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Remodeling Digital Marketplace through Metaverse: A Multi-Path Model of Consumer Neuroticism, Parasocial Relationships, Social Media Influencer's Credibility, and Openness to Metaverse Experience

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Abstract

Metaverse promises new frontiers in mobility, collaboration, and connectedness in a digital universe poised to digitize our world of workplace and marketplace. The current study aims to explore the effect of consumer neuroticism, parasocial relationships, social media influencers' credibility, and openness to Metaverse experience on the intention to use the Metaverse digital marketplace. Prominent theories, including elaboration likelihood model and personality traits notion, supported the development of a multi-path model for the intention to use Metaverse digital marketplace. Drawing on extensive data of social media active users (N=1861) and covariance-based structural equation modeling (CB-SEM), the novel findings revealed that parasocial relationships and social media influencers' credibility positively trigger intentions to use the Metaverse digital marketplace. Moreover, a higher tendency of openness to Metaverse experience intensifies the effect of parasocial relationships on the intentions to use the Metaverse digital marketplace. Interestingly, openness to Metaverse experience is negatively associated with consumers' neuroticism. The study implications offer new insights into parasocial relationships and the credibility of social media influencers in determining followers' intention to use the Metaverse digital marketplace. Transition to the digital marketplace can be accelerated if consumers (prone to neuroticism) are offered professional support to overcome negative emotions (e.g., fear and helplessness) toward emerging digital technologies such as the Metaverse.

Keywords: Metaverse, parasocial relationship, social media influencer credibility, consumer neuroticism, elaboration likelihood model, personality traits, and technology acceptance model.

1. Introduction

The global COVID-19 pandemic foreshadows Metaverse as a collective and shared virtual space by converging augmented reality with the internet (Burnett et al., 2021; Mystakidis, 2022). The accelerated virtual interface in social interactions provoked by the pandemic has also triggered the transformation of the digital marketplace into the Metaverse (Mystakidis, 2022). This transformation is in reaction to the new reality (Burnett et al., 2021). Following the new age symbolized by the newly established word "untact" (non-contact) for businesses, remote courses for education and live e-commerce for consumers are becoming more common globally. Shopping has evolved to include both the social and commercial environment. The fourth industrial revolution and artificial intelligence (AI)-based technologies positively impact our day-to-day activities in this contact-free future (Shen et al., 2021). The "Metaverse" platform services are particularly significant. Combine 5G network technology with superior frivolous virtual technology and innovative presentation device technology to create a breakthrough in display technology (Han et al., 2022).

In the continuing worldwide crisis induced by COVID-19, the advent of the Metaverse platforms represent a new global marketplace model. It has been considered a novel is growing apparatus combining commerce and content (Hollensen et al., 2022). The Metaverse is not delimited by time and place constraints, which makes it a perfect platform for digital e-commerce. It allows a simulated involvement with a great degree of engagement and connection, escalating the virtual experience's value for the user (Smith & Skinner, 2022; Zaman et al., 2022). The Metaverse may be accessed using personal computers and mobile devices, defined by the ability to access it at any time and from any location. According to the company, Roblox has around 50 million games, with a monthly use duration of 3 billion hours. Aside from that, Zepeto provides virtual space services to 200 million members. A technology-based platform tailored for the contactless age, the Metaverse is increasing its reach across industries and markets due to its popularity (Song & Kook, 2022). The fast expansion of the fourth industrial revolution, technology-based networks, gadget technology, and the pandemic has brought the significance of the Metaverse to the forefront of public discourse. When the Metaverse arrived in the early 2000s, it was primarily used in the gaming industry as a means of communication (Skilton & Hovsepian, 2018). However, it grows in other areas, like performance, medical care, fashion, and video games. It is one of the most effective marketing strategies in the contactless age (Venturini, 2022).

From a marketing perspective, businesses are struggling to leverage their services by adopting new technologies, such as virtual reality, and hoping to adopt the latest technologies (e.g., Metaverse). The emerging competition in the sector of e-commerce has upsurged this trend. However, consumer adoption needs strategic promotion management.

Owing to the increased integration of these technologies with existing digital platforms, they are investing in promotion manage ment. Recently, influencer marketing has evolved as a strategic tool to promote technology adoption among consumers. Influencer marketing is becoming more popular, and a recent study has focused on the characteristics that contribute to the efficacy of influencer marketing campaigns (Wu et al., 2022), associating the effectiveness of influencers with celebrities (Fernández Gómez et al., 2021). Furthermore, a study has looked at difficulties connected to the "friendship" among personalities or influencers using digital platforms such as Instagram and their followers, among other things (Chung & Cho, 2017a). It has identified the PSR as a primary tool for the success of endorsements or the effectiveness of brand-building campaigns (Lou, 2021). There is adequate evidence from these studies to support the function of influencers in improving marketing efficacy, customer connection development, and brand building (Jin et al., 2021). Instead, the role of influencers on consumption-related behaviors, such as the Metaverse digital marketplace, has yet received no attention.

In terms of digital media reach, people are gradually turning to digital platforms and virtual communities for information and the formation of relationships nowadays (Levine et al., 2022). People on social media frequently look to "someone like me" or famous online personas for information about health, travel, food, lifestyle, beauty, and fashion, as well as how to live healthier lives (Lou, 2021). Social media users build deep connections with these powerful personae over time because of frequent exposure to their user-generated material and constant interactions. Online personas can influence fans' purchasing decisions (Cousineau et al., 2021). They are called "social media influencers" (SMI onwards) an "independent third-party endorser who shapes audience perceptions" (Hudders et al., 2021), and who are "content creators with 'celebrity status on social media" (Kim & Kim, 2022). In addition, influencers are constantly involved in two-way exchanges with their followers via digital platforms, contributing to deep associations among the two or more parties. Influencers provide a significant marketing opportunity for companies and marketers, given that followers have a high confidence level in influencers and influencer-created content (Pop et al., 2022).

People's attachments to social media influencers are becoming deeper due to their increased technology usage. The literature lacks research evaluating the desire to engage in the Metaverse and the elements contributing to that decision (Shen et al., 2021). However, the increased global connectedness brought forth by these shifts paved the way for the Metaverse to become crowded (Bec et al., 2021). Additionally, the online purchase process uses various electronic payment devices and methods. During routine surfing, their exposure to multiple forms of advertising, including spam and subscription links, is another crucial factor (Pestek & Sarvan, 2020). Online retailers are becoming increasingly competitive with more sophisticated technologies tailored to each customer's preferences (Yung & Khoo-Lattimore, 2019). However, this computational knowledge has created more targeted and complex technologies, such as spatial computing with geographic mapping (Han et al., 2022).

