrickson & Roberts, 1997), where women are treated as objects and valued primarily for their physical appearance. It is influenced by factors such as sexualized media exposure, social comparison in appearance, and sexualized comments and media exposure on social media platforms like Instagram and Facebook (Karsay et al., 2017; Knoll et al., 2017; Boursier et al., 2020; Fardouly et al., 2017; Hanna et al., 2017). Studies have shown that popular Instagram influencers often post sexualized images of themselves, which can contribute to increased self-objectification among

viewers (Skowronski et al., 2021). Additionally, influencers who use artificially altered appearances have been found to heighten consumer self-objectification (Wang & Li, 2020).

While the negative effects of self-objectification caused by HIs have been extensively studied (Karsay et al., 2018; Ward, 2016), the effects of unnatural sexiness in VIs are less explored. Research on virtual game characters with idealized and exaggerated sexual appearances suggests a contrasting effect, with VIs potentially leading to improved self-body satisfaction compared to HIs (Matthews et al., 2016). This may be due to viewers perceiving the hyper-ideal sexual characters of VIs as absurd and experiencing a boost in self-esteem as a result (Downs & Smith, 2010; Lynch et al., 2016).

The indulgence in virtual worlds, the ability to have fun and escape from the real world, and the awareness of the artificial nature of VIs further suggest that viewers may feel less self-objectified by their unnatural appeal. Previous research also indicates that VI engagement fulfills the need for autonomy and increases enjoyment (Downie et al., 2008), this may indicate a pull towards increased hedonic consumption engagement. Based on these findings, the hypothesis for this study is as follows:

***H2:** Self-objectification mediates the relationship between unnatural sexiness of HI and VI, and the hedonic purchase intention. In that unnatural sexiness of HI will increase viewers' self-objectification and unnatural sexiness of VI will decrease self-objectification, and the increased self-objectification will result negatively (lower) in hedonic consumption and the decreased self-objectification will result positively (higher) in hedonic consumption.*

Envy plays a crucial role in understanding the differential effects of HIs and VIs on viewer behavior and engagement in hedonic consumption. Previous research suggests that HIs, with their relatability and human attributes, may evoke direct comparisons with viewers, especially regarding

appearance (Wyer Jr et al., 2019). When viewers perceive themselves as unable to achieve the HI's level of appearance, it can lead to malicious envy and a decreased willingness to engage in hedonic consumption.

In contrast, VIs, being virtual entities, present a unique dynamic. Mirowska and Arsenyam (2023) found that viewers perceive VIs as an escapism from reality and appreciate their offerings without the same level of resentment or direct comparison. The unnatural sexiness portrayed by VIs may be seen as too absurd or unattainable, leading to a sense of disbelief rather than direct comparison. Consequently, viewers may experience benign envy, admiring the VIs without feeling threatened or diminished in their own self-image.

This distinction in the perception of HIs and VIs regarding envy is important in understanding their effects on hedonic consumption engagement. Unnatural sexiness in HIs may trigger malicious envy, which can reduce viewers' motivation and willingness to engage in hedonic consumption activities (Loureiro, De Plaza, and Taghian, 2020). On the other hand, unnatural sexiness in VIs may evoke benign envy, which can increase viewers' admiration and desire to pursue hedonic consumption experiences (Parrott and Smith, 1993). The hypotheses are as follows.

***H3:** Benign envy mediates the relationship between unnatural sexiness of HI and VI, and the hedonic consumption engagement. In that unnatural sexiness of HI will not result in viewers' benign envy and unnatural sexiness of VI will result in viewers' benign envy, and benign envy will result positively (higher) in hedonic consumption engagement.*

***H4:** Malicious envy mediates the relationship between unnatural sexiness of HI and VI, and the hedonic consumption engagement. In that unnatural sexiness of HI will result in viewers' malicious envy and unnatural sexiness of VI will not result in viewers' malicious envy, and malicious envy will result negatively (lower) in hedonic consumption engagement.*

Methodology and results

In this study, an experiment was conducted to investigate the relationship between unnatural sexiness of HIs and VIs and consumers' hedonic consumption intentions. The study also aimed to examine the mediating role of benign envy, malicious envy, and self-objectification in this relationship.

