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Master Program in Information Management

HOW SOCIAL MEDIA ADVERTISING IMPACTS MENTAL HEALTH

A Comparative Study of Organic and Sponsored Content on Instagram

Sofia Claudino Duarte

Dissertation presented as partial requirement for obtaining the Master's degree in Information Management

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February 2023

ABSTRACT

Despite being an immensely powerful source of social influence, the increasing use of social media has raised questions about the imminent impact on users' subjective well-being, due to the quantity and quality of social relationships. Recent research has uncovered that excessive engagement in social media networks are often linked to detrimental effects on psychological health, such as loneliness, anxiety and depression. The proposed study contributes to filling a gap regarding the connection of social media advertising with mental health. Particularly by drawing from influencer authenticity and credibility attributes, and the effect of social comparison on Instagram users' psychological well-being. An online survey was conducted with a total of 99 participants. This study demonstrated that influencers' authenticity and credibility attributes positively affect users' mental health status. Additionally, it revealed that influencer authenticity affects social comparison, with users comparing themselves to the influencer more favorably when presented with organic (authentic) content. The association between influencer authenticity and mental health was also shown to be mediated by social comparison, which has a negative effect on users' mental well-being. The findings extend previous research on influencer attributes, linking influencer authenticity with social comparison, which allows a clearer understanding of how social media advertising affects users' mental health.

KEYWORDS

Keywords: social media, social media marketing, influencers, social comparison, mental health

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1. INTRODUCTION

Influencer marketing has been a successful marketing tool in shaping customers' attitudes and purchase decisions (Bazi, Filieri, & Gorton, 2020; Yu-ting Chang, Yu, & Lu, 2015; Mcgaughey, Freberg, & Freberg, 2011), and the omni-presence of social media has expanded the attractiveness and approachability of this method (Appel et al., 2020).

Social media advertising plays a big role in influencing consumer behavior (Rinka & Pratt, 2018), and brands have long been relying on celebrities and/or social media endorsements to build trust (Carroll, 2009; Spry, Pappu, & Cornwell, 2011). Consumers often engage in online communities to minimize information seeking and perceived risk (Brodie, Ilic, Juric, & Hollebeek, 2013).

Research conducted on social media influencers has focused on credibility (Hayes & Carr, 2015; Kapitan & Silvera, 2016; Lou & Yuan, 2019; Magno & Cassia, 2018; Wiedmann & von Mettenheim, 2020) and authenticity (Audrezet, De Kerviler, & Moulard, 2020; Jiménez-Barreto, Rubio, Campo, & Molinillo, 2020; Luoma-aho, Pirttimäki, Maity, Munnukka, & Reinikainen, 2019; Pöyry, Pelkonen, Naumanen, & Laaksonen, 2019; Weismueller, Harrigan, Wang, & Soutar, 2020; Wellman, Stoldt, Tully, & Ekdale, 2020). In marketing literature, a celebrity is perceived as authentic if he or she is viewed as genuine, real and honest (Ilicic & Webster, 2016; Kowalczyk & Pounders, 2016; Moulard, Garrity, & Rice, 2015; van Leeuwen, 2001). Influencers are considered authentic when they provide fact-based information in their posts (Audrezet et al., 2020) and when they are perceived as sociable and accessible by their following (Ilicic & Webster, 2014; Preece, 2015).

According to the credibility (McGuire, 1985) and attractiveness (McGuire, 1985) models, expertise, trustworthiness and attractiveness are important attributes that influence the persuasiveness of the endorser.

Social media is an immensely powerful source of social influence that intends to reach large numbers of people, by enabling people to be actively engaged in the communication and staying connected with individuals and personalities they care about (Clement et al., 2013; Rainie, Purcell, & Smith, 2011). However, despite its many positive and enjoyable benefits, the increasing use of social media has raised questions about the imminent impact on users' subjective well-being, due to the quantity and quality of social relationships (Karim, Oyewande, Abdalla, Ehsanullah, & Khan, 2020; Martinsen, 2008). Recent research has uncovered that while self-disclosure and active interaction may be associated with a positive mental state and better well-being, excessive engagement in social media networks are often linked to detrimental effects on the psychological health of its users, such as loneliness, anxiety and depression (Hunt, Marx, Lipson, & Young, 2018; Karim et al., 2020; Liu, Baumeister, Yang, & Hu, 2019; Reer, Tang, & Quandt, 2019; Vahedi & Zannella, 2019). According to Karim et al.'s (2020) review of studies connecting social media use to mental health, anxiety and depression were the most frequently measured outcomes considering prominent risk factors such as time spent, activity, and addiction to social media.

The proposed study contributes to filling a gap regarding the connection of social media advertising with mental health. Particularly by drawing from influencer authenticity and credibility attributes, through a conceptual model that broadens Ohanian's (1990) integrated model having the source credibility model (Hovland, Janis, & Kelley, 1953), the source attractiveness model (McGuire, 1985) and all of its three attractiveness attributes. Hovland, Janis, & Kelley's (1953) source credibility and McGuire's (1985) source attractiveness provide further attributes that are responsible for the communication effectiveness of influencers. Because a credible message is influential, many individuals and brands place great importance on establishing and maintaining credibility

(Pornpitakpan, 2004). According to the credibility model, expertise and trustworthiness are important attributes that influence the persuasiveness of a communicator (Hovland et al., 1953). While trustworthiness reflects the honesty, dependability, and genuineness of the endorser (Ohanian, 1990), expertise refers to viewing a source as qualified, professional, and knowledgeable (Serban, 2010). Finally, attractiveness is elicited when the influencer appears similar, familiar, or likable, and it can be associated with personality traits, lifestyle, intellectuality, or athletic ability (Erdogan, 1999), therefore not only implying the physical attractiveness of the influencer (Wiedmann & von Mettenheim, 2020).
Moreover, we examine the conceptual model regarding the extent to which the six attributes of influencers (authenticity, expertise, trustworthiness, attractiveness, familiarity, similarity, and likability) impact Instagram users' risk of suffering from mental health issues, such as depression, anxiety, and antisocial behavior.
Studies have found that social networking sites (SNSs) can lead to psychological poor well-being due to hostile social comparison (Krasnova, Wenninger, Widjaja, & Buxmann, 2013; Verduyn et al., 2015). Given the crescent SNS use, Vogel et al. (2014) have proposed that most of the social comparative information that users obtain in their everyday life tends in a positive (upward comparison) way, which over time, has a negative impact on the self-esteem and well-being of individuals (Schmuck, Karsay, Matthes, & Stevic, 2019). Chronic or intermittent exposure to social comparison information on social media, primarily directed upward, could adversely affect users (Vogel, Rose, Roberts, & Eckles, 2014). Social comparison is directly associated with the fear of missing out and depression due to rumination and a negative self-worth, self-evaluations and self-esteem (Burnell, George, Vollet, Ehrenreich, & Underwood, 2019; Feinstein et al., 2013). Thus, this study aims at exploring the impact of influencers' attributes of credibility and authenticity on users' mental health state through social comparison.

2. LITERATURE REVIEW

2.1. SOCIAL MEDIA AND MENTAL HEALTH

Social media are Internet-based applications, which allow users the ability to communicate, collaborate and share opinions (Kaplan & Haenlein, 2010; Safko & Brake, 2009).
Besides allowing individuals to communicate with each other, social media can convey information quickly and easily, such as in the case of health emergencies (Merchant, Elmer, & Lurie, 2011). It has been well documented that social media is a powerful tool for enabling people to be actively engaged in the communication and staying connected with individuals and personalities they care about, establishing itself as an immensely powerful source of social influence that intends to reach large numbers of people (Clement et al., 2013; Rainie et al., 2011). Especially for young adults and teenagers, social media plays an important role that connect them to friends, acquaintances, and popular culture, along with traditional and influencer product marketing. These connections can shape both attitudes and behaviors, especially among young people who learn by observing others (Bandura & Walters, 1977; Cho, Li, Shen, & Cannon, 2019).
From a consumerism standpoint, information on social media offers efficiency, convenience, a wider choice of products and services, competitive prices and product variety as advantages (Bayo-Moriones & Lera-López, 2007).
Social media is gradually becoming part of people's everyday activities; many of them spend hours each day on one or more social media platforms (Karim et al., 2020). The mix of networks has changed significantly over time. There are various social media platforms such as Instagram, Facebook, Twitter and YouTube. Among the most popular SNSs, Instagram stood out for having continued to attract more use ever since 2014 up until 2021, alongside TikTok and WhatsApp. The number of social media users worldwide in 2021 was 4.59 billion, of which 1.21 billion are Instagram users (Dixon, 2022). When using Instagram, people pay the most attention (34%) to personalities, such as celebrities and influencers (Newman et al., 2021).
Although social media has many positive and enjoyable benefits, it can also lead to mental health problems due to the quantity and quality of social relationships (Karim et al., 2020; Martinsen, 2008). Thus, the impact of social media and applications on various aspects of people's lives is being widely studied by researchers and scholars (Purgat, Filimon, & Kiygi-Calli, 2017). According to (Karim et al., 2020), after reviewing 16 studies connecting social media use to mental health, anxiety and depression were the most frequently measured outcomes considering prominent risk factors such as time spent, activity, and addiction to social media. Facebook and Instagram use have been found to positively correlate with symptoms of depression (Donnelly & Kuss, 2016; Lup, Trub, & Rosenthal, 2015; Rosen, Whaling, Rab, Carrier, & Cheever, 2013; Tandoc, Ferrucci, & Duffy, 2015). Greater Facebook use seems to be connected to lower self-esteem and loneliness (Kalpidou, Costin, & Morris, 2011), while higher Instagram use correlates with body image problems (Tiggemann & Slater, 2013).
Nowadays, anxiety is one of the most common mental health problems, and in this context can arise from the fear of loss, which causes youth to check social media on a regular basis. Differently, depression is connected to one of the inadvertent psychological implications of unnecessary use of social media platforms (Karim et al., 2020).

One theory that might explain how sedentary behavior promoted by social media affects mental health is that of displaced behavior (Strickland, 2014). Individuals who spend more time in sedentary

activities, promoted by social media use, have less time for face-to-face social interaction and physical activity, both of which have been shown to protect against mental health disorders (Martinsen, 2008; Teychenne, Ball, & Salmon, 2008). Thus, it is not the use of social media per se that negatively impacts mental health, but rather the lack of other activities. Not surprisingly, various studies have found an inverse relationship between sedentary behavior and physical activity (Sugiyama, Healy, Dunstan, Salmon, & Owen, 2008; Sugiyama, Salmon, Dunstan, Bauman, & Owen, 2007), and that a lack of physical exercise is linked with both lifelong depressive disorders and lifelong comorbid anxiety and depressive disorders (Strine et al., 2008).

Hunt et al. (2018) has suggested that for improved mental health and well-being, one should limit their daily social media use on cell phones to about 30 minutes. This three-week long experiment led to decreased symptoms of anxiety, loneliness and depression; however, the subjects did not display significant enhancement in social support, self-esteem or psychological well-being. Possibly due to the duration of the intervention being either too long or not long enough to cause positive changes in these measurements (Hunt et al., 2018). This suggests that users' online activity is not the only factor affecting their mental health. The type of content users are exposed to may also have an effect on their self-esteem and general psychological well-being through social comparison with the influencers who appear on their social media feeds.