However, no comprehensive framework has been developed to disentangle the underlying mechanisms of influencers' appeal among followers to promote the futuristic digital marketplaces using Metaverse space (Hollensen et al., 2022). Similarly, there is a dearth of literature tapping on individual differences in adopting technologies such as Metaverse. To our knowledge, this futuristic topic has not yet received attention, and there is a research gap explaining the tradeoff between personality traits and intentions to use the Metaverse marketplace. The outcomes of this work provide significant advances in theoretical understanding. Because of this, it goes on to use the notion of PSR to explain that there is research on media psychology and the attractiveness of influencers among followers, laying the theoretical groundwork for future studies on the effect of influencers. This research also advances the body of knowledge by examining how personality traits outline the futuristic Metaverse marketplace acceptability. With this understanding, Metaverse technology may better satisfy the needs of its customers and allow them to connect with the technology more naturally. Because of the new level of engagement, people who use social media can build strong relationships with those who follow them. Such relationships, which have a lot of marketing power, appeal to businesses and brands. Social media influencer marketing has been getting much attention recently. Many studies have looked into how PSRs form between influencers and their followers. PSR hasn't been compared to other typical relationship marketing concepts, even though there have been many studies on PSR. Theoretically, this research extends the previous model such as Elaboration Likelihood Model (henceforth ELM), technology acceptance model (henceforth TAM), and personality traits and tapped the understudied psychological mechanism connecting a consumer neuroticism (e.g., ability) and openness to experience (e.g., motivation) with the source credibility, service utility (e.g., argument quality) with Metaverse digital marketplaces usage. This research addresses the question remains about how ability (e.g., consumer neuroticism) negatively influences the motivation (e.g., openness to experience in the context of technology use. The previous research do not explore this critical aspect of the influencer marketing. Thereby, this research departed from the notions of the ELM, TAM, and personality traits to explain the interplay between openness to experience and rationale and emotional cues to determine the Metaverse usage among the consumers.

2. Literature Review

2.1. Metaverse: Futuristic Digital Marketplace

The widespread belief that the Metaverse represents the most critical new economic potential to arise since the advent of the internet initially in digital platforms is the next logical step. It combines the terms "meta" and "universe" to form the phrase "Metaverse." It is a more sophisticated phrase than VR, which denotes "virtuality" and "transcendence." Alternatively, the Metaverse can be considered a separate service available for numerous societal phenomena in the marketplace as technology progresses (Han et al., 2022). The Metaverse came into existence in the last decade as a fragment of the gaming platforms. It allows users to communicate with each other on their own. People have also found it simpler to access social media sites that stress ease and accessibility due to the proliferation of smartphones and social networking services (Martins et al., 2019). As a result, the number of people in the Metaverse has dropped. As a result, the market has changed

dramatically since COVID-19. The digital platforms connecting users and manufacturers have been assembled with 5G technology, and high-tech gadgets such as Metaverse have been in demand (Ahokangas et al., 2021).

Besides, the Metaverse technology can be used in a market where 5G will be commercialized soon (Han et al., 2022). It will be able to provide extremely fast, connectedness, and virtual space with low latency amenities. With the futuristic commercial spread of Metaverse, many sectors can take its benefit (Gawer, 2022). The Metaverse is becoming further popular as a platform for contactless settings because it can be used to provide virtual space for marketers. Metaverse's use in e-commerce can revolutionize digital marketplaces by providing better virtual experiences to consumers. Furthermore, like technology adoption, Metaverse digital marketplaces may face consumer reluctance and must be addressed through research. However, a dearth of research unfolds the factors involved in adopting the Metaverse technology acceptance soon. Not much attention has been paid to delineating its promotion, particularly in the context of influencer marketing that has been commonly employed in the promotion of new marketplaces available online. The following section highlights the dynamics of influencer marketing that can be possible determinants of this futuristic digital marketplace. In influencer marketing, SMI is being used to persuade consumers, and this research tap this void area of literature and attempts to fill this gap.

2.2 Theoretical Underpinnings: Elaboration Likelihood Model, Personality Traits, and Technology Acceptance Model

This research unfolds the phenomenon of Metaverse technology usage among the prospective consumers of digital marketplaces. Mainly, this research emphasized influencer marketing and its role in promoting the newest technologies, such as Metaverse usage. Therefore, this research integrates tenets of the prior theories, such as the ELM, TAM, and personality traits, to present a comprehensive theoretical framework. This research argues that consideration of the psychological, dual-processing aspects of the incoming information and technology acceptance elements as the determinants of one's intention to use Metaverse-based digital marketplaces is critical. Ergo, this research primarily draws on the ELM's established information processing persuasion model that provides a theoretical foundation to investigate the intention to use Metaverse digital marketplaces. The ELM suggests that the individual decision-making process can be affected in two means, central and peripheral routes (Cho & Chan, 2021). These routes indeed provide a basis to process the information received by the individuals, and dual-processing of the received information ultimately results in the outcomes. The central route necessitates an individual to contemplate problem-related information analytically and access the argument quality of the received information. In this scenario, people would be interested to know about the utility of the service (e.g., Metaverse) and if they agree with the utility of the Metaverse as a facilitator in making decisions while using digital marketplaces. This idea aligns with the TAM that one's users feel the higher extent of the perceived usefulness of any technology, they are likely to make favorable decisions. In

contrast, if the information received from the celebrity has less quality of the argument, the individuals process that information through the peripheral route. This route primarily depends on cognitive shortcuts or cues without substantial contemplation and requires less cognitive effort. The peripheral route is activated when individuals are not encouraged or motivated to process information provided to them to alter their attitude. In this case, they ensue cues; they are likely to evaluate the information based on their sentiments, such as the attraction and personality of the influencer (Raza et al., 2022). The ELM posited source credibility, attractiveness, and argument quality as the determinants of the decision process. This research incorporated constructs of social media influencer credibility and parasocial social relationships as corresponding variables for Metaverse digital marketplaces usage.

The ELM also identified moderating factors related to one's ability and motivational level influencing one's decision-making. This research deducted tents from the personality traits theory and extended the ELM. This research adds a psychological mechanism involving a tradeoff between consumer neuroticism (e.g., ability) and openness to experience (e.g., motivation). This research argues that ability (e.g., consumer neuroticism) negatively influences the motivation (e.g., openness to experience) of the individual in the context of technology use (see figure 1). Drawing analogy with the views explained, this research proposed a model that considers facets of influencer marketing in the context of ELM, TAM, and personality traits. The function of openness to experience would be critical in defining the cues from the parasocial relationship and social media influencers' credibility. However, we argue that prospective consumers with greater neuroticism would negatively influence this motivational level. The social media followers of the influencers also process the influencers' advocated information to use technology would also depend on the perceived functional attributes of the Metaverse. People who agree with arguments backed by the social media influencers to use the Metaverse-driven digital marketplaces would also assess the influencers' expertise. Therefore, this research considered the influencer's attractiveness, credibility, expertise, and perceived parasocial relationships. The following section elaborates on these postulations in more plausible detail.