A pretest was conducted to 6 select images of influencers, with a mix of digitally enhanced unnatural sexiness influencer images and non-enhanced influencer images with similar outfits, the influencers shown are also a mixed ethnicity that consists of African American, Caucasian and Latino. The pretest involved 30 participants through snowball sampling who rated the unnatural sexiness level of 6 influencer images on a Likert scale of 1 to 7. Based on the pretest results, three influencer images were selected for the main experiment, ensuring a similar level of perceived unnatural sexiness across both types of influencer images that are used for the main study.

A single-factor between-subjects design was employed, with participants randomly assigned to one of the two experimental conditions: unnatural sexiness HI or VI that are using the same set of images but with indication of the influencer being a human or virtual on the Instagram frame around the image. Each participant viewed an image of an influencer featuring a hedonic product (perfume).

During the main experiment, a total of 156 participants were gathered through Amazon MTurk and snowball sampling. The targeted participants are all female only and mainly reside or are American citizens.

Participants rated their levels of benign envy, malicious envy, self-objectification, and willingness to engage in hedonic consumption with adapted scales used, after viewing the

influencer image. Each participant then completed a questionnaire consisting of Likert-type scale items measuring these variables.

The term "unnatural sexiness" refers to the appearance who enhance their physical features through means such as plastic surgery or digital manipulation, resulting in a look that appears unnatural. This variable will be assessed using 3 items ($\alpha = .702$), 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Example items include "The influencer featured in the advertisement is perceived as unnaturally sexy".

Self-objectification occurs when viewers treat themselves as objects, according to the objectification theory (Fredrickson & Roberts, 1997). Self-objectification will be adapted and measured based on the newly updated Self-Objectification Beliefs and Behaviors Scale (SOBBS) (Lindner, Danielle; Tantleff-Dunn, Stacey, 2017). The scale consists of 4 items ($\alpha = .86$), with responses on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Participants will be asked to rate the degree to which they view themselves as objects after viewing the influencers' image post. Example items include " I often think about how my body must look to others ".

Benign envy is defined as a positive form of envy that motivates a person to improve their own situation. On the other hand, malicious envy is defined as a negative form of envy that involves a desire to bring others down (Johnson, 2012). Benign envy and malicious envy will be adapted and measured using the benign and malicious envy scale (BeMaS) (Lange & Crusius, 2015). The scale consists of 10 items in total, 5 benign envy ($\alpha = .95$) and 5 malicious envy ($\alpha = .95$) items, with responses on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Participants will be asked to rate the degree to which they experience benign or

malicious envy towards others. Example items include "If I notice that another person is better than me, I try to improve myself" and "I feel ill will toward people I envy".

Viewers' hedonic consumption refers to the act of consuming media or products for the purpose of achieving pleasure or enjoyment (Hirschman & Holbrook, 1982). Hedonic consumption will be measured using the adapted 6 items ($\alpha = .95$) hedonic consumption scale (Hausman, Angela, 2000), measured using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Participants will be asked to rate their intention to consume the hedonic product shown in the post, as well as the extent to which they perceive the product as pleasurable or enjoyable. Example items include "Shopping offers new experiences".

Results

The study included 156 participants, all of whom identified as female. The majority of participants were in the age range of 25-34 years old (68%), followed by 35-44 years old (13.5%). The participants predominantly identified as White (85.9%), with smaller percentages identifying as Black or African American (5.1%), Asian (5.8%), and Other (3.2%).

Manipulation Check

One sample t test was used to determine the mean score of each of the 6 images from the pre-test and 3 final images were chosen for the main study. The results showed a higher mean score for all the modified images that are shown to be unnaturally sexy compared to unmodified images that are shown to look natural. The modified images 1, 2 and 3 were statistically significant to the natural images and with higher mean scores ($M = 5.82$, $SD = 0.99$), ($M = 4.13$, $SD = 1.53$), and ($M = 5.58$, $SD = 1.33$). As for the natural images, the scores are lower for images 4, 5, and 6, with mean scores of ($M = 2.21$, $SD = 0.78$), ($M = 1.98$, $SD = 0.93$), and ($M = 1.71$, $SD = 0.75$) respectively.