2.1.1. Instagram Advertising

Instagram was established in 2010 (Bergström & Bäckman, 2013) and it is a photo- and video-sharing application and social network, that allows users share this content with their followers (Dubovik, 2013). As we move from the traditional marketing strategy to social media marketing, many companies started to promote their brands through many SNSs. Instagram can be a powerful tool in electronic word-of-mouth (e-WOM), since it is essentially a visual platform that allows products to be featured and named in captions that can direct users to the advertiser's other social media and websites (De Veirman, Cauberghe, & Hudders, 2017). This allows the advertiser to engage with the consumers, who can in turn connect with the brand (Dessart, Veloutsou, & Morgan-thomas, 2015).
Given people's busy lives, many customers would rather be looking at visual advertising, such as pictures and videos instead of reading text. The popularity of Instagram is constantly growing, not only among young adults but also in the business industry, making it one of the SNSs to fit the marketing strategy (Huey & Yazdanifard, 2014).
Social media marketing is focused on facilitating, promoting and supporting behavioral changes among target audiences (French, 2009). Overall, audience members may be more involved in the process of developing and implementing the social marketing plan, as well as engaging in desired behavior change, because it is something they care about. Social media, if used correctly, may help organizations increase their capacity for putting the consumer at the focus of the social marketing process (Thackeray, Neiger, & Keller, 2012). Social media advertising plays a big role in influencing consumer behavior, thus arising as a major element in social media campaigns (Rinka & Pratt, 2018). Studies have looked at consumer engagement as a result of social media marketing. A study by Syrdal & Briggs, (2018) suggested considering user engagement as a psychological state and separate from interactive behavior, which includes liking and sharing posts.

Additional research suggests that consumers engage in online communities to minimize information seeking and perceived risk (Brodie et al., 2013). One important feature of social media consumer engagement is a trigger for purchase intentions and decisions (Brodie et al., 2013; Malthouse, Calder, Kim, & Vandenbosch, 2016), as it enables interactions between consumers and brands (Zaglia, 2013). Furthermore, it could potentially be a game changer regarding people's mental health.

The emergence and increase in popularity of new social media platforms, represents both opportunities and challenges for social media marketing. Thus, there may be fluctuating potentiality for brands to interact with individuals, which requires an effort from social media marketing managers to learn and adapt to use the platform to reach consumers in an effective way (Dwivedi et al., 2020).

2.1.2. Influencer Marketing on Social Media

Marketers are constantly competing to grab consumers' brand attention, interest, preference and engagement (Udo & Nwulu, 2015). In order to reach brand advertising goals, marketers resort to several media and channel options, one of which is the use of celebrity brand communicators or endorsers (Chan, Ng, & Luk, 2013). From a marketing perspective, the omni-presence of social media in our everyday life subjects the consumer's decision-making process is to social media influence (Appel et al., 2020).

Social media influencers are personalities known for their ability to influence the opinions, reactions and behaviors of others by promoting and recommending brands and market offerings on social media platforms (Dwivedi et al., 2020). Godey et al., (2016) describe social media influencers as opinion leaders who are well-informed and have the power to influence consumer attitudes, decisions, and behavior in their social media circles. Using celebrities or well-known personalities, whether for consumer or business markets, is a popular marketing strategy (Knoll & Matthes, 2017). And the omni-presence of social media has expanded the attractiveness and approachability of this method (Appel et al., 2020). Consumer engagement with a brand can be better fostered through social media influencers, whose posts regarding brand are more likely to be seen as electronic word of mouth (e-WOM), which is considered more credible (De Veirman et al., 2017). Plus, influencers' brand comments are perceived as more authentic and credible to their followers, making them less likely to resist brand communication (de Vries, Gensler, & Leeflang, 2012).

While major celebrities are eligible as influencers for leading brands, smaller businesses usually opt for the popularity of lesser-known personalities, referred to as 'micro-influencers', to capitalize (Appel et al., 2020). These individuals are often perceived as having a high credibility in what they share on social media, encouraging others to view and engage with the content they create. In addition, partnering with these influencers allows the brand to tell the story in the first person, which is perceived as more intimate and thus makes it more efficient to engage customers (Chang, Li, Yan, & Kumar, 2019; Gupta & Mahajan, 2019). Some studies claim that marketers leverage the influence and reach of influencers' many followers on social media to build brand awareness, recognition and trust (Pophal, 2016; Shan, Chen, & Lin, 2019)

Influencer marketing has been a successful marketing tool in shaping customers' attitudes and purchase decisions (Bazi et al., 2020; Yu-ting Chang et al., 2015; Mcgaughey et al., 2011), gaining greater importance in social media campaigns (Ong & Ito, 2019; Xu & Pratt, 2018). Today, Instagram users are relying on influencers more than ever. One problem that concerns marketers regarding this matter is that of the declining organic reach, which refers to the total of people who have viewed the

publication at no cost to the marketer (Tuten & Solomon, 2018). The sharing of paid promotional posts by social media influencers is treated as commercial sponsorships (Dwivedi et al., 2020).

2.2. Social Media Influencers' Authenticity and Credibility

Research conducted on social media influencers has focused on credibility (Hayes & Carr, 2015; Kapitan & Silvera, 2016; Lou & Yuan, 2019; Magno & Cassia, 2018; Wiedmann & von Mettenheim, 2020) and authenticity (Audrezet et al., 2020; Jiménez-Barreto et al., 2020; Luoma-aho et al., 2019; Pöyry et al., 2019; Weismueller et al., 2020; Wellman et al., 2020). Authenticity and credibility attributes are of great importance for positive consumer outcomes, like purchasing and brand attitude (De Veirman et al., 2017; Pöyry et al., 2019).

According to van Leeuwen (2001) authenticity is the notion of "being true to the self in terms of an individual's thoughts, feelings, and behaviors reflecting their true identity". Despite being relatively new to discussions (Ilicic & Webster, 2016), the concept of celebrities' authenticity has been explored by several studies (Ilicic & Webster, 2014; Moulard et al., 2015; Preece, 2015). In marketing literature, people tend to perceive a celebrity as authentic if the other person is viewed as genuine, real and honest (Ilicic & Webster, 2016; Kowalczyk & Pounders, 2016; Moulard et al., 2015; van Leeuwen, 2001). Recently, literature has begun to examine the authenticity of influencers (Audrezet et al., 2017, 2020; Gannon & Prothero, 2016; Luoma-aho et al., 2019).

Influencers are considered authentic when they provide fact-based information about products or services (Audrezet et al., 2020) and when they seem sociable and accessible to their audience (Ilicic & Webster, 2014; Preece, 2015). Recent studies have shown that influencers are more effective than mainstream celebrities (Djafarova & Rushworth, 2017; Jin, Muqaddam, & Ryu, 2019), due to their apparent sociability (Jin et al., 2019). The contents posted by influencers on social media also impact authenticity. Their perceived authenticity increases when they share emotional stories with their audience, such as life experiences, as this content is emotionally connected to "self-expression" rather than just to please their audience (Audrezet et al., 2017). Furthermore, authenticity can be enhanced when posts are driven by the influencers' inner ambitions and passions and not just by promotional and commercial goals (Audrezet et al., 2020), which can lead to social media users view their posts as unauthentic (Beverland & Farrelly, 2010), or sponsored (Audrezet et al., 2020). Disclosing brand sponsorships in their posts (Kim & Kim, 2020), may give viewers the impression that these influencer endorsements are made solely for monetary benefits (Kozinets, Valck, Wojnicki, & Wilner, 2010; Luoma-aho et al., 2019). Thus, it can be postulated that:

H1: Instagram users' perception of influencers' authenticity impacts their mental health.

Nonetheless, there are other attributes attracting followers to Instagram influencers. In addition to authenticity, source credibility will also be addressed as an important feature of the endorser's posts. O'Keefe (1990, p. 181) defines source credibility as "judgments made by a perceiver... concerning the believability of a communicator''. Brands have long been relying on celebrities and/or social media endorsements to build trust (Carroll, 2009; Spry et al., 2011). Sülflow et al.'s (2019) eye-tracking results revealed that users notice the source for deciding to read or skip a news article, and thus spend more time reading posts from sources with from sources with high credibility rather than from sources with

low credibility. It is implied that credible sources increase interest in a post because users expect to come across trustworthy, important, and accurate information.
Hovland, Janis, & Kelley's (1953) source credibility and McGuire's (1985) source attractiveness provide further attributes that are responsible for the communication effectiveness of influencers. According to the credibility model, expertise and trustworthiness are important attributes that influence the persuasiveness of a communicator (Hovland et al., 1953). Ohanian's (1990) source credibility model combined Hovland et al.'s (1953) source credibility model and McGuire's (1985) source attractiveness model, however it measured only one dimension of attractiveness – physical attractiveness (Duh & Thabethe, 2021). The attractiveness model states that familiarity, similarity and likeability are the most important attributes of the influencer that guarantee advertising effectiveness (McGuire, 1985). Although the integrated model by Ohanian (1990) has previously been studied in a social media context by Seiler & Kucza (2017), they too failed to examine all three dimensions of attractiveness. Thus, the credibility of influencers can be assessed by (1) trustworthiness, (2) expertise, (3) physical attractiveness, (4) familiarity, (5) similarity and (6) likability. Trustworthiness reflects the honesty, dependability, and genuineness of the endorser (Ohanian, 1990). A trustworthy influencer provides sincere product recommendations and reviews (Wang, Wei, & Teo, 2007), from the user's point of view. Similarly, expertise is "the extent to which a communicator is perceived to be a source of valid assertions" (Erdogan, 1999, p. 298), and its perception is augmented when the source is viewed as qualified, professional, and knowledgeable (Serban, 2010). Finally, attractiveness was suggested to improve attitudes towards the social influencer (Bazi et al., 2020; Chae, 2018; Kapitan & Silvera, 2016; Lou & Yuan, 2019; Taillon, Mueller, Kowalczyk, & Jones, 2020). Attractiveness refers not only to the physical attractiveness of the influencer (Wiedmann & von Mettenheim, 2020) being elicited when the influencer appears similar, familiar or likable. It can be associated with personality traits, lifestyle, intellectuality or athletic ability (Erdogan, 1999).
Ergo, it can be inferred that:

H2: Instagram users' perception of influencers' credibility impacts their mental health.

2.3. SOCIAL COMPARISON AND AUTHENTICITY

There are no studies yet linking influencer's authenticity to social comparison. Prior studies in this field are limited to exploring the interplay between social media use, social comparison, self-esteem and depression (Chae, 2018; Vogel et al., 2014; Wang, Wang, Gaskin, & Hawk, 2017). Therefore, we will extend the social comparison literature to the authenticity of the influencer.
The present investigation aims at understanding how social comparison is impacted based on influencers' authenticity. The social comparison theory (Festinger, 1954) postulates that humans have a basic instinct to compare themselves with others in order to evaluate their own abilities and opinions. Social media use usually leads to upward social comparison and thus negatively affecting the individual's perceived social support, i.e., their friends, family, and influencers. In this context, upward comparison is a phenomenon that ensues when social media users compare themselves to someone they perceive as being superior (Wheeler, 1966), as opposed to downward comparison, which is defined by a comparison to someone they perceived as inferior (Wills, 1981). It has been suggested that upward social comparisons are inherently more likely to elicit negative feelings (Buunk & Gibbons, 2006). According to Schmuck et al. (2019), Facebook use anticipates upward social comparison, that

bears harmful effects on users' self-esteem and psychological well-being, whilst Instagram users experience a direct deleterious effect on their psychological well-being.
Authenticity is associated with the self; specifically, it reflects the true self of consumers (Arnould & Price, 2000). Most social media users perceive influencers as a means to uncover their own identity, the "extended self" (Belk, 2013). This requirement is met when users view the personality of influencers as being similar to the that of their followers (Belk, 2013; Ki, Cuevas, Chong, & Lim, 2020). Concisely, influencers can convey their personal attributes, such as successes or emotions, through images and posts that can make them a target for upward or downward comparisons for other users. An influencer, internet personality or celebrity, who has an active social media network, therefore receiving many comments and virtual "likes" and overall approval of their content, maybe a target for an upward comparison in popularity, sociability, or apparent social capital (Kim & Lee, 2011; Vitak & Ellison, 2013). Therefore, we propose that:

H3a: Instagram Influencers' authenticity impact upward social comparison.
H3: Upward social comparison mediates the effects of Instagram influencers' authenticity on users' mental health.