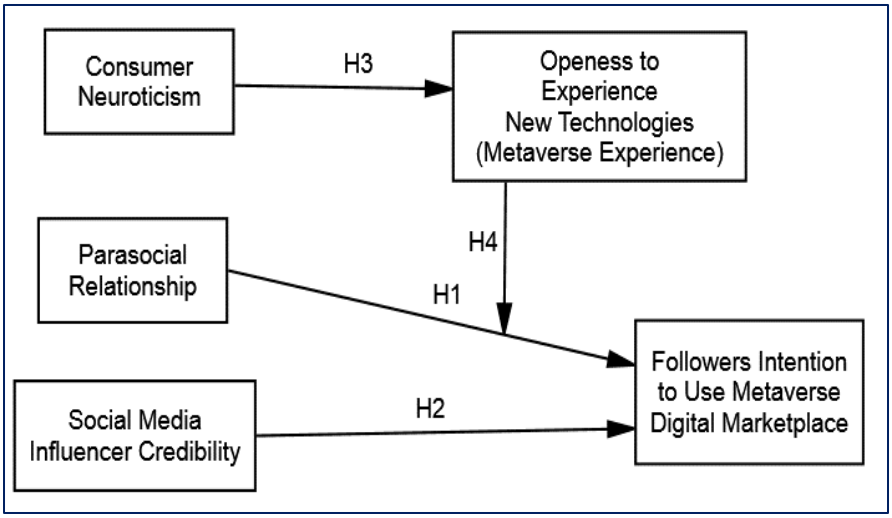

Figure 1: Multi-Path Model of Intention to Use Metaverse Digital Marketplace

2.2. Parasocial Relationships—An Evolving Construct

The notion of PSR is common in the media, impacting researchers. It was first proposed in 1956 (see Horton & Wohl 1956) and described as a media user's attitude toward an on-screen performance was that the viewer saw the actor as an intimate conversational companion. It is common for viewers to feel like they are participating in a dialogue with the media performer, mainly when the media performer physically addresses them via the camera. It has since become an essential part of the field that tries to understand how social media users interpret one-sided exchanges with media influencers as if they were having a genuine conversation and then create one-sided relationships with such people (Youn & Jin, 2021).

Traditionally, PSR has been associated with one-sided, non-reciprocal associations with celebrities or other influential people (Breves et al., 2021). This shift in public perception of celebrities is due to the spread of online media "micro-celebrities" through live streaming, which allows for mutual interaction, vibrant communal association, fan characterizations, aspiring recognition, higher level of expressive engagements, and augmented existence; in the form of a "one-and-a-half-sided relationship," as opposed to the traditional one-to-one relationship. To a considerable degree, influencers serve as an intermediary between marketers/brands and their followers, facilitating indirect and mediated communication (Jones et al., 2022). In contrast to social relationships, public relations (PR) are one-sided engagements that do not require reciprocity between media personalities and viewers (Breves et al., 2021). Compared to conventional media, digital platforms allow interactive engagement between influencers and their followers (Yuan & Lou, 2020). Today's public figures not only communicate with their followers one way via conventional media channels, but they also actively connect with their viewers using

interactive social media platforms such as Twitter and Instagram (Lee & Lee, 2022). To comprehend PSR, researchers have applied the elaboration likelihood model. According to researchers, people must objectively and actively examine the media persona and their behavior throughout the engagement to grow PSR (Kim, 2020). In recent years, scientists have observed that both the influencers' attributes (e.g., attraction) and their presentation during the interface (e.g., spoken and expressions) contribute to the audience's PSR with the performance (i.e., whether or not they find the performer attractive or not) (Aw & Chuah, 2021).

The source and the audience have been the primary subjects of the current PSR study. (Yuan & Lou, 2020). Based on past research, we contend that three factors are essential in developing a PSR: the source or communicator's features, the audience's characteristics, and the interaction process between the two. However, there has only been a small amount of research on the role of the communication process or the interaction process (Wu et al., 2022). Because interaction between influencers and followers is more interactive than traditional celebrity-viewer engagement, it is critical to analyze the effect of the communication process while examining the attractiveness of influencers among fans. This section discusses the study on source credibility and PSR in the context of influencers, focusing on Pakistan.

2.3. Social Media's Role in Parasocial Relationships

PSR is one-sided connections that people develop with a mediated character, such as celebrities or public figures (Horton & Wohl, 1956). That these relationships are one-sided does not diminish their authenticity or intensity. Even though they are one-sided, they may elicit sentiments of friendship (e.g., fondness, closeness, and self-revelation), understanding (based on emotional attachment such as personally known celebrities), or both (Chung & Cho, 2017b). It has been established that PSR originated with mass media, such as TV, which initially gave viewers the impression of closeness with the celebrity (Horton & Wohl, 1956). The interactivity attribute of digital platforms has augmented the likelihood of people forming these relationships (Zollo et al., 2020). On top of this, firms and celebrities may provide glimpses into their routines on their websites and social media accounts, allowing consumers to interact with them immediately and in the first person (Gao & Feng, 2016). As a result, even if they do not personally know celebrities, customers have a strong need to develop profound emotional and psychological attachments to them.

These characteristics were not thoroughly and individually investigated in earlier scale development initiatives. As a result, the interaction component seems to have been overlooked by academics in the literature. *Prosocial relationships* are defined by Horton and Richard Wohl (1956) as an exchange of information between two people. However, contemporary interactive media technologies allow for a broader range of interactions. The "interpersonal involvement of the media with what he or she consumes" is defined by Rubin et al. (1985) as "the seeking of guidance from a media persona, the seeing of media personalities as friendships, the imagination of being a part of the social world of a favorite program, and the desire to meet media performers. In the marketing arena (Ki et al., 2020),

PSR contact is described as "an illusionary experience so that customers interact with personas as if they are present and engaged in a reciprocal relationship."