Hypotheses Testing

MANOVA

A multivariate test was conducted to examine the effects of the influencer types (IV), hedonic consumption (DV), as well as the mediators, self-objectification, benign envy, and malicious envy.

The multivariate test yielded a significant effect, Pillai's Trace = .127, $F(4, 151) = 5.479$, $p < .001$, indicating that the IV had a significant multivariate effect on the set of variables. Follow-up univariate tests showed that the IV significantly affected self-objectification ($F(1, 154) = 4.115$, $p = .044$), benign envy ($F(1, 154) = 6.261$, $p = .013$), malicious envy ($F(1, 154) = 4.952$, $p = .028$), and hedonic consumption ($F(1, 154) = 6.832$, $p = .010$). More specifically, compared with HI, VI were associated with higher scores in benign envy (MVI = 4.622, MHI = 4.011), hedonic consumption (MVI = 3.230, MHI = 2.746), and lower scores in self-objectification (MVI = 4.321, MHI = 4.773) and malicious envy (MVI = 3.271, MHI = 3.872).

The multivariate test revealed a significant overall effect of the IV on the variables, indicating that influencer types had a statistically significant impact on the variables of self-objectification, benign envy, malicious envy, and hedonic consumption (Wilks' Lambda = .873, $F(4, 151) = 5.479$, $p < .001$). Further analyses using Hotelling's Trace ($F(4, 151) = 5.479$, $p < .001$) and Roy's Largest Root ($F(4, 151) = 5.479$, $p < .001$) supported the significant multivariate effect. These findings suggest that the IV has a significant effect on the DV as well as the individual mediators.

UNIVARIATE ANOVA

A total of three univariate ANOVA analyses were performed. The first analysis explored the effects of influencer types and self-objectification on hedonic consumption. The results

revealed that influencer types ($F(1, 33.346) = 12.120, p = .001$) and self-objectification ($F(24, 21.644) = 2.831, p = .009$) had significant main effects on hedonic consumption but their interaction was not significant ($F(19, 111) = 1.084, p = .376$).

The second analysis investigated the effects of influencer types and benign envy on hedonic consumption. The results showed that only benign envy had significant effects on hedonic consumption ($F(28, 21.988) = 9.800, p < .001$). Influencer type did not have a significant main effect on hedonic consumption ($F(1, 37.549) = 1.661, p = .205$). Similarly, the interaction was also not significant ($F(21, 105) = 0.802, p = .711$).

The third analysis examined the effects of influencer types and malicious envy on hedonic consumption. The results indicated that influencer type had significant main effects on hedonic consumption ($F(1, 30.023) = 8.372, p = .007$), suggesting it was a significant predictor. Malicious envy did not significantly influence hedonic consumption ($F(27, 22.974) = 1.769, p = .084$). Similarly, the interaction was also not significant ($F(22, 105) = 1.091, p = .369$).

PROCESS macro

In addition to these preliminary tests, the mediation analysis was conducted by using PROCESS Model 4 (Hayes, 2013) with 5,000 bootstrap resampling, with hedonic consumption as the dependent variable, influencer types (1 = HI, 2 = VI) as the independent variable, self-objectification, benign envy, and malicious envy as the parallel mediators.

Regarding hypothesis 1, the direct effect of influencer types on hedonic consumption was significant ($b = .2585, SE = .1302, p = .0489$), as virtual influencer led to higher level of hedonic consumption than did human influencer. Hypothesis 1 was fully supported by the data.

For hypothesis 2, a significant relationship was found between influencer types and self-objectification ($b = -0.4523, SE = .2230, p = .044$). The negative coefficient indicates that virtual

influencers are associated with lower levels of self-objectification compared to human influencers. However, the relationship between self-objectification and hedonic consumption was not significant ($b = .0048$, $SE = .0578$, $p = .400$). The indirect effect of influencer types on hedonic consumption through self-objectification was also not significant ($b = -0.0220$, $SE = .0344$, 95% CI [-0.0988, 0.0426]). Therefore, hypothesis 2 is rejected, as the mediating effect of self-objectification was not supported.