As preceding research points out, people are programmed to believe that other social media users have better lives than they do (Chou & Edge, 2012), and as such, the people who are on social media most often suffer a higher exposure those upward social comparisons. Studies have made clear that people who make social comparisons on social media exhibit more depressive symptoms (Feinstein et al., 2013) and see themselves as more deviant from their ideal selves (Haferkamp & Krämer, 2011).
Thus, corroborating that:

H3b: Upward social comparison affects users' mental health.

The proposed research model for this study is presented below in Figure 1.

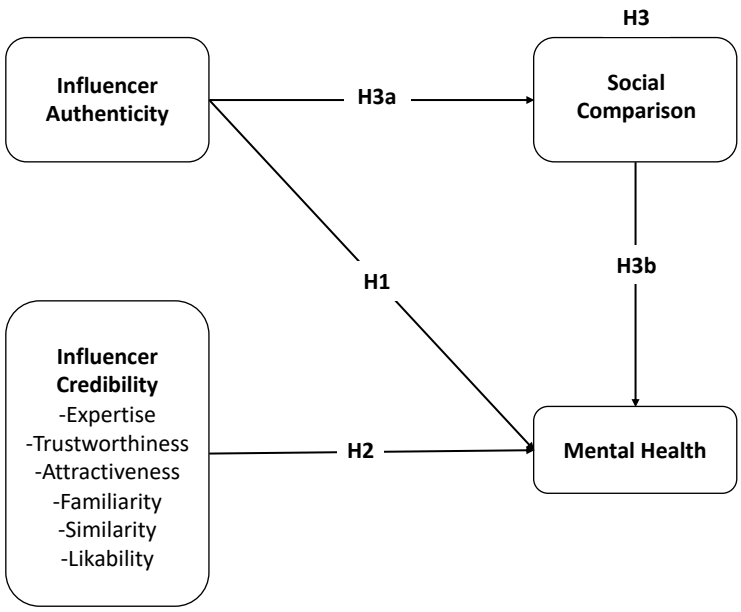


Figure 1. Research Model: Influencer Credibility and Authenticity Model

2.4. AUTHENTIC (ORGANIC) VS. LESS AUTHENTIC (SPONSORED) INFLUENCER POSTS

While consumers have begun to trust the opinions of social media influencers (De Veirman et al., 2017), brands and organizations have been using them to promote sponsored content with the intention of engaging their online audiences (Kapitan & Silvera, 2016). In order to accomplish such, influencers are required to maintain their authenticity while promoting brands and products, as their recommendations are perceived by their followers as genuine, real and honest (De Veirman et al., 2017). The Federal Trade Commission (2017) released guidance on influencer marketing, in 2017, that requires influencers and brands to disclose their relationships when creating sponsored content. Such guidelines assert that sponsored posts should display hashtags, such as "#sponsored," "#ad," or "#pub" (Audrezet et al., 2020). When influencers engage with sponsored posts on social media, it can compromise their perceived authenticity. Luoma-aho et al. (2019) conducted a study which revealed that sponsored content is negatively received by influencers due to it being perceived as inauthentic. In addition, previous research suggests that sponsored posts appear less authentic, thus leading to negative reviews of influencers by customers (De Veirman et al., 2017). Sponsorship disclosure may alter consumers' perceptions of influencer authenticity, as they may believe that posts are traded for compensatory rewards (Kim & Kim, 2020). Consequently, it can be suggested that organic, or authentic, posts by influencers will lead to a better mental health state among users than sponsored, or less authentic posts. The following hypothesis was formulated:

H4: Authentic (organic) influencers' posts affect mental health and body-image issues compared to less authentic (sponsored) posts.

3. METHODOLOGY

In this study, we employed the SPSS software to test our model and hypotheses. This study is divided in two sections. First it aims at understanding how the research participants perceive the influencer's attributes (credibility) when presented with an example of an organic (authentic) Instagram post. The second part presents respondents with both authentic (organic) and less authentic (sponsored) advertisement posts, from the same influencer, and with statements of feelings that those two posts might elicit (via social comparison). In conjunction, these allow to connect influencer attributes with mental health and behavioral intentions towards the products advertised. The participants were informed about the essential elements of the research, including the risks and benefits of participation, and understood the information, giving their informed consent to participate in this study (**Appendix A**).

3.1. STUDY DESIGN

An online questionnaire was conducted in order to gather quantitative data on influencer attributes and mental health, using the Statistical Package for the Social Sciences (SPSS) software to analyze the collected data. We utilized SPSS v. 23 in conjunction with t-tests, chi square tests and regression methods. We aimed at establishing and compare the impact of influencers' attributes (credibility and authenticity), and social comparison on affecting Instagram user's mental health. In further investigates if social comparison has a mediating role on the relationship between authenticity and users' mental health.

3.2. MEASUREMENT INSTRUMENTS

In this research, the theoretical framework to investigate the influencer's credibility contained 5 variables (expertise, trustworthiness, attractiveness, familiarity, likability, and similarity) each measured by means of several statements. A 1- to 5- point Likert scale was used to measure the respondents' level of agreement with each item, with 1 being "strongly disagree" and 5 "strongly agree", in relation to an organic Instagram post. To investigate mental health, and the overall feelings of the respondents when confronted with authentic (organic) vs less authentic (sponsored) influencer posts, a similar 1- to 5- quantitative slider scale was employed. Mental health was measured through seven statements, including one statement to assess the likeliness to purchase the product that is being advertised, regarding both advertisement posts. Two multiple choice questions were included to assess social comparison and the influencer's perceived authenticity, when exposed to those two Instagram posts.

The items used for measuring the credibility of the influencer were all adapted from a previous scale retrieved from Duh & Thabethe, 2021, and are summarized in **Appendix B**. To measure perceived authenticity, we used two Instagram advertisement posts from the same influencer, one organic (authentic) and one sponsored (inauthentic).

3.3. MEASUREMENT MODEL

To validate our conceptual model, the data was analyzed using SPSS v. 23 in conjunction with t-tests, chi square tests and regression methods. The normality of the data was assessed, showing that influencer credibility (IC) and mental health (MH) as continuous variables, had approximately normal distribution of data (**Appendix C**), which justifies the use of parametric tests as well.

Data reliability was also assessed by evaluating the Cronbach's alpha, which must be greater than 0.70, revealing that our study variables IC (0.947), MH (0.890), passed the reliability criteria (**Table 1**). Mental health was also evaluated in the scope of the authenticity of the influencer's posts, and MH-Organic (0.782) and MH-Sponsored (0.828) also met the reliability standards (**Table 1**). The remaining study variables, influencer's authenticity (IA) and social comparison (SC), as categorical variables, don't qualify for Cronbach alpha, which is only applicable to scale variables. In the scope of this study, the variable MH encompasses feelings of sadness, anxiety, depression, insecurity, and body-image issues.

Table 1. Reliability analysis of the study scales

Scale	Cronbach's Alpha	Items
Influencer's Credibility (IC)	0.947	26
Mental Health (MH)	0.890	16
Mental Health – Organic (MH-O)	0.782	8
Mental Health – Sponsored (MH-S)	0.828	8
N = 99		

Analyzing the means (M) and standard deviations (SD) for the study variables (**Table 2**) provides useful insights on how any participant has responded to the details in the questionnaire and how useful the scales and corresponding entries are to draw on the related theories (Sekaran, 2003). Correlations among research variables give hints on how good the variables are related to one another i.e., what linear association, if any, is present among the variables (Sekaran, 2003). As we can see from **Table 2** that all correlations among study variables were positive and significant correlations.

Table 2. Mean (M), standard deviation (SD) and correlation between the variables Influencer Credibility (IC), Mental Health (MH), Influencer Authenticity (IA) and Social Comparison (SC)

	M	SD	IC	MH	IA	SC
IC	3.51	0.62	1			
MH	2.54	0.66	-.421**	1		
IA	1.33	0.47	.354**	-.480**	1	
SC	1.60	0.49	.287**	-.754**	.320**	1
N = 99, **p < .01						

3.4. DATA COLLECTION AND PARTICIPANTS

Data was collected an online questionnaire targeting the general public was developed on Qualtrics XM software to test the hypotheses enunciated in this study. The online questionnaire was divided in two sections: the first section included one organic Instagram post from Valeria Lipovetsky's Instagram profile (**Figure 2**). Then we included the items formerly outlined to measure the respondent's perceptions of the variables related to the influencer's credibility (expertise, trustworthiness, attractiveness, familiarity, likability and similarity). In the second section, there were two slider scales with eight statements each, about mental health and whether or not the user intended to make a purchase based on either of the two Instagram sponsored or organic ad posts (**Figure 2**), by the same influencer, followed by two multiple choice questions about social comparison and the influencer's posts' authenticity. The questionnaire elaborated for this study can be found in **Appendix A**.

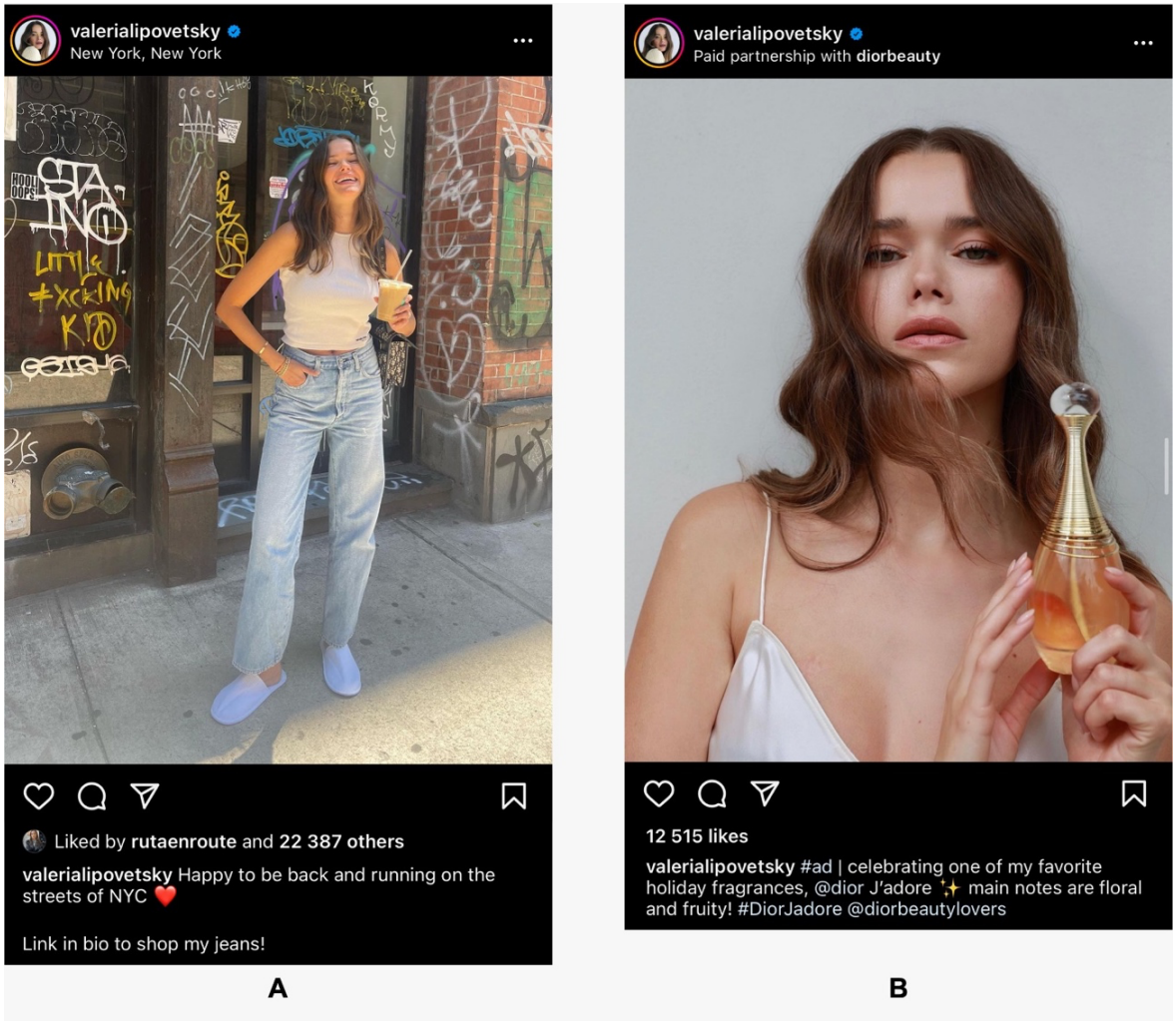


Figure 2. Organic (A) and sponsored (B) Instagram posts used in this study

The data was collected between October 11th and December 16th of 2022 and a total of ninety-nine participants successfully completed the questionnaire. A summary of the survey takers profile can be found in **Table 3**. The study population (n = 99) was composed of 79.8% females (n = 79) and 20.2% males (n = 20) participants. The average age of the respondents was 35 years, and the most