2.4. Social Media Influencer Credibility

The persuasiveness of communication is strongly influenced by the communicator's or message source's credibility (Lou & Yuan, 2019). Unlike "larger" influencer marketing, SMI is "micro-endorsers." When it comes to advertising, communicators often play the same function that message sources do regarding persuasion. The impact of a source's credibility on the efficacy of persuasive communications was previously measured using source credibility (Raza & Zaman, 2021; Saima & Khan, 2020). According to Weismueller et al. (2020), one aspect that influences the efficiency of a marketing signal is the source's legitimacy. Perceived source credibility is "judgments made by a perceiver concerning the believability of a communicator"(Shareef et al., 2019). Furthermore, Yuan and Lou (2020) defined source credibility as the good attributes of the person communicating with the receiver that impacts the recipient's acceptance of the message. The use of social media is widespread, and businesses must be cautious in using this medium to achieve their strategic objectives.

In recent years, engagement in the Metaverse has become an emergent consuming trend among social media spectators. An increased behavior in a mediated environment involving the use of a headset and virtual reality technology to give the participant immersive experiences is an example of what is meant by the term "Metaverse" (Shen et al., 2021; Hollensen et al., 2022). Users that engage with the Metaverse are exposed to heightened levels of both the depth and breadth of sensory input. Growing information and communications technology (ICT) corporations and media organizations are now offering something called the Metaverse to those who want to experience life online but don't want a real presence in the marketplace (Han et al., 2022). Researchers have examined how social media influencers play a part in getting people to try new technologies. The proximity of adoption and usage of technologies in today's social media landscape makes it imperative that researchers focus on individual contexts to get meaningful insights into the experience of using widely adopted technologies (Shen et al., 2021).

In recent years, social media has become more important than marketing. The function of SMI in influencing customer brand perceptions about a company's services is becoming more critical in the business world. Social media has become essential to people's lives because of "internet-based apps that build on the ideological and technical underpinnings of Web 2.0" and "enable the production and sharing of user-created content." Social media networks like Instagram, YouTube, etc., are no longer only private sharing tools. They have been a significant advertising outlet in the last decade. Because of the wide range of social media options (Ardiansyah & Sarwoko, 2020), accessing a vast audience without the communicator having a position at an institution is no longer feasible. Recently, relatively new marketing and advertising via social media-based influencers have significantly influenced consumer decision-making.

2.5. Parasocial Relationship and Intention to Use Metaverse Digital Marketplace

PSR is a term that was first used to describe the emotional connection that viewers, filmgoers, and radio listeners feel with the media artists they hear or see on screen or hear on the radio (Chung & Cho, 2017a). PSRs are imagined relationships with media actors that begin with media usage and are marked by a perceived progression in one's connection with the performer and a thorough understanding of the artist's personality characteristics (Lee & Lee, 2022). Media consumption takes on a ritualistic quality and becomes more significant to the lives of those who participate (Aw & Labrecque, 2020). It is common to think of soap opera celebrities as leading names that regularly pop up in people's homes (Lou, 2021). Much research has found determinants of PSR strength, such as time spent with media personae (Chung & Cho, 2017a; Lee & Lee, 2022), individual traits (Kowert & Daniel Jr, 2021), and media personae features (Aw & Labrecque, 2020).

According to prior studies, a communication source's trustworthiness influences persuasive messages' efficacy (Juska, 2021; Raza et al., 2021). Previous research on SMI's impact on customers looked at source credibility (Weismueller et al., 2020). The degree to which a source is trustworthy is called "source credibility." However, a gap exists in the evidence about how perceived expertise and credibility influence the PSR of professionals (Jones et al., 2022). Source credibility will likely affect the PSR between influencers and their followers. Owing to the ostensibly competitive circumstances of e-commerce, businesses using digital marketplaces requires to bring value to their consumers. These marketplaces (e-commerce platforms) engage their consumers in long-standing relationships by employing influencer marketing to achieve this. Mainly utilization of parasocial relationship marketing is an established technique to increase consumer engagement. Since past research advocated that it can increase the level of attention and intention to use the digital marketplace (Mystakidis, 2022). To illustrate this mechanism, consumers who build parasocial relationships with influencers will likely demonstrate positive intent toward a particular e-commerce firm (Yuan et al., 2019). Furthermore, literature supported that long-standing parasocial relationships transmit people's liking of the influence of the corresponding firm and develop to use of its offerings (Chung & Cho, 2017). As per se, through the usage of existing parasocial relationships with influencers, consumers will probably feel the confidence to adopt the innovative services offered by that particular firm, which may intensify their intention to use Metaverse digital marketplace, and thus, we hypothesized that;

- **H_1:** Parasocial relationships will positively influence the followers' intention to use Metaverse digital marketplace.

2.6. Social Media Influencer Credibility & Intention to Use Metaverse Digital Marketplace

As of October 2021, when Facebook officially changed its name to Meta, Metaverse established itself as a novel custom for digital experience and three-dimensional (3D) virtual worlds. The Metaverse aspires to provide consumers with 3D immersive and customized experiences via various relevant technologies (Han et al., 2022). Despite all of the attention and advantages, one of the most obvious questions in the Metaverse is how to protect its users' digital material and data. In this respect, it is a potential answer because

of its unique decentralization, immutability, and transparency characteristics. In order to get a better understanding of the phenomenon, we want to conduct a comprehensive poll on the trustworthiness of SMI in the Metaverse (Shen et al., 2021). With the use of social media in today's world, influencer marketing is a prevalent approach that many businesses include in their strategies to influence their customers' decision-making processes (Belanche et al., 2021). Influencer marketing is a partnership between a brand and an influencer in which the influencer promotes the business's goods or services on multiple social media platforms (Ki et al., 2020). 61% of customers depend extensively on SMI for information about items they consider purchasing. Several studies have shown a significant effect of influencer marketing and how it impacts customer purchase behavior (Martínez-López et al., 2020).

- **H_2:** Social media influencers' credibility will influence followers' intention to use Metaverse digital marketplace.

2.7. Nexus between Psychological Traits: Consumer Neuroticism and Openness to Experience Adoption of the Metaverse Digital Marketplace

Neuroticism is the tendency to experience adverse emotions such as nervousness, irritation, unhappiness, or downheartedness. In psychology, neuroticism is an individual personality trait that echoes an individual's tendency toward emotional constancy (Flavián et al., 2022). Neuroticism is considered an adverse trait representing negative emotion, deprived self-regulation (i.e., incompetence to manage impulses), distress dealing with anxiety, a robust response to apparent fears, and the inclination to complain. Therefore, people with a higher tendency to neuroticism are nervous, insecure, and uncertain about adopting new things such as technologies (Wachowska et al., 2022). An "open to experience" individual is inclined to be intellectually curious, inventive, and creative (Forgeard et al., 2022). In contrast, *openness* to experience is defined as the individual's degree of desire to strive for novel practices such as technology acceptance and the development of new ideas (Forgeard et al., 2022).