In relation to hypothesis 3, the relationship between influencer types and benign envy was significant ($b = 0.6116$, $SE = .2444$, $p = .013$). The positive coefficient indicates that virtual influencers are associated with higher levels of benign envy, which in turn leads to increased hedonic consumption. The indirect effect was ($b = -.0615$, $SE = .0474$, 95% CI [-0.1699, 0.0081]). Hence, hypothesis 3 was fully supported by the data.

Lastly, for hypothesis 4, the results demonstrated a significant relationship between influencer types and malicious envy ($b = -.6004$, $SE = .2698$, $p = .027$). The negative coefficient indicates that virtual influencers are associated with lower levels of malicious envy compared to human influencers. The relationship between malicious envy and hedonic consumption is also significant ($b = .1024$, $SE = .0477$, $p = .033$). The results also showed that the indirect effect of influencer types on hedonic consumption through malicious envy was not significant ($b = -0.0615$, $SE = .0472$, 95% CI [-0.1744, 0.0096]). Therefore, hypothesis 4 is rejected, as there is no evidence to suggest that malicious envy mediates the relationship between influencer types and hedonic consumption.

To explore the role of age groups, a second PROCESS macro test was conducted with age groups as a control variable in the mediation model. The findings demonstrated that age did not substantially alter the observed pattern of results regarding the relationships among the variables

of interest. However, age did play a significant role in the relationship between influencer types and benign envy ($b = -.4738$, $SE = .1300$, $p = .0004$). This suggests that the relationship between influencer types and benign envy varied across different age groups.

Discussion

The findings revealed some interesting insights. Participants who followed unnatural sexiness VI, reported higher levels of engagement in hedonic consumption compared to those who followed HI. This suggests that VI have a stronger influence on consumers' desire for pleasurable experiences. This result may be in line with previous studies that shows virtual characters creates a sense of escapism for viewers, leading to a type of hedonic consumption engagement (Mirowska and Arsenyan, 2023).

This study also found that participants who followed VI experienced lower levels of self-objectification compared to those who followed HI. This means that VI helped consumers feel less pressure to conform to societal beauty standards.

Additionally, participants who followed VI felt a positive form of envy called benign envy, which increased their engagement in hedonic consumption activities and extends upon the previous study by Ahn et al., (2015). On the other hand, those who followed HI felt a negative form of envy called malicious envy.

The insignificance of the self-objectification mediator can be attributed to several factors. Firstly, research has demonstrated that women who self-objectify tend to prioritize beauty over comfort, often resorting to procedures like plastic surgery and enduring discomfort, such as wearing high heels, in order to enhance their appearance (Winn & Cornelius, 2020; Felig et al., 2022). They may disregard psychological cues and ignore the negative implications for their well-being. It would be valuable to conduct further research to investigate the potential outcomes when

self-objectified individuals become aware of their negative well-being state and cease direct comparisons with influencers.

Secondly, social media platforms have normalized self-objectification, leading consumers to further engage in consumptive behavior (Winn & Cornelius, 2020). This normalization contributes to the perpetuation of self-objectification and its negative consequences. Understanding the influence of social media on self-objectification can provide insights into developing strategies to address this issue.

Regarding malicious envy one possible explanation for this discrepancy is that viewers still seek to engage in hedonic experiences and offerings by the influencer to observe their failures. This form of hedonic consumption may cease when the influencer meets the consumer's expectations of failure, or it may be redirected toward another influencer. Thus, the effect of hedonic consumption on a specific unnatural sexiness influencer focused is likely to be short-term. Exploring the long-term effects of such consumption patterns would be a valuable area for future research.

Theoretical Contribution

Firstly, this study takes a distinct approach by focusing on the effects of unnaturally sexy appearances exhibited by HIs and VIs, in contrast to previous research that has examined the influence of social media influencers promoting a luxurious lifestyle and materialistic values on hedonic shopping motivations (Chae, 2018; Jin et al., 2019).