representative age group was from 18 to 25 with 59,6% respondents. Regarding education level, most participants have either a (53,5%, n = 53) a master or postgraduate degree, or a bachelor's degree (30,3%, n = 30). 11,1% (n = 11) of participants only attended high school and there is also a small representation of 5,1% (n = 5) of participants that hold a doctorate degree. Furthermore, 81,82% (n = 81) of the survey participants follow influencers on Instagram, while 18,2% (n = 18) don't.

Table 3. Respondents' profile, regarding gender, age, education and if they follow influencers on Instagram

Demographic Questions	**Results (%)**	
Gender	Male	20,2%
	Female	79,8%
Age	18 - 25 years	59,6%
	26 - 30 years	22,2%
	31 - 40 years	13,1%
	> 40 years	5,1%
Education Level	High school degree	11,1%
	Bachelor's degree	30,3%
	Master or postgraduate degree	53,5%
	Doctorate degree	5,1%
Do you follow influencers on Instagram?	Yes	81,8%
	No	18,2%

4. RESULTS

4.1. IMPACT OF THE INFLUENCER'S AUTHENTICITY ON MENTAL HEALTH

To test our first hypothesis (**H1**) we conducted a t-test which showed (**Table 4**) that perceiving the influencer as authentic (organic post) was associated with a high MH score (M = 2.76) as compared with less authentic (sponsored post; M = 2.10). This difference of score (M = .67) was statistically significant (t(53.835) = 5.037, p < .001; **Table 5**), meaning that **H1** was supported. **Table 2** showed that IA had a negative and significant correlation with MH (r = -.480, p < .001), thus taken together with the t-test, it can be implied that authentic IA will influence the MH more positively than less authentic IA and it would reduce the feelings of anxiety, depression etc.

Table 4. Group statistics for Influencer Authenticity (IA) and Mental Health (MH)

	Inf Authenticity	N	Mean	Std. Deviation	Std. Error Mean
MH	Authentic	66	2.759	.5374	.0662
	Less-authentic	33	2.091	.6598	.1149

Table 5. Independent sample test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MH	Equal variances assumed	5.511	.021	5.393	97	.000	.6676	.1238	.4219	.9133
	Equal variances not assumed			5.037	53.835	.000	.6676	.1325	.4019	.9334

4.2. IMPACT OF THE INFLUENCER'S CREDIBILITY ON MENTAL HEALTH

To test our second hypothesis (**H2**) we first referred to model fitness (**Table 6**), which indicated that our model was significantly fit for testing this hypothesis [F (1, 97) = 20.928, p < .001]. We noted that IC had a negative and significant impact on MH-DAS (b = -.445, p < .001; **Table 7**), which meant that **H2** was supported. Based on these results we can imply that any increase in IC would also reduce the depression anxiety and sadness etc. factors associated with Instagram usage. The analysis showed that IC accounted for 17.7% (R2 = .177) variance in MH-DAS (**Table 8**).

Table 6. Model fitness

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.544	1	7.544	20.928	.000[b]
	Residual	34.965	97	.360		
	Total	42.509	98			
a. Dependent Variable: MH						
b. Predictors: (Constant), IC						

Table 7. Regression analysis

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.097	.347		11.823	.000
	IC	-.445	.097	-.421	-4.575	.000
a. Dependent Variable: MH_Overall						

Table 8. Effect size

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.421[a]	.177	.169	.6004
a. Predictors: (Constant), IC				

4.3. The Mediating Effect of Social Comparison

4.3.1. Association Between Influencer Authenticity and Social Comparison

To test the association between the categorical variables influencer authenticity (IA) and social comparison (SC; **H3a**), a chi-square test was conducted. The analysis revealed that when IA was perceived as authentic, users compared themselves more positively with the influencer (51.5%, n = 34), while than negatively (n = 32 or 48.5%) and this difference was statistically significant ($p < .05$; **Table 9**). In addition, when IA was perceived as less authentic, users compared themselves unfavorably with the influencer (32.3%, n = 27), whereas a small percentage of users compared themselves positively (18.2%, n = 6), and this difference was significant as well ($p < .05$). The chi square test statistic was $\chi2(1) = 10.152$, $p < .001$ (**Table 10**). The results indicated that there was a significant association between variables IA and SC ($p < .05$), suggesting that the two variables are dependent, and it can also be implied that IA has influence on SC, thus supporting **H3a**.

Table 9. Crosstabulation of Influencer Authenticity (IA) and Social Comparison (SC)

			Social Comparison		Total
			Positive / Healthy	Negative / Unhealthy	
IA	Authentic	Count	34_a	32_b	66
		% within Inf Authenticity	51.5%	48.5%	100.0%
		% within Social_Compari	85.0%	54.2%	66.7%
	Less authentic	Count	6_a	27_b	33
		% within Inf Authenticity	18.2%	81.8%	100.0%
		% within Social_Compari	15.0%	45.8%	33.3%
Total		Count	40	59	99
		% within Inf Authenticity	40.4%	59.6%	100.0%
		% within Social_Compari	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of SC categories whose column proportions do not differ significantly from each other at the .05 level.

Table 10. Chi-square test of Influencer Authenticity (IA) and Social Comparison (SC)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.152[a]	1	.001
Continuity Correction[b]	8.815	1	.003
Likelihood Ratio	10.846	1	.001
Linear-by-Linear Association	10.049	1	.002
N of Valid Cases	99		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.33.			
b. Computed only for a 2x2 table			

4.3.2. Impact of Influencer Authenticity on Mental Mealth

To test mediation of SC on the relationship between IA and MH, a hierarchical regression was conducted (**Table 11**), revealing that the model was fit for testing this hypothesis [F (2, 96) = 76.398, p < .001]. Condition accounted for 17.7% (R2 = .177) variance in MH, while this effect was increased to 61.4% (R2 = .614) upon the inclusion of SC, with 43.7% increase in effect size (R2 Change = .437; **Table 12**). Next, we consulted the regression coefficients to determine whether **H3b** was supported or not (**Table 13**), which showed that SC had a negative and significant impact on MH (b = -.921, p < .001), which meant that mediation occurred. Since, IA had a significant but reduced impact on MH-DAS (b = -.236, p = .001), therefore partially supporting **H3b**.

Taking these results into consideration, it can be inferred that SC is a mediator of the relationship between IA and MH, thus supporting **H3**.

Table 11. Model fitness – mediation effect of Social Comparison (SC)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.544	1	7.544	20.928	.000[b]
	Residual	34.965	97	.360		

	Total	42.509	98			
2	Regression	26.106	2	13.053	76.398	.000[c]
	Residual	16.402	96	.171		
	Total	42.509	98			
a. Dependent Variable: MH						
b. Predictors: (Constant), IC						
c. Predictors: (Constant), IC, Social_Compari						

Table 12. Effect size – mediation model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.421[a]	.177	.169	.6004	.177	20.928	1	97	.000
2	.784[b]	.614	.606	.4133	.437	108.643	1	96	.000
a. Predictors: (Constant), IC									
b. Predictors: (Constant), IC, Social_Compari									

Table 13. Regression coefficients – mediation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.097	.347		11.823	.000
	IC	-.445	.097	-.421	-4.575	.000
2	(Constant)	4.834	.249		19.427	.000
	IC	-.236	.070	-.223	-3.376	.001
	Social_Compare	-.921	.088	-.690	-10.423	.000
a. Dependent Variable: MH_Overall						

4.4. MENTAL HEALTH OVERVIEW REGARDING PERCEIVED POST AUTHENTICITY

To individually assess the emotions covered by the MH variable, **H4** was divided into sub-hypotheses in order to test its validity.

The results of paired sample t-test (**Table 14**) showed that the organic post led to a higher mean on Happiness (M = 3.85) when compared to the sponsored post (M = 2.83). This difference of mean (M = 1.02) was statistically significant, t(98) = 8.047, p < .001 (**Table 15**), concluding that users were happier when viewing organic content, and thus supporting **H4a**.

Regarding Sadness, the results of paired sample t-test (**Table 14**) showed that the organic post led to a lower mean (M = 1.88) when compared to the sponsored post (M = 2.63). This difference in mean (M = 0.75) was also statistically significant, t(98) = 6.490, p < .001 (**Table 15**), supporting that users felt sadder when exposed to sponsored content (**H4b**).

For Anger, the paired sample t-test results (**Table 14**) revealed that the mean for the organic post (M = 2.10) was lower than the one for the sponsored post (M = 2.29). This difference in mean (M = 0.19) was marginally insignificant, t(98) = 1.957, p = .053 (**Table 15**), thus not supporting **H4c**, being concluded that there wasn't an identifiable link connecting users' anger toward sponsored or organic content, despite evidence that they felt less angry toward the organic post.

As for Insecurity, the results of paired sample t-test (**Table 14**) revealed a lower mean on insecurity (M = 2.41) for the organic post in comparison with the sponsored content (M = 2.58). Again, this difference of mean (M = 0.16) was not significant (**Table 15**), t(98) = 1.597, p = .114, thus rejecting **H4d**. It can be concluded that users' insecurity can't be linked to post authenticity despite evidence that they felt less insecure toward the organic post.

The results of paired sample t-test (**Table 14**) for Anxiety indicated that the mean was lower for the organic post (M = 2.13) when compared to the sponsored post (M = 2.44). This difference of mean (M = 0.31) was statistically significant (**Table 15**), t(98) = 3.653, p < .001, supporting that users felt less anxious with organic content (**H4e**).

Regarding difference in Depression by organic and sponsored Advertisement, the paired sample t-test results (**Table 14**) showed a lower mean on depression for the organic post (M = 2.18) in comparison with the sponsored post (M = 2.45). This difference of mean (M = 0.27) was statistically significant (**Table 15**), t(98) = 2.747, p = .007, so **H4f** was supported and it was concluded that users were less depressed with organic content.