Psychologists discovered that people with a higher proclivity for openness to experience see their surroundings differently and accept new ideas and technology (Watjatrakul, 2016). Thus, such people are inquisitive about innovative ideas and enthusiastic about adopting innovations. This trait has been widely employed in psychology to comprehend a person's thought progression. It forecasts numerous facets of individuals' behaviors in different domains, such as digital buying behavior (Agrawal et al., 2022), customer satisfaction (Brandtner et al., 2021), and solar energy adaption. The literature is replete with studies investigating the role of personality traits in determining various emotional reactions (Agrawal et al., 2022). In this research, the emphasis is on adapting to the new futuristic technologies such as the Metaverse marketplace. Thus, two expected personality traits related to this phenomenon have been used. Past studies that employed neuroticism and openness to experience to forecast people's decisions about technology use or adoption reported incongruent findings. For example, scholars (see Binyamin-Suissa et al., 2022)

found that neuroticism has no significant influence on internet use for social interaction or relationships (i.e., chatting).

At the same time, openness to experience was a significant predictor of internet usage for the mentioned purposes. Ample literature has advocated that people with higher-level emotional instability (i.e., high neuroticism) have different social media patterns than those with a higher tendency to be open to new experiences that heavily use such technologies (Watjatrakul, 2016). Such diversity lies within the diversity of neurotic and open-to-experience traits upheld by different people. A neurotic person can be more uncertain about experiencing new things. Therefore, their lack of familiarity makes them less likely to seek new experiences, such as Metaverse digital marketplace usage (Hollensen et al., 2022). Therefore, consumers with a higher tendency to neuroticism would possibly have an adverse influence on their openness to experiencing new technologies such as the Metaverse digital marketplace, and it is hypothesized that:

- **H_3:** Consumer neuroticism will negatively influence the openness to experience the Metaverse digital marketplace.

Past innovation theories, such as diffusion of innovation and inoculation theory, implied that the predisposition to accept a new behavior is influenced by several direct factors, such as information about the innovation, and involves some moderating factors (Kurpjuweit et al., 2018). These factors together function to shape the outcomes. Literature advocates that adopting new technologies or innovative services is predominately determined by their intrinsic characteristics, including personality traits (Hsu & Chen, 2021). It is claimed that among the Big Five personality traits, innovativeness is wholly related to openness to experience (Adomako & Tran, 2022). People who are more open to experiencing new technologies are more likely to adopt them owing to the modern attributes of the Metaverse. When they introduce innovation with a reliable source, they are more likely to adopt such innovation. Thus, the initial inclination, such as one's tendency to openness to new experiences, needs comparatively little persuasion for adaption. In the case of the Metaverse digital marketplace, PSR would directly influence its adoption. The new experience of trying out the Metaverse digital marketplace and this inclination would lead to a stronger relationship between PSR and the intention to use it.

Consequently, it is supposed that the relationship will be stronger among people with a higher degree of openness to new experiences (Ali, 2019). Such an assumption is based upon the innovative utility of the Metaverse, which will be positively perceived by those who are open to experience and will motivate them to use it. Those who would likely use the Metaverse digital marketplace because of its openness would also like to seek reliable information to support their idea (Hudson-Smith & Batty, 2022). Assume the information came from digital platforms with sources perceived to be more connected to people due to PSR (e.g., companies typically use such characters for promotion). In that case, they are likely to engage in adapting the Metaverse marketplaces with greater interest (Shen et al., 2021). Openness to experience as a moderator would regulate the intensity of the association of PSR with intention, contingent on the level of this trait upheld by the person in question. Thus, we postulated that

- **H_4:** Openness to experience new technologies (e.g., Metaverse experiences) will positively moderate the relationship between Parasocial relationships and followers' intention to use Metaverse digital marketplace.

3. Research Design

3.1. Method of Data Collection and Sample Characteristics

Due to the inaccessibility of the sample frame of social media users who followed social media influencers (SMI), we employed the purposive sampling approach to choose participants for the study, which was shown to be acceptable when only a small number of individuals had the necessary information (Sekaran, 2003). Several social media sites were used to disseminate the questionnaire, including Facebook, Twitter, and Instagram, which were assessed to be thematically most appropriate for the research environment. A screening question on the first page asked respondents to choose one of their favorite SMI they had previously followed on social media, which was offered to them. Those who did not pass the screening criteria were removed from the study and given a debriefing afterward. In addition, we included a short description of SMI to get more accurate responses from the survey participants. The name of the SMI mentioned in the questionnaire was included in the rest of the questionnaire. A filter was used to exclude straight-lining replies and those that did not target the identified SMI 1861 valid responses. Most responders (61.8 %) were female, and most were students (67.6 %). According to the data, the majority (78.2 %) belonged to the age range of 18 to 35 years old. More than half of the respondents identified Instagram as the most popular social media network, followed by Facebook (30.7 %) and Twitter (18 %).

3.2. Measures

We adopted measurements from the literature that had been well-established and verified. A modified version of Ki and Kim's (2019) measures social media influencer credibility to tap facets such as perceived prestige, expertise, etc. The nine-item multidimensional scale for PSR was adapted and modified by Chung and Cho (2017b). The followers' intention to use the Metaverse marketplace was measured using a three-item scale adapted and altered from Koay et al. (2021). The participants were instructed to specify their agreement on items about their intention to use the Metaverse marketplace endorsed by the SMIC on a five-point Likert scale. For instance, a sample item read: "It is likely that I will use Metaverse digital marketplace to buy products or services advertised by SMI soon." Lastly, respondents were requested to rank their agreement with the items about personality traits – "neuroticism and openness to experience"- adapted from Watjatrakul (2016) and modified for this study. Two researchers checked several metrics separately to verify that there was no ambiguity in understanding the questionnaire questions. After that, a pilot test with forty participants was conducted to see how well the questionnaire responded. For all variables, Cronbach's alpha varied from 0.72 to 0.93, suggesting that internal consistency was good (Sarstedt et al., 2020).

4. Findings

The analysis was initiated with descriptive analysis, which involves the normality assessment of the data, followed by correlation analysis. The results of the normality assessments revealed a few (83 less than the 15% threshold) outlier cases that were removed from the data to attain the normality required to meet the criteria for the co-variance structural equation modeling. The correlation and normality statistics are presented in Table 1.

