

The Impact of Social Media Influencers on Consumer Purchase Intention: The Mediating Role of Consumer Engagement under Deceptive Digital Cues

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Abstract

The present study examines the effect of influential factors on purchasing intentions of consumers in sustainability-oriented digital marketing environment. A research design was used was the quantitative, cross-sectional. The collected data was obtained using