For Body-image issues, the results of paired sample t-test (**Table 14**) showed that the mean for the organic post was lower (M = 2.59) when compared to the sponsored post (M = 2.60). This difference of mean (M = 0.01) was not significant (**Table 15**), t(98) = 0.090, p = .928, and so **H4g** was rejected. It was concluded that there isn't a verified connection between users' body-image and post authenticity, despite evidence that they were marginally less concerned with body-image viewing the organic post.

Table 14. Paired samples statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ORGANIC1_Happy	3.8485	99	.91878	.09234
	SPONSOR1_Happy	2.8283	99	.89260	.08971

Pair 2	ORGANIC2_SAD	1.8788	99	1.05243	.10577
	SPONSOR2_SAD	2.6263	99	.96453	.09694
Pair 3	ORGANIC3_Anger	2.1010	99	1.08322	.10887
	SPONSOR3_Anger	2.2929	99	1.00257	.10076
Pair 4	ORGANIC4_Insecure	2.4141	99	1.08806	.10935
	SPONSOR4_Insecure	2.5758	99	1.15256	.11584
Pair 5	ORGANIC5_Anxious	2.1313	99	1.07520	.10806
	SPONSOR5_Anxious	2.4444	99	1.08065	.10861
Pair 6	ORGANIC6_Depress	2.1818	99	1.11907	.11247
	SPONSOR6_Depress	2.4545	99	1.08112	.10866
Pair 7	ORGANIC7_Bimage	2.5859	99	1.14295	.11487
	SPONSOR7_Bimage	2.5960	99	1.23651	.12427
Pair 8	ORGANIC8_Purchase_Like	2.8283	99	1.06943	.10748
	SPONSOR8_Purchase_Like	2.7879	99	1.11824	.11239

Table 15. Paired samples test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	ORGANIC1_Happy - SPONSOR1_Happy	1.020	1.262	.12679	.76860	1.27181	8.047	98	.000
Pair 2	ORGANIC2_SAD - SPONSOR2_SAD	-.747	1.146	.11517	-.97602	-.51893	-6.490	98	.000
Pair 3	ORGANIC3_Anger - SPONSOR3_Anger	-.192	.976	.09809	-.38658	.00274	-1.957	98	.053
Pair 4	ORGANIC4_Insecure - SPONSOR4_Insecure	-.162	1.007	.10123	-.36250	.03926	-1.597	98	.114

Pair 5	ORGANIC5_Anxious - SPONSOR5_Anxious	-.313	.853	.08572	-.48324	-.14302	-3.653	98	.000
Pair 6	ORGANIC6_Depress - SPONSOR6_Depress	-.273	.988	.09928	-.46975	-.07570	-2.747	98	.007
Pair 7	ORGANIC7_Bimage - SPONSOR7_Bimage	-.010	1.111	.11167	-.23171	.21151	-.090	98	.928
Pair 8	ORGANIC8_Purchase_Like - SPONSOR8_Purchase_Like	.040	1.324	.13309	-.22370	.30451	.304	98	.762

4.4.1. Gender Differences on Mental Health

To get a deeper understanding on how the participants' mental health was affected by gender, we conducted a t-test (**Table 16**) which evidenced that males presented a slightly higher MH score (M = 2.57) in relation to females (M = 2.53). As displayed in (**Table 17**), this difference in score (M = .04) was not statistically significant, t(22.763) = 0.187, p = .853, meaning that it is no possible to state that MH was the same across genders.

Table 16. Group statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
MH	Male	20	2.569	.9358	.2093
	Female	79	2.528	.5756	.0648

Table 17. Independent samples test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
									Lower	Upper
MH	Equal variances assumed	7.548	.007	.248	97	.805	.0411	.1657	-.2877	.3698

	Equal variances not assumed			.187	22.763	.853	.0411	.2190	-.4123	.4945

4.5. PURCHASE INTENTION BY ORGANIC AND SPONSORED ADVERTISEMENT

To test if there was a difference in purchase intentions between organic and sponsored content, we did a paired sample t-test (**Table 14**), which showed that the purchase intentions for the organic post had a slightly higher mean (M = 2.83) when compared to that of the sponsored post (M = 2.79). However, this difference of mean (M = 0.04) was not significant (**Table 15**), t(98) = 0.304, p = .762. No conclusions can be drawn from this analysis, despite the marginally higher likelihood to purchase the item advertised in the organic post.

5. DISCUSSION

After analyzing the data obtained from the online questionnaire, it was possible to verify that all our proposed hypotheses were supported by the data. **Table 18** provides a summary of the hypotheses established for this study as well as those that arose during the process of analyzing the data (**H4a-g**).

Table 18. Hypothesis testing summary, including description and status

Hypothesis	Description	Status
H1	Authentic IA will positively influence MH (reducing the feelings of depression, anxiety, sadness etc.), while less authentic IA has a negative impact on MH	Supported
H2	IC (trustworthiness, expertise, attractiveness, familiarity, similarity, and likability) will positively impact MH, reducing the feelings of depression, anxiety, sadness etc.	Supported
H3a	IA is associated with SC.	Supported
H3b	SC mediates the effects of IA on MH.	Partially Supported
H4a	Users feel happier about organic content in comparison with sponsored content.	Supported
H4b	Users feel sadder with sponsored content in comparison to organic content.	Supported
H4c	Users feel angrier toward sponsored content in comparison with organic content.	Not Supported
H4d	Sponsored content makes users feel more insecure about themselves than organic content.	Not Supported
H4e	Sponsored content makes users feel more anxious than organic content.	Supported
H4f	Users feel more depressive feelings toward sponsored content in comparison with organic content.	Supported
H4g	Sponsored content leads to more body-image issues than organic content.	Not Supported

Since authenticity depends on the viewers' perceptions of what is real and what is not, it is a highly debatable term (Ilicic & Webster, 2014; Preece, 2015). The literature mentions that organic content is

usually viewed as more authentic (Samuel, 2017), so we compared an organic to a sponsored post shared by the same influencer to understand the differences in mental health. The results showed that influencer authenticity has a positive effect on mental health, thus reducing feelings of sadness, anxiety, depression, etc. These results further suggested that credibility of Instagram influencers is an important factor in influencing followers' mental health status, showing that expertise, trustworthiness, attractiveness, likability, familiarity, and similarity have a positive impact on users' mental health quality.

There are no current studies that tie social comparison to influencer authenticity. Since authenticity is associated with the true self (Arnould & Price, 2000), the majority of social media users see influencers as a way to discover their own identities (Belk, 2013). Concisely, the personal attributes conveyed by influencers, through images and posts, that can make them a target for upward or downward comparisons for other users. Our results showed that influencer authenticity does in fact have an impact on social comparison, in a way that users compared themselves more favorably with the influencer when presented with organic ads, i.e., when the perceived authenticity his high. Additionally, it was revealed that social comparison has a negative impact on users' mental health and acts as a mediator in the relationship between influencer authenticity and mental health.

Despite being difficult to assess mental health status through a questionnaire, the most effective measurement method we found was to utilize a quantitative scale with multiple statements. Thus, for analyzing its relation to Instagram post authenticity, mental health was decomposed into happiness, sadness, anger, insecurity, anxiety, depression, and body-image issues. It was verified that the sponsored content was associated with feelings of sadness, anxiety, and depression, as expected. On the other hand, organic content, being linked to a better mental health, results in positive feelings, such as happiness. For the remaining statements, anger, insecurity and body-image issues, the difference in responses was not significative and thus not being able to support those hypotheses.

When looking into the participants' likelihood of purchasing either the jeans or the perfume that were being advertised through organic and sponsored ads, respectively, we were expecting that the people would be more driven by the organic post. However, the differences in score were not significant and thus we could not conclude anything from this analysis.

5.1. THEORETICAL CONTRIBUTIONS

This research advances theory and information to influencers and brands on how to utilize social media effectively in their advertising campaigns with the purpose of lessening the decline in users' mental health, while also increasing post engagement. Thus, the present study contributes to the existing literature in different ways, from a theoretical perspective.

Although some studies that link influencer's attributes to consumer outcomes, like purchasing and brand attitude (De Veirman et al., 2017; Pöyry et al., 2019) have previously been done, this is first research that explores influencer's credibility (expertise, trustworthiness, attractiveness, familiarity, similarity, and likability) and authenticity attributes in relation to mental health. The findings in this study suggest that high influencer credibility and authenticity are both important factors in shaping a positive state of mental health for Instagram users when looking at advertising content, and therefore to decreased emotions of sadness, anxiety, depression, etc.

Additionally, in this research, we extend the social comparison literature linking it to the authenticity of the influencer, where previously it had been explored only in the interplay between social media use, self-esteem, and depression (Chae, 2018; Vogel et al., 2014; Wang, Wang, Gaskin, & Hawk, 2017). Our results indicate that the authenticity of influencers affect social comparison, revealing that Instagram users compare themselves positively with the influencer when faced with organic (authentic) ads, rather than with sponsored ads. The association between influencer authenticity and mental health was also shown to be mediated by social comparison, which was shown to have a detrimental effect on users' mental well-being. This supports earlier studies highlighting that users of social media who compare themselves to others show more signs of depression (Feinstein et al., 2013) and believe they are less like their ideal selves (Haferkamp & Krämer, 2011).

5.2. Practical Implications

The findings from this study are relevant in the context of social media advertising and promotion, particularly for the development of content that encourages psychological well-being of users.
The use of social media influencers to foster consumer engagement with brands has been a popular marketing strategy (Knoll & Matthes, 2017), whose brand-related posts and comments are perceived as more authentic and credible to their followers, making them less likely to resist brand communication (de Vries, Gensler, & Leeflang, 2012). However, how to choose or use influencers effectively is still a major challenge for brands (Ki & Kim, 2019).
This study offers some practical insights to brands for efficiently implementing and utilizing Instagram influencers in their social media marketing campaigns. When promoting a product or service, brands should aim to do so in a way that promotes a positive mental health state in social media users. This can be achieved by featuring influencers with a high number of real followers that are perceived as experts, trustworthy, attractive, likable, familiar, and similar to the audience they are trying to reach. These approaches can increase users' perceptions of credibility, which can boost their mental health and provide positive results such as high engagement (Hughes et al., 2019).
Furthermore, producing authentic content should similarly be a priority since it has the power to reinforce real and genuine messages. One study found that 43% of British social media users consider influencers to be inauthentic (Smith, 2017). Thus, brands must encourage influencers to display authenticity in their posts, instead of just focusing on paid advertisements. This research revealed that users' mental health is improved when they are exposed to content that is authentic rather than sponsored. Establishing authenticity can thereby mitigate these negative effects. Moreover, influencer authenticity was shown to have the ability to trigger a positive social comparison, which in turn is linked to a positive impact on users' mental health.

5.3. Limitations and Recommendations For Future Works

The main limitation in the scope of this study, is that when collecting data by means of an online questionnaire there is no certainty that the participants are being honest with the answers they provide or if they correctly understand what is being asked of them, and such cannot be foreseen no matter the sample composition. Furthermore, as mentioned in the discussion section, it's challenging to determine users' mental health state with an online survey. To lessen this limitation, the

questionnaire should be coupled with a more thorough assessment, such as EEG. This thesis was originally intended to be an eye-tracking study, however due to time limitations, this was not possible to accomplish.

Recommendations for future research on this topic include firstly expanding de sample size, as n=99 is not at all representative, as well as targeting a sample of active Instagram users. In order to broaden this study and get a better understanding of the role of visual attention on social media, an eye-tracking study should be conducted at Nova Marketing Analytics lab, where the research participants would scroll through an Instagram feed with both sponsored and organic posts. This would greatly complement and impact our research through gaze plots and heatmaps. These allow to comprehend which specific elements attract attention in an Instagram ad, by measuring what people are focused on, for how long, in what order and reveal the primary focus points of attention, respectively. Furthermore, this could be coupled with other methods such as electroencephalogram, or EEG, to measure the unconscious emotions and reactions uncovered by the Instagram ads. This would be especially valuable for measuring changes in mental health and its components when exposed to different organic and sponsored ads.