Table 1: Descriptive and Correlation Statistics

Variables	Mean	SD	PR	SMIC	FIMM	CN	OET
PR	4.25	1.056	1				
SMIC	4.59	1.134	0.24*	1			
FIMM	4.13	1.340	0.38*	0.46*	1		
CN	3.03	1.213	-0.32*	-0.17*	-0.12*	1	
OET	4.61	1.566	0.23*	.048*	0.41*	-0.23*	1

**. Correlation is significant at the 0.05 and 0.01 levels.*

4.1. Common Method Bias

Procedures and statistical remedies were adopted to lessen the chance of common procedure bias arising in a cross-sectional design research study to limit the risk (Podsakoff et al., 2003). Respondents were advised that there were no right or incorrect responses and that their honest replies were the most important. This was in terms of procedural redress. Additionally, they were guaranteed their confidentiality (Podsakoff et al., 2003). Harman's single-factor test was used to determine the statistical solution for this problem. The findings revealed that the first component explained 35% of the overall variance, which was lower than the suggested criterion of 50% of the variation described. Next, we did a very detailed collinearity test and found that the VIF values ranged from 1.076 to 2.183, which is below the threshold level of 3.3, which shows that common technique bias is not a big problem in this study, as previously stated (Kock, 2015).

4.2. Confirmatory Factor Analysis

SEM is a versatile method for analyzing both experimental and non-experimental data. Furthermore, it applies to both cross-sectional and longitudinal data. This approach is widely used in various fields due to its adaptability and generalizability (Memon et al., 2019). In most cases, the data used to verify the complicated theoretical model created with this approach are connected. The term "model-data fit" is used to describe this connection. Any theoretical model may be tested for fitness using the current state of empirical knowledge. SEM is a comprehensive sample approach, often requiring a sample size of 200 or more to be deemed reliable. The following three criteria typically determine the size of the sample: the distribution type (observed variables), the complexity of the model, and the estimating technique (Henseler et al., 2009; Purwanto & Sudargini, 2021). Both the

route analysis model and the measurement model are assessed using SEM. Additionally, it considers more complex models like multilevel and growth models. However, for the sake of this investigation, this research uses the co-variance-based approach that is mainly suitable for theory testing.

To do so, a confirmatory factor analysis (CFA) is used by SEM to evaluate the measurement model (Cheah et al., 2020). It is distinct from Exploratory Factor Analysis (EFA) because it uses empirical evidence to validate the factor definition discovered via previous research. The measurement is validated by assessing how well the model fits the data using CFA (Sarstedt et al., 2014). The path models among the latent variables are evaluated after the fitting of the model has been completed. Structural Equation Modeling (SEM) was employed using AMOS for various reasons. First, the SEM method was used to evaluate the fitness of the suggested research model. Second, it is useful when the research aims to test a crucial endogenous component (e.g., FIMM) using a theoretically complex model (Blunch, 2012). Third, it is more capable of dealing with complicated structural models such as those used in the current study, which includes many latent components, indicators, and complex interactions (e.g., moderation) as part of the research model (Hair et al., 2019). In addition, the SEM model is useful for examining the measurement scale structure using CFA. The initial model revealed issues with the goodness of model fit. Therefore, two items were deleted to attain the model fitness; as; CMIN = 1189.36, df = 509, CMIN/df =, CFI =.96, TLI =.94, IFI =.96, GFI =.95, and RMSEA = 0.041. After achieving the goodness of model fit established on the six suggested indices, the estimation of the convergent validity was assessed. The findings demonstrated acceptable values of the Average Variance Extracted (AVE = $\geq$ 0.5) and Composite Reliability (CR = $\geq$ 0.8) for the PR, SMIC, FIMM, CN, and OET variables. The standardized item loadings are reported in Table 2.

Table 2: Standardized Loadings

Construct	Items	Loadings
Parasocial Relationship (Friendship dimension)	PRF1	0.69
	PRF2	0.89
	PRF3	0.84
Parasocial Relationship (Understanding dimension)	PRU1	0.74
	PRU2	0.93
	PRU3	0.85
	PRU4	0.37*
	PRU5	0.63
	PRU6	0.88
Social Media Influencer Credibility	SMIC1	0.90
	SMIC2	0.79
	SMIC3	0.81
	SMIC4	0.73
	SMIC5	0.41*
Followers' intention to use Metaverse digital marketplace	FIMM1	0.85
	FIMM2	0.70
	FIMM3	0.92
Neuroticism	CN1	0.88
	CN2	0.79
Openness to experience new technologies Metaverse	OET1	0.91
	OET2	0.87

**Items deleted*

Following the convergent validity, the Fornell-Larcker criterion values were evaluated to estimate the discriminant validity (see Table 3) and were found within the acceptable cut-offs.

Table 3: Validity Statistics

Variables	CR	AVE	α	PR	SMIC	FIMM	CN	OET
PR	0.927	0.651	0.903	(0.806)				
SMIC	0.883	0.656	0.845	0.28	(0.809)			
FIMM	0.866	0.686	0.797	0.39	0.43	(0.828)		
CN	0.822	0.699	0.743	-0.19	-0.09	-0.41	(0.836)	
OET	0.884	0.792	0.839	0.47	.015	0.29	-0.37	(0.899)

**. Correlation is significant at the 0.05 and 0.01 levels.*

4.3. Structural Model for Hypotheses Testing

This research postulated four hypotheses, among them three on direct influence and one on moderating influence. To validate these postulations, this research employed two structural models on AMOS 24.0. The initial model was employed to unravel the postulated direct influence of PSR (H1) and (2) SMICs (H2) on FIMM. Besides, this model tapped the postulated influence of consumer neuroticism on OET (H3). The SEM path analysis revealed that PSR has a positive (β=.17) and significant (p = 0.001) influence on FIMM. The results also showed that SMIC has a positive (β=25) and significant (p= 0.001) influence on FIMM; thus, H1 and H2 were supported. Similarly, consumer neuroticism was a negative predictor of OET (=-0.35, p = 0.001), and H3 was also supported (see Figure 2 and Table 4).