Secondly, this study adds to the literature on self-objectification by examining the impact of unnatural sexiness portrayed by HIs and VIs on viewer self-objectification. Previous research has established that exposure to sexualized influencers and social media environments increases self-objectification among viewers (Skowronski et al., 2021).

Thirdly, this study contributes to the literature on envy by examining the different forms of envy that can be elicited by unnatural sexiness HIs and VIs. Prior research has shown that HIs may evoke malicious envy when their appearance enhancements are perceived as unattainable or achieved through unconventional means (Pila et al., 2014).

Lastly, this paper offers valuable theoretical contributions by synthesizing research from multiple fields, including plastic surgery, digital enhancements, social media, online consumption, influencers, and virtual characters. This study advances our understanding of the complex interplay between these factors and their implications for audience responses. It brings together diverse areas of research, enriching the theoretical foundation and opening avenues for further exploration in this domain.

Managerial Implications

The significant difference in hedonic consumption between participants exposed to VIs and HIs highlights the need for marketers to consider the use of VIs in their influencer marketing strategies. Virtual influencers have shown a stronger influence on hedonic consumption, indicating their potential in engaging and persuading consumers. Marketers should consider partnering with virtual influencers to create captivating and compelling content that resonates with their target audience, especially with hedonic products.

One notable advantage is that unnaturally sexy VIs have the ability to captivate viewers without eliciting negative emotions such as self-objectification and envy. This is particularly beneficial in marketing efforts where the appearance of influencers plays a significant role. By avoiding these negative emotional responses, brands can create a more positive and enjoyable viewing experience for their target audience.

The mediating role of benign envy suggests that marketers can leverage envy as a motivational factor in driving consumer behavior. By creating content that elicits benign envy, marketers can stimulate consumers' desire for hedonic consumption. This can be achieved by showcasing aspirational lifestyles, exclusive experiences, and desirable products in collaboration with virtual influencers. Marketers should carefully craft influencer campaigns that evoke benign envy while maintaining authenticity and ethical considerations.

Moreover, the limited impact of self-objectification and malicious envy implies that marketers should focus their attention on factors other than these variables when designing influencer marketing strategies. Marketers should explore additional variables, such as other emotional triggers that are more likely to influence consumer behavior. This requires a deeper understanding of the target audience and their specific motivations.

Limitations and Future Research

Future studies could further investigate the concept of self-objectification by exploring the role of pre-existing levels of self-objectification among participants. While this study focused on the immediate effects of influencer images on self-objectification, it would be valuable to examine whether individuals with higher levels of self-objectification prior to the study experience different responses.

Furthermore, considering the rapid evolution of technology and the influencer landscape, future research should explore emerging trends in influencer marketing. For example, investigating the effects of new types of influencers, such as AI-generated and live AI influencer interactions, could provide insights into their impact on consumer behavior.

Future studies can examine the influence of age and gender on consumers' responses to influencers and their impact on hedonic consumption. Age-related research suggests that older

individuals may experience less envy (Henniger & Harris, 2015), which has implications for targeting specific age groups with unnatural sexiness influencers and envy-driven marketing strategies. Additionally, considering another gender as a variable can further expand our understanding of the interplay between influencers and consumer behavior.

Culture and ethnicity are influential factors that warrant further investigation in the context of influencer marketing. Even though this study used 3 different influencer images consisting of different ethnicities, the gathered participants were mainly Caucasians in America, thus it leaves room for future research.

In addition, different social media platforms outside of Instagram such as TikTok can also be explored. By considering participants' social media habits, exposure levels, and familiarity with influencer culture, researchers can uncover nuanced insights into the psychological and emotional effects of influencer marketing on different platform exposures.

Future studies could also explore the effects of influencer marketing on hedonic consumption across various endorsed products or industries. While this study focused on the effects of influencers endorsing a perfume product, it would be valuable to investigate whether similar effects emerge when influencers endorse different types of products.

Lastly, additional research could seek to understand the reasons for the insignificant relationships by exploring potential moderating factors or alternative explanations. Replication studies conducted in different contexts or with larger sample sizes would help establish a more robust understanding of the relationship between influencer types.