Future work should combine EEG with eye-tracking as a pre-test to the more in-depth online survey. This would also provide us real-time and authentic reactions to the posts that are being viewed, contributing to lessen one of the limitations of online questionnaires, which is not being able to discern between honest and dis-honest answers.

6. CONCLUSIONS

When posts are motivated by influencers' inner desires and interests rather than solely by promotional and commercial purposes, authenticity can be strengthened (Audrezet et al., 2020). Otherwise, social media users may perceive these posts as being unauthentic or sponsored (Beverland & Farrelly, 2010). (Audrezet et al., 2020). By mentioning brand sponsorships in their posts, influencers chance giving the idea that their advertisements are made only for financial gain (Kim & Kim, 2020). This was corroborated by our data. On the other hand, credibility depends on how the believability of the influencer is perceived (O'Keefe 1990). The data collected in this study allowed us to conclude that authenticity and credibility attributes of social media influencers are indeed associated with mental health, in a way that high authenticity and credibility lead to decreased feelings of sadness, anxiety, and depression, and thus encouraging an improved and more healthy mental state for their followers. Furthermore, it was found that the relation between influencer authenticity and mental health is mediated by social comparison. If the influencer is deemed as authentic, this will influence a positive social comparison which in turn will result in a good mental health, where users will experience emotions such as happiness when viewing the post. Our study demonstrates the effectiveness of organic posts over sponsored posts in leading to an enhanced mental health in social media users through promoting a healthy social comparison.

7. REFERENCES

Appel, G., Grewal, L., Hadi, R., Stephen, A. T., Stephen, A. T., & Appel, G. (2020). The future of social media in marketing. *Journal of the Academy of Marketing Science*, *48*, 79–95.

Arnould, E. J., & Price, L. L. (2000). Authenticating acts and authoritative performances. In *The why of consumption: Contemporary perspectives on consumers' motives, goals, and desires* (pp. 144–163). Psychology Press.

Audrezet, A., De Kerviler, G. C., & Moulard, J. G. (2017). Authenticity under threat: When social media influencers need to go beyond passion. *Advances in Consumer Research*, *45*, 509–510.

Audrezet, A., De Kerviler, G., & Moulard, J. G. (2020). Authenticity under threat: When social media influencers need to go beyond self-presentation. *Journal of Business Research*, *117*, 557–569.

Bandura, A., & Walters, R. H. (1977). *Social Learning Theory (Vol. 1)*. Englewood Cliffs, NJ: Prentice-hall.

Bayo-Moriones, A., & Lera-López, F. (2007). A firm-level analysis of determinants of ICT adoption in Spain. *Technovation*, *27*(6–7), 352–366.

Bazi, S., Filieri, R., & Gorton, M. (2020). Customers' motivation to engage with luxury brands on social media. *Journal of Business Research*, *112*, 223–235.

Belk, R. (2013). Extended Self in a Digital World. *Journal of Consumer Research*, *40*(3), 477–500.

Bergström, T., & Bäckman, L. (2013). *Marketing and PR in social media. How the utilization of Instagram builds and maintains customer relationships.* Stockholm Universitet.

Beverland, M. B., & Farrelly, F. J. (2010). The quest for authenticity in consumption: Consumers' purposive choice of authentic cues to shape experienced outcomes, *36*(5), 838–856.

Brodie, R. J., Ilic, A., Juric, B., & Hollebeek, L. (2013). Consumer engagement in a virtual brand community: An exploratory analysis. *Journal of Business Research*, *66*(1), 105–114.

Burnell, K., George, M. J., Vollet, J. W., Ehrenreich, S. E., & Underwood, M. K. (2019). Passive social networking site use and well-being: The mediating roles of social comparison and the fear of missing out. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *13*(3), article 5.

Buunk, A. P., & Gibbons, F. X. (2006). Social comparison orientation: a new perspective on those who do and those who do not compare with others. In *Social Comparison and Social Psychology: Understanding Cognition, Intergroup Relations, and Culture*. New York: Cambridge University Press.

Carroll, A. (2009). Brand communications in fashion categories using celebrity endorsement. *Journal of Brand Management*, *17*(2), 146–158.

Chae, J. (2018). Explaining Females' Envy Toward Social Media Influencers. *Media Psychology*, *21*(2), 246–262.

Chan, K., Ng, Y., & Luk, E. K. (2013). Impact of Celebrity Endorsement in Advertising on Brand Image Among Chinese Adolescents. *Young Consumer*, *2*(14), 2–30.

Chang, Y, Li, Y., Yan, J., & Kumar, V. (2019). Getting more likes: The impact of narrative person and

brand image on customer–brand interactions. *Journal of the Academy of Marketing Science*, *47*(2), 1027–1045.

Chang, Yu-ting, Yu, H., & Lu, H. (2015). Persuasive messages, popularity cohesion, and message diffusion in social media marketing. *Journal of Business Research*, *68*(4), 777–782.

Cho, H., Li, W., Shen, L., & Cannon, J. (2019). Mechanisms of Social Media Effects on Attitudes Toward E-Cigarette Use: Motivations, Mediators, and Moderators in a National Survey of Adolescents. *Journal of Medical Internet Research*, *21*(6), e14303.

Chou, H.-T. G., & Edge, N. (2012). '"They are happier and having better lives than I am"': The impact of using facebook on perceptions of others' lives. *Cyberpsychology, Behavior, and Social Networking*, *15*(2), 117–121.

Clement, S., Lassman, F., Barley, E., Evans-Lacko, S., Williams, P., Yamaguchi, S., … Thornicroft, G. (2013). Mass media interventions for reducing mental health-related stigma (Review). *Cochrane Database of Systematic Reviews*, (7), CD009453.

De Veirman, M., Cauberghe, V., & Hudders, L. (2017). Marketing through Instagram influencers: the impact of number of followers and product divergence on brand attitude. *International Journal of Advertising*, *36*(5), 798–828.

de Vries, L., Gensler, S., & Leeflang, P. S. H. (2012). 'Popularity of Brand Posts on Brand Fan Pages: An Investigation of the Effects of Social Media Marketing'. *Journal of Interactive Marketing*, *26*(2), 83–91.

Dessart, L., Veloutsou, C., & Morgan-thomas, A. (2015). Consumer engagement in online brand communities: A social media perspective. *Journal of Product and Brand Management*, *24*(1), 28–42.

Dixon, S. (2022). Number of social media users worldwide from 2018 to 2017. Retrieved from https://www.statista.com

Djafarova, E., & Rushworth, C. (2017). Exploring the credibility of online celebrities' Instagram profiles in influencing the purchase decisions of young female users. *Computers in Human Behavior*, *68*, 1–7.

Donnelly, E., & Kuss, D. J. (2016). Depression among users of Social Networking Sites (SNSs): The Role of SNS addiction and increased usage. *Journal of Addiction and Preventive Medicine*, *1*, 1–6.

Dubovik, O. (2013). *Instagram as instrument of marketing*. National Mining University.

Duh, H. I., & Thabethe, T. (2021). Attributes of Instagram influencers impacting consumer brand engagement. *Journal of Internet Marketing and Advertising*, *15*(May), 1–30.

Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., … Wang, Y. (2020). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, (June), 102168.

Erdogan, B. Z. (1999). Celebrity Endorsement: A Literature Review. *Journal of Marketing Management*, *15*(4), 291–314.

Feinstein, B. A., Hershenberg, R., Bhatia, V., Latack, J. A., Meuwly, N., & Davila, J. (2013). Negative Social

Comparison on Facebook and Depressive Symptoms: Rumination as a Mechanism. *Psychology of Popular Media Culture*, *2*(3), 161–170.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117–140.

French, J. (2009). Time to reassert public health's core brand values. *Perspect Public Health*, *129*(6), 259–260.

Gannon, V., & Prothero, A. (2016). Beauty blogger selfies as authenticating practices. *European Journal of Marketing*, *50*(9–10), 1858–1878.

Godey, B., Manthiou, A., Pederzoli, D., Rokka, J., Aiello, G., Donvito, R., & Singh, R. (2016). Social media marketing efforts of luxury brands: Influence on brand equity and consumer behavior. *Journal of Business Research*, *69*(12), 5833–5841.

Gupta, S., & Mahajan, R. (2019). Role of Micro-Influencers in Affecting Behavioural Intentions. *International Journal of Recent Technology and Engineering*, *8*(4S5), 189–192.

Haferkamp, N., & Krämer, N. C. (2011). Social comparison 2.0: Examining the effects of online profiles on social-networking sites. *Cyberpsychology, Behavior, and Social Networking*, *14*(5), 309–314.

Hayes, R. A., & Carr, C. T. (2015). Does Being Social Matter? Effects of Enabled Commenting on Credibility and Brand Attitude in Social Media. *Journal of Promotion Management*, *21*(3), 371–390.

Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion; psychological studies of opinion change*. Yale University Press.

Huey, L. S., & Yazdanifard, R. (2014). *How Instagram can be used as a tool in social networking marketing*.

Hughes, C., Swaminathan, V., & Brooks, G. (2019). Driving Brand Engagement Through Online Social Influencers: An Empirical Investigation of Sponsored Blogging Campaigns. *Journal of Marketing*, *83*(5), 78-96.

Hunt, M. G., Marx, R., Lipson, C., & Young, J. (2018). No more FOMO: Limiting Social Media Decreases Loneliness and Depression. *Journal of Social and Clinical Psychology*, *37*(10), 751–768.

Ilicic, J., & Webster, C. M. (2014). Investigating consumer–brand relational authenticity. *Journal of Brand Management*, *21*(4), 342–363.

Ilicic, J., & Webster, C. M. (2016). Being True to Oneself: Investigating Celebrity Brand Authenticity. *Psychology and Marketing*, *33*(6), 410–420.

Jiménez-Barreto, J., Rubio, N., Campo, S., & Molinillo, S. (2020). Linking the online destination brand experience and brand credibility with tourists' behavioral intentions toward a destination. *Tourism Management*, *79*, 104101.

Jin, S. V., Muqaddam, A., & Ryu, E. (2019). Instafamous and social media influencer marketing. *Marketing Intelligence and Planning*, *37*(5), 567–579.

Kalpidou, M., Costin, D., & Morris, J. (2011). The relationship between Facebook and the well-being of undergraduate college students. *Cyberpsychology, Behavior, and Social Networking*, *14*, 183–

189.

Kapitan, S., & Silvera, D. H. (2016). From digital media influencers to celebrity endorsers: attributions drive endorser effectiveness. *Marketing Letters*, *27*(3), 553–567.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world , unite ! The challenges and opportunities of Social Media. *Bus Horizons*, *53*(1), 59–68.

Karim, F., Oyewande, A. A., Abdalla, L. F., Ehsanullah, R. C., & Khan, S. (2020). Social Media Use and Its Connection to Mental Health: A Systematic Review. *Cureus*, *12*(6), e8627.

Ki, C.W., Cuevas, L. M., Chong, S. M., & Lim, H. (2020). Influencer marketing: Social media influencers as human brands attaching to followers and yielding positive marketing results by fulfilling needs. *Journal of Retailing and Consumer Services*, *55*, 102133.

Ki, C.W. & Kim, Y. K. (2019). The mechanism by which social media influencers persuade consumers: The role of consumers' desire to mimic. *Psychology and Marketing, 36*(10), 905-922.