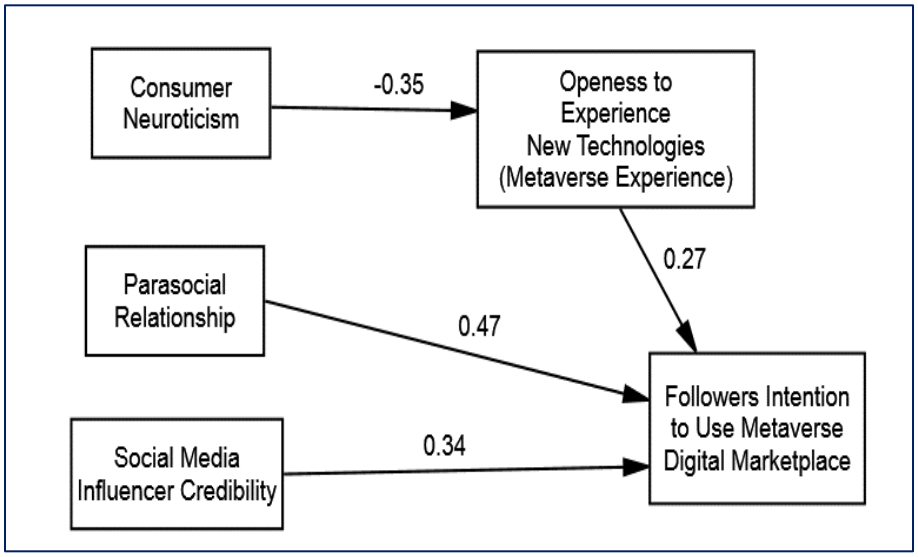

Figure 2: Structural Model (AMOS output)

Onwards, the second structural model was used to validate the moderating effect of the OET in the relationship between PSR and FIMM as postulated in H4. Therefore, an interaction term (PSR_X_OET) was added after computing the standardized variables in SPSS. The SEM study found that OET positively affects the relationship between PSR and FIMM (β= 0.25 and p = 0.001). This result suggests that OET helps make a more robust relationship between PSR and FIMM. Thus, H4 was supported and confirmed that a greater extent of OET leads to a higher degree of FIMM. As a result, followers who are more open to trying out new technologies like Metaverse will be more likely to use Metaverse marketplaces.

Table 4: Standardized Regression Weights

Paths	β	*t-value*	*p-value*	R^2	Results
Parasocial Relationship -> FIMM	0.47	4.15	0.001	0.41	H_1 Supported
Social Media Influencer Credibility -> FIMM	0.34	5.54	0.001		H_2 Supported
Consumer neuroticism -> OET	-0.35	3.79	0.027		H_3 Supported
Parasocial Relationship _X_OET-> FIMM	0.12	6.31	0.001	0.47	H_4 Supported

X=Moderating Effect, FIMM=, OET, and R^2= Variance

5. Discussion

This research analyses the elements influencing the acceptability of Metaverse technology, which may impact users' behavior and the relationship between PSR and user behavior. As the Metaverse has grown in importance, there has been an increase in conversations about the use of wearable technology in marketing research and applications. Customers may see virtual versions of their purchases in the real world thanks to augmented reality (AR) technologies built into several merchants' digital shopping platforms, including Amazon.com, Essie, and IKEA. The epidemic has accelerated the spread of e-commerce around the globe. In the meantime, growth rates are declining, from 26 percent in 2020 to 19 percent in 2022, with rates closer to 10 percent expected. In most nations, shoppers still spend at least six times as much in shops as they do on the internet. Influencer marketing's success was expected to be influenced by PSR and SMI credibility, explored in the model. Because of these results, this study's findings reveal that SMI is becoming more prevalent, altering the landscape of influencer endorsement. Because SMI has significant power over their followers, brand marketers increasingly depend on them to recommend their goods and services. Despite being hailed as one of the most extensively used promotional tactics, SMI marketing has received little attention in academic research, which tends to concentrate more on traditional celebrity endorsements and other forms of traditional advertising (Ki & Kim, 2019). This is a crucial problem for marketers, as a lack of basic knowledge of how SMI marketing is handled may harm the efficacy of the endorsements received. A model was built to analyze the effect of SMI efforts to control various crucial but often neglected downstream outcomes (i.e., PSR, perceived self-serving motives, and purchase intention).

This research examined the phenomenon of Metaverse digital marketplace usage and assumed four hypotheses. The result of the H_1 and H_2 validated the critical aspects of the ELM and supported the usefulness of influencer marketing in a digital era. The results suggested that parasocial relationships and SMI can influence the usage of the Metaverse digital marketplace. This aligns with the literature offering that SMI is growing in popularity among consumers, prompting academics to study how influential people might affect advertising, communication, and marketing campaigns from various angles ((Jin et al., 2021; Kim, 2020). Influencer marketing requires a thorough understanding of how and

why value is created and the variables that affect value creation. Furthermore, unlike celebrities, SMI is a producer of content whose fame and reputation are built mostly via two-way interactions with their fans through social media. Influencer-follower connections and how interactions between influencers and followers affect followers' perceptions of their relationships are key concepts to grasp. Based on these results, it has been indicated that PSR is a significant component to consider when assessing the strength of SMI and the followers' views of fairness in the communication process. By extending PSR to an interpersonal communication environment, our results add to the literature on the subject. It is vital for those who study PSR in today's dialogue-based media environment to pay attention to what the researchers say.

The first significant finding is that PSR will positively influence the followers' intention to use the Metaverse digital marketplace. Literature has shown that intention is positively connected to PSR, which is consistent with the results of this study (Jin et al., 2021; Kim, 2020). The second significant finding is that SMI credibility will positively influence the followers' intention to use Metaverse digital marketplace, which was positively related to PSR (Shen et al., 2021). Besides, the perceived credibility of influencers did seem to be related to the strength of the PSR. It may be explained that being an expert in a given topic or being trustworthy did not appear to aid in developing the PSR among the audience. While this finding contradicts our expectations, it is essential to note that it is consistent with the findings of a recent study by which researchers (Arora et al., 2019; Lou & Yuan, 2019b). Therefore, we speculate that followers may be skeptical of the influencer's motives when a trustworthy influencer shares branded posts. The influence of the trustworthiness cue may be overcorrected in consumer-related judgments due to this phenomenon. However, more qualitative and quantitative research will be needed in the future to back up this assumption. Our findings revealed that perceived neuroticism was adversely associated with openness, which was not surprising and consistent with the notion of personality traits. Past studies also identified that higher uncertainty could result in less openness to innovative behavior (Binyamin-Suissa et al., 2022; Watjatrakul, 2016).

In a similar vein, the link between consumer neuroticism will negatively influence the openness to experience the Metaverse digital marketplace; when considered, the findings highlight and emphasize the importance of public relations (PR) in the relationship between influencers and advertising outcomes and consumer behavior. From this data, it can be deduced that openness to experience new technologies (e.g., Metaverse experiences) will positively moderate the relationship between PSR and followers' intention to use the Metaverse digital marketplace**.** This aligns with the idea that fairness signals during communication and interactions and messages that show fairness can have positive effects. However, the sample's demographic attributes can also be be valuable to understand these results. Most of the respondents were from the young generation and were mainly influenced by SMI (H1). Similarly, the greater extent of the digital media usage of younger people leads them to develop strong parasocial relationships, and this is also observed in the results and found PSR significant predictor of the intention to use Metaverse.