Kim, D. Y., & Kim, H. (2020). Influencer advertising on social media: The multiple inference model on influencer-product congruence and sponsorship disclosure. *Journal of Business Research*.

Kim, J., & Lee, J.-E. R. (2011). The Facebook Paths to Happiness: Effects of the Number of Facebook Friends and Self-Presentation. *Cyberpsychology, Behavior, and Social Networking*, *14*(6), 359–364.

Knoll, J., & Matthes, J. (2017). The effectiveness of celebrity endorsements: a meta-analysis. *Journal of the Academy of Marketing Science*, *45*(1), 55–75.

Kowalczyk, C. M., & Pounders, K. (2016). Transforming celebrities through social media: The role of authenticity and emotional attachment. *Journal of Product and Brand Management*, *25*(4), 345–356.

Kozinets, R. V, Valck, K. De, Wojnicki, A. C., & Wilner, S. J. S. (2010). Networked Narratives: Understanding Word-of-Mouth Marketing in Online Communities. *Journal of Marketing*, *74*(March), 71–89.

Krasnova, H., Wenninger, H., Widjaja, T., & Buxmann, P. (2013). Envy on Facebook: a hidden threat to users' life satisfaction? In *Proceedings of the 11th international conference on Wirtschaftsinformatik* (pp. 1–16). Universität Leipzig, Germany. Retrieved from https://boris.unibe.ch/47080/1/WI 2013 Final Submission Krasnova.pdf

Liu, D., Baumeister, R. F., Yang, C., & Hu, B. (2019). Digital Communication Media Use and Psychological Well-Being: A Meta-Analysis. *Journal of Computer-Mediated Communication*, *24*(5), 259–274.

Lou, C., & Yuan, S. (2019). Influencer Marketing: How message value credibility affect consumer trust of branded content on social media. *Journal of Interactive Advertising*, *19*(1), 58–73.

Luoma-aho, V., Pirttimäki, T., Maity, D., Munnukka, J., & Reinikainen, H. (2019). Primed Authenticity: How Priming Impacts Authenticity Perception of Social Media. *International Journal of Strategic Communication*, *13*(4), 352–365.

Lup, K., Trub, L., & Rosenthal, L. (2015). Instagram #Instasad?: Exploring associations among Instagram use, depressive symptoms, negative social comparison, and strangers followed. *Cyberpsychology,*

Behavior, and Social Networking, *18*, 247–252.

Magno, F., & Cassia, F. (2018). The impact of social media influencers in tourism. *Anatolia*, *29*(2), 288–290.

Malthouse, E. C., Calder, B. J., Kim, S. J., & Vandenbosch, M. (2016). Evidence that user-generated content that produces engagement increases purchase behaviours. *Journal of Marketing Management*, *32*(5–6), 427–444.

Martinsen, E. W. (2008). Physical activity in the prevention and treatment of anxiety and depression. *Nord J Psychiatry*, *62*, 25–29.

Mcgaughey, K., Freberg, K., & Freberg, L. A. (2011). Who are the social media influencers? A study of public perceptions of personality. *Public Relations Review*, *37*(1), 90–92.

McGuire, W. J. (1985). Attitudes and Attitude Change. In *Handbook of Social Psychology* (3rd ed., pp. 233–346). New York: Random House.

Merchant, R. M., Elmer, S., & Lurie, N. (2011). Integrating Social Media into Emergency-Preparedness Efforts. *The New England Journal of Medicine*, *365*(4), 289–291.

Moulard, J. G., Garrity, C. P., & Rice, D. H. (2015). What Makes a Human Brand Authentic? Identifying the Antecedents of Celebrity Authenticity. *Psychology and Marketing*, *32*(2), 173–186.

Newman, N., Fletcher, R., Schulz, A., Andı, S., Robertson, C. T., & Nielsen, R. K. (2021). *Reuters Institute Digital News Report 2021 10*. Retrieved from https://www.digitalnewsreport.org/

O'Keefe, D. J. (1990). *Persuasion: Theory & research*. Thousand Oaks, CA: Sage Publications, Ltd.

Ohanian, R. (1990). Construction and Validation of a Scale to Measure Celebrity Endorsers' Perceived Expertise, Trustworthiness, and Attractiveness. *Journal of Advertising*, *19*(3), 39–52.

Pophal, L. (2016). *Best Practices in Influencer Marketing: Insights from Digital Marketing Experts*. Retrieved from eBooklt.com

Pornpitakpan, C. (2004). The Persuasiveness of Source Credibility: A Critical Review of Five Decades' Evidence. *Journal of Applied Social Psychology*, *34*(2), 243–281.

Pöyry, E., Pelkonen, M., Naumanen, E., & Laaksonen, S.-M. (2019). A Call for Authenticity: Audience Responses to Social Media Influencer Endorsements in Strategic Communication. *International Journal of Strategic Communication*, *13*(4), 336–351.

Preece, C. (2015). The authentic celebrity brand: unpacking Ai Weiwei's celebritised selves. *Journal of Marketing Management*, *31*(5–6), 616–645.

Purgat, M. B., Filimon, N., & Kiygi-Calli, M. (2017). Social Media and Higher Education – An International Perspective. *Economics and Sociology*, *10*(1), 181–191.

Rainie, L., Purcell, K., & Smith, A. (2011). *The Social Side of the Internet*.

Reer, F., Tang, W. Y., & Quandt, T. (2019). Psychosocial well-being and social media engagement: The mediating roles of social comparison orientation and fear of missing out. *New Media and Society*, *21*(7), 1486–1505.

Rinka, X. X., & Pratt, S. (2018). Social media influencers as endorsers to promote travel destinations: an application of self-congruence theory to the Chinese Generation Y. *Journal of Travel & Tourism Marketing*, *00*(00), 1–15.

Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating 'iDisorders'? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior*, *29*, 1243–1254.

Safko, L., & Brake, D. K. (2009). *The social media bible: tactics, tools and strategies for business success*. Wiley, Chichester.

Samuel, K. (2017). Why Authenticity is the most critical part of your social strategy in 2017. Retrieved from https://www.forbes.com/sites/forbesagencycouncil/2017/02/07/why- authenticity-is-the-most-critical-part-of-your-social-strategy-in-2017/#49d6013f301f

Schmuck, D., Karsay, K., Matthes, J., & Stevic, A. (2019). "Looking Up and Feeling Down". The influence of mobile social networking site use on upward social comparison, self-esteem, and well-being of adult smartphone users. *Telematics and Informatics*, *42*, 101240.

Seiler, R., & Kucza, G. (2017). Source Credibility Model, Source Attractiveness Model, and Match-up-Hyphotesis. *Journal of International Scientific Publications*, *11*, 1–15.

Serban, C. (2010). Marketing Communication in Online Social Programs: Ohanian Model of Source Credibility. *Annals of the University of Oradea: Economic Science*, *1*(1), 778–784.

Shan, Y., Chen, K.-J., & Lin, J.-S. E. (2019). When social media influencers endorse brands: the effects of self-influencer congruence, parasocial identification, and perceived endorser motive. *International Journal of Advertising*, 1–21.

Smith, R. (2017). Authenticity crisis for influencers. Marketing as poor partnerships backfire. Retrieved from https://www.prweek.com/article/1442535/authenticity-crisis-influencer-marketing-poor-partnerships-backfire

Spry, A., Pappu, R., & Cornwell, T. B. (2011). Celebrity endorsement, brand credibility and brand equity. *European Journal of Marketing*, *45*(6), 882–909.

Strickland, A. C. (2014). *Exploring the Effects of Social Media Use on the Mental Health of Young Adults*.

Strine, T. W., Mokdad, A. H., Dube, S. R., Balluz, L. S., Gonzalez, O., Berry, J. T., … Kroenke, K. (2008). The association of depression and anxiety with obesity and unhealthy behaviors among community-dwelling US adults. *General Hospital Psychiatry*, *30*(2), 127–137.

Sugiyama, T., Healy, G. N., Dunstan, D. W., Salmon, J., & Owen, N. (2008). Is Television Viewing Time a Marker of a Broader Pattern of Sedentary Behavior? *Annals of Behavioral Medicine*, *35*(2), 245–250.

Sugiyama, T., Salmon, J., Dunstan, D. W., Bauman, A. E., & Owen, N. (2007). Neighborhood Walkability and TV Viewing Time Among Australian Adults. *American Journal of Preventive Medicine*, *35*(6), 245–250.

Sülflow, M., Svenja Schäfer, & Winter, S. (2019). Selective attention in the news feed: An eye-tracking

study on the perception and selection of political news posts on Facebook. *SAGE*, *21*(1), 168–190.

Syrdal, H. A., & Briggs, E. (2018). Engagement with social media content: A qualitative exploration. *Journal of Marketing Theory and Practice*, *26*(1–2), 4–22.

Taillon, B. J., Mueller, S. M., Kowalczyk, C. M., & Jones, D. N. (2020). Understanding the relationships between social media influencers and their followers: the moderating role of closeness. *Journal of Product and Brand Management*.

Tandoc, E. C., Ferrucci, P., & Duffy, M. (2015). Facebook use, envy, and depression among college students: Is Facebooking depressing? *Computers in Human Behavior*, *43*, 139–146.

Teychenne, M., Ball, K., & Salmon, J. (2008). Physical activity and likelihood of depression in adults: a review. *Preventive Medicine*, *46*(5), 397–411.

Thackeray, R., Neiger, B. L., & Keller, H. (2012). Integrating Social Media and Social Marketing: A Four-Step Process. *Health Promotion Practice*, *13*(2), 165–168.

Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders*, *46*, 630–633.

Tuten, T. L., & Solomon, M. R. (2018). *Social Media Marketing* (3rd ed.). Los Angeles, CA: Sage Publications, Ltd.

Udo, M. I., & Nwulu, C. S. (2015). A theoretical reflection of celebrity endorsement in Nigeria. *International Journal of Business and Economic Development*, *3*(2), 81–92.

Vahedi, Z., & Zannella, L. (2019). The association between self-reported depressive symptoms and the use of social networking sites (SNS): A meta-analysis. *Current Psychology*, 1–16.

van Leeuwen, T. (2001). What is authenticity? *Discourse Studies*, *3*(4), 392–397.

Verduyn, P., Lee, D., Park, J., Shablack, H., Orvell, A., Bayer, J., … Kross, E. (2015). Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. *Journal of Experimental Psychology*, *144*(2), 480–488.

Vitak, J., & Ellison, N. B. (2013). "There's a network out there you might as well tap": Exploring the benefits of and barriers to exchanging informa- tional and support-based resources on Facebook. *New Media and Society*, *15*, 243–259.

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social Comparison, Social Media, and Self-Esteem. *Psychology of Popular Media Culture*, *3*(4), 206–222.

Wang, J.-L., Wang, H.-Z., Gaskin, J., & Hawk, S. (2017). The Mediating Roles of Upward Social Comparison and Self-esteem and the Moderating Role of Social Comparison Orientation in the Association between Social Networking Site Usage and Subjective Well-Being. *Frontiers in Psychology*, *8*, 771.

Wang, X., Wei, K.-K., & Teo, H.-H. (2007). The acceptance of product recommendations from web-based word-of-mouth systems: Effects of information, informant, and system characteristics. In *ICIS 2007 Proceedings - Twenty Eighth International Conference on Information Systems*.

Weismueller, J., Harrigan, P., Wang, S., & Soutar, G. N. (2020). Influencer endorsements: How advertising disclosure and source credibility affect consumer purchase intention on social media. *Australasian Marketing Journal*, (xxxx).

Wellman, M. L., Stoldt, R., Tully, M., & Ekdale, B. (2020). Ethics of Authenticity: Social Media Influencers and the Production of Sponsored Content. *Journal of Media Ethics*, *35*(2), 68–82.