5.1. Theoretical Implications

Exploring consumer behavior establishes a foundation of marketing practices (Kalolo, 2019). Recently, new technologies such as virtual reality (VR) and augmented reality (AR) have gained substantial traction in the field of marketing (Li & Ito, 2021; Raja & Lakshmi Priya, 2022; Reis et al., 2018). Researchers are trying to understand consumer behavior with new technologies, but very few consumer behavior theories are used in marketing (Giovanis & Athanasopoulou, 2018; Opute et al., 2020). Some of the approaches that are generally used to address consumer behavior are: theory of planned behavior (Memon et al., 2019), self-determination theory (Chiu, 2022), technology acceptance model (Alkhatib & Bayouq, 2021; Benavides et al., 2020), uses & gratification theory (Khan et al., 2021) and innovation diffusion theory (Ho, 2022). These theories have successfully predicted consumer motivation, behavioral intentions, and technology adoption. However, they fail to explicate the effectiveness of promotional messages and content marketing on consumers' change in attitude and decision-making. Therefore, these research gaps still exist in the marketing literature related to the new technologies (Elia et al., 2020; Flavián et al., 2019; Marasco et al., 2018). Recently, academicians have highlighted the lack of theory-based research in the context of new technologies and marketing (Dorcic et al., 2019; Venturini, 2022). Although several theories have been adopted in the marketing field to study consumer behavior, none is currently being used with a perspective on the effectiveness of the promotional strategy applied to enhance the adoption of new technologies. This research advances the understanding of adopting the Metaverse by integrating the previous theories. In doing so, the research has verified the notions of ELM, TAM, and personality traits. The study proposed three hypotheses directly related to the ELM's postulations Likewise, the personality traits were also examined (see H4-5) and verified that the individual personality plays critical role in determining the overall technology adoption.

One of the most exciting new technologies to emerge in recent years, the Metaverse, has the potential to reshape and expand the scope of digital services. The digitalization of services is now the current trend for increasing corporate efficiency. This is the first research to look at the fundamental mechanism of how PSR impacts consumers via the use of the Metaverse. When it comes to online content, we have come a long way from the days of read-only information on desktop PCs. For the first time in history, the boundaries between virtual and actual settings are becoming more blurred. The result is that the world is now immersed in the most significant wave of digital transformation in history. The advent of emerging technology has the potential to seamlessly connect the physical and digital twins and eventually reach the internet, which will include immersive and virtual environments.

5.2. Practical Implications

Regarding SMI or influencer advertising, the research has primarily looked at how source credibility influences the effectiveness of sponsored advertisements posted by influencers or the formation of follower–influencer relationships rather than sponsored advertisements. This research is the first to suggest and illustrate that followers' views of the

communication process with influencers play a vital role in creating influencer–follower relationships and the consumption-related behaviors of followers. We can now better understand the attractiveness of influencers and the processes that affect customer behavior via Metaverse and influencer advertising, which are currently under-understood. An important goal is to expand the theoretical frameworks and conceptualizations connected to the development of Metaverse and PSR in interpersonal communication via the findings of this study.

For the Metaverse to be able to possess eternal, shared, concurrent, and 3D virtual environments, these spaces must be concatenated into a perceived virtual world. Interplanetary travel and communication would be possible if the limitless and permanent virtual-physical integrated cyberspace could accommodate an unlimited number of users, not just from the Earth but also from other planets (e.g., the moon and Mars). As a result, technology enablers and the technical criteria that go with them are unprecedentedly challenging to meet. Particularly noteworthy aspects of the Metaverse are the collection of virtual worlds and the demanding activities in such communal virtual settings, where human users will spend much time.

5.2. Limitations and Future Research

Even though this research uncovered meaningful findings on how Metaverse and SMI credibility work by concentrating on the importance of Parasocial interactions, the study's limitations should be addressed. Developing related technologies has sparked much interest in the Metaverse in the last few years. Race, gender, and even physical impairment should have less impact in the Metaverse, which would be a win-win situation for everyone. As a relatively new field, the Metaverse has room for advancement. Despite the enormous potential of the Metaverse, the business has already begun preparations. It is pumping money into it at a frenetic pace, but there are few academic papers on the Metaverse to help steer its growth scientifically. This work focuses on a few examples of socially beneficial uses. This study also has several limitations, which should be considered for future research. It has been employed in past research, and we think it to be the most reasonable approach to record survey respondents' online survey experiences. Rather than asking participants to identify an influencer they were familiar with, we asked them to name the first person who came to mind if they were confused about a particular influencer. It is important to remember that influencers may have a different audience than the ones they serve. Future studies may aim to reproduce the results in a more confined scenario (for example, influencers in a particular industry or issue).

The second area of research that could be fruitful is investigating the impact of different social media platforms on influencer credibility, effectiveness, and brand-related outcomes. This would be particularly relevant considering the wide availability of social media platforms and our exploratory discovery that PSR is generated differently across social media channels. It is necessary to research the substantial influence that celebrity participation on social networking sites has on PSR. As a result, more incredible studies

into this area may be required. Depending on the results of future tests, this discrepancy may be treated as a moderator in the model.

Third, we could not ascertain which social media platforms participants were using to follow influencers, which resulted in a significant amount of informed guessing on our side. The reason for developing this article is that various platforms may adopt several features that alter users' views of their listed influencers and their interactions with those influencers. Future research might duplicate it and analyze the proposed model on a single media platform, similar to what was done in this one. It is necessary to identify whether or not PSR has a role in confirming or disproving the hypothesis to move on. Future research may examine a variety of marketing- or advertising-related outcomes, such as purchase intentions or actual purchases, to see if or not the hypothesis was confirmed or disproven in the first place. Finally, in the current research, we used a limited sample size, which may or may not represent the larger population. To see if the results can be generalized, we think more research with larger and more representative groups of people will need to be done.

6. Conclusion

Influencers cannot stress the need to establish attractive character traits that convey commonalities to their followers to build PSR with their followers in practice. The treatment of followers by influencers and whether the connection with influencers is two-way and partly reciprocal are all crucial factors to consider when developing relationships. Influencers must establish good ties with their followers by demonstrating acceptable etiquette and respect in their interactions and reciprocating their followers' expectations and emotions. Additionally, to promote the Metaverse marketplace usage among the masses, marketers may focus on selecting the SMI with expertise in a particular product category. Thus, the influencers with expertise in specific domains may engage in positive behavior when promoting the Metaverse marketplace. Furthermore, individuals with higher uncertain attributes (e.g., neuroticism), in particular, engage in adoption when SMI provide accurate and relevant information to their followers.

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