Wheeler, L. (1966). Motivation as a Determinant of Upward Comparison. *Journal of Experimental Social Psychology Supplement*, *1*, 27–31.

Wiedmann, K.-P., & von Mettenheim, W. (2020). Attractiveness, trustworthiness and expertise–social influencers' winning formula? *Journal of Product and Brand Management*, (May).

Wills, T. A. (1981). Downward Comparison Principles in Social Psychology. *Psychological Bulletin*, *90*(2), 245–271.

Zaglia, M. E. (2013). Brand communities embedded in social networks. *Journal of Business Research*, *66*(2), 216–223.

8. APPENDIX

Appendix A. Online Questionnaire: Influencer Attributes and Mental Health

Dear participant,

This is a 7-minute survey intended to evaluate your perceptions and opinions towards social media advertising, as well as influencer's attributes on Instagram.

There is no risk involved in answering this survey. Your participation in this survey is voluntary, which means that you are free to participate or not, as well as give up at any time.

However, your response is very important, anonymous, and will be used only for academic purposes.

Informed Consent Form

Q1. By clicking "I agree" I declare that I am 18 years of age or over, and agree to participate in this research. I declare that I was informed that my participation in this study is voluntary, that I can leave this survey at any time without penalty, and that all data is confidential. I understood that this study does not offer serious risks.

O I agree to participate in this survey
o I do not agree to participate in this survey

Q2. Imagine that you are scrolling through your Instagram feed.

Take your time to reflect upon this influencer's organic/non-sponsored Instagram ad, as the next questions will be focused on that.

Q3. Please indicate in a scale from 1 (strongly disagree) to 5 (strongly agree) your level of agreement with the following sentences listed below regarding the influencer's expertise:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that the influencer who posted the picture is an expert in relation to the product advertised.	○	○	○	○	○
I feel that the influencer who posted the picture is experienced in the topic at hand.	○	○	○	○	○
I feel that the influencer who posted this picture is qualified to advertise the brand.	○	○	○	○	○
I feel that the influencer who posted the picture is knowledgeable about the item advertised.	○	○	○	○	○

Q4. Please indicate in a scale from 1 (strongly disagree) to 5 (strongly agree) your level of agreement with the following sentences listed below regarding the influencer's trustworthiness:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that the influencer who posted the picture is trustworthy in what she says.	○	○	○	○	○
I feel that the influencer who posted this advertisement is dependable.	○	○	○	○	○
I feel that the influencer who posted this advertisement is honest.	○	○	○	○	○
I feel that the influencer who posted this advertisement is reliable.	○	○	○	○	○
I feel that the influencer who posted the advertisement is sincere.	○	○	○	○	○

Q5. Please indicate in a scale from 1 (strongly disagree) to 5 (strongly agree) your level of agreement with the following sentences listed below regarding the influencer's attractiveness:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that the influencer who posted this picture is attractive.	○	○	○	○	○
I feel that the influencer who posted this picture is classy.	○	○	○	○	○
I feel that the influencer who posted this picture is beautiful.	○	○	○	○	○
I feel that the influencer who posted this picture is elegant.	○	○	○	○	○
I feel that the influencer who posted this picture is sexy.	○	○	○	○	○

Q6. Please indicate in a scale from 1 (strongly disagree) to 5 (strongly agree) your level of agreement with the following sentences listed below regarding the influencer's familiarity:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that the influencer who posted this advertisement is familiar to me.	○	○	○	○	○
I feel that the influencer who posted this advertisement is similar to me.	○	○	○	○	○
I feel that the influencer who posted this advertisement is alike to me.	○	○	○	○	○
I feel that the influencer who posted this advertisement is relatable.	○	○	○	○	○

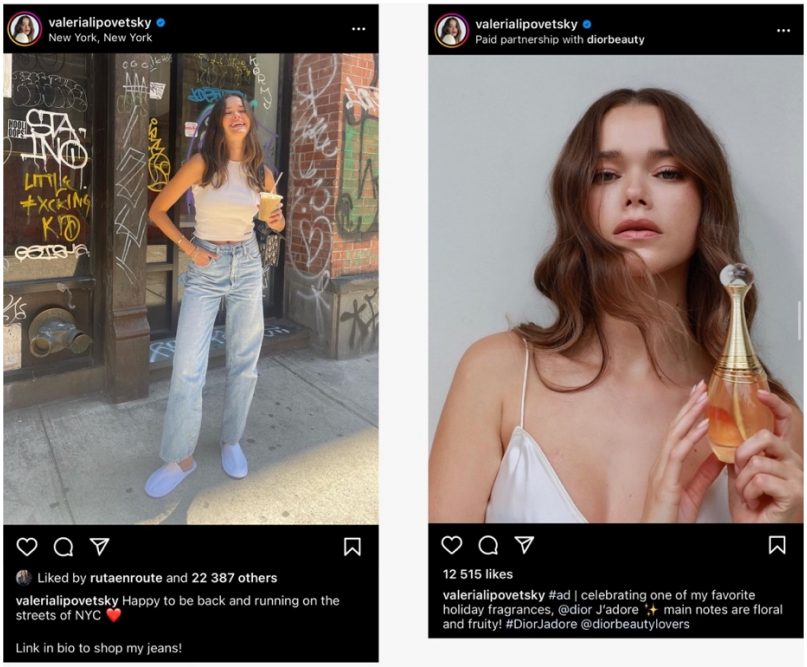
Q7. Please indicate in a scale from 1 (strongly disagree) to 5 (strongly agree) your level of agreement with the following sentences listed below regarding the influencer's likability:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that the influencer who posted this advertisement is likeable.	○	○	○	○	○
I feel that the user who posted the advertisement is pleasant.	○	○	○	○	○
I feel that the influencer who posted the advertisement is nice.	○	○	○	○	○
I feel that the influencer who posted the advertisement is friendly.	○	○	○	○	○
I feel that the influencer who posted this advertisement is amiable.	○	○	○	○	○

Q8. Please indicate in a scale from 1 (strongly disagree) to 5 (strongly agree) your level of agreement with the following sentences listed below regarding the influencer's similarity:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that the influencer and I have similar interests.	○	○	○	○	○
I feel that the influencer and I have a similar culture.	○	○	○	○	○
I feel that the influencer and I have a similar lifestyle.	○	○	○	○	○

Q9. Imagine, once again, that you are scrolling through your Instagram feed. You come across these two Instagram ads by the same influencer. Example A is a non-sponsored Instagram post, where the influencer is advertising a pair of jeans. Example B is a sponsored/paid Instagram post, where the same influencer advertises a fragrance by Dior. Take your time to think about this influencer's sponsored and non-sponsored Instagram ads, as the next questions will be focused on that.



Q10. Taking into consideration the two Instagram posts displayed above, use the sliders to describe how strongly example A – Non-sponsored Instagram Ad – elicits the following feelings, on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree):

Q11. Now use the sliders to describe how strongly example B – Sponsored Instagram Ad – elicits the following feelings, on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree):

Q12. Gender

o Male
o Female
o Other

Q13. Age

What is your age? (only numerical values) _____

Q14. Highest education degree

o No school degree completed
o High School degree (or equivalent)
o Bachelor's degree
o Master or postgraduate degree
o Doctorate degree

Q15. Do you follow influencers on Instagram? O Yes o No

Q16. What type of Instagram content would you say sparks your interest the most?

O Organic advertising
o Sponsored advertising

Q17. What type of Instagram advertising, presented above, do you feel provides you with an unhealthier form of social comparison (i.e., how likely you are to negatively compare yourself with the influencer)?

O Example A – Non-sponsored advertising
o Example B – Sponsored advertising

Appendix B. Statements used for measuring Influencer Credibility (IC). Retrieved from Duh & Thabethe, (2021)

Attribute	Statements
Expertise	I feel that the influencer who posted the picture is an expert in relation to the product advertised.
	I feel that the influencer who posted the picture is experienced in the topic at hand.
	I feel that the influencer who posted this picture is qualified to advertise the brand.
	I feel that the influencer who posted the picture is knowledgeable about the item advertised.
Trustworthiness	I feel that the influencer who posted the picture is trustworthy in what she says.
	I feel that the influencer who posted the advertisement is dependable.
	I feel that the influencer who posted this advertisement is honest.
	I feel that the influencer who posted this advertisement is reliable.
	I feel that the influencer who posted the advertisement is sincere.
Attractiveness	I feel that the influencer who posted this picture is attractive.
	I feel that the influencer who posted this picture is classy.
	I feel that the influencer who posted this picture is beautiful.
	I feel that the influencer who posted this picture is elegant.
	I feel that the influencer who posted this picture is sexy.
Familiarity	I feel that the influencer who posted this advertisement is familiar to me.
	I feel that the influencer who posted this advertisement is similar to me.
	I feel that the influencer who posted this advertisement is alike to me.
	I feel that the influencer who posted this advertisement is relatable.
Likability	I feel that the influencer who posted this advertisement is likeable.
	I feel that the influencer who posted the advertisement is pleasant.
	I feel that the influencer who posted the advertisement is nice.
	I feel that the influencer who posted the advertisement is friendly.
	I feel that the influencer who posted this advertisement is amiable.
Similarity	I feel that the influencer and I have similar interests.
	I feel that the influencer and I have a similar culture.
	I feel that the influencer and I have a similar lifestyle.

Appendix C. Normality and reliability of the study data

Table C1. Data normality assessment

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Influencers' Credibility (IC)	1.329	.243	1.104	.481
Mental Health (MH)	.358	.243	.860	.481

The basic assumption of data analysis is that a dataset is considered to be normal if the skewness and kurtosis values are within the range of ±1 or ±2. As showed in **Table C1**, all of the values were within the range of ±2. Normality of the data can also be confirmed visually through histograms (**Figure C1**). All continuous variables had approximately normal distribution of data, which justifies the use of parametric tests as well.

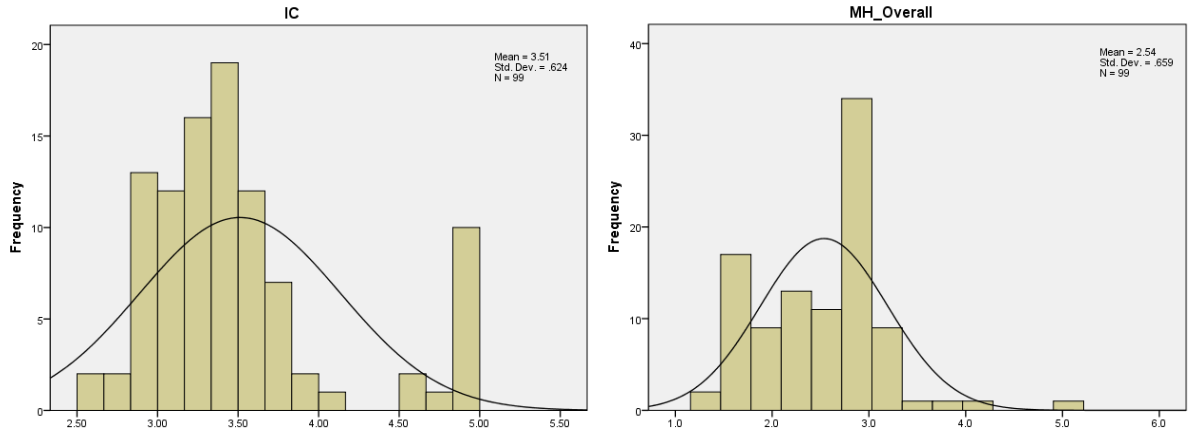


Figure C1. Normality histogram for influencer credibility (IC) and mental health (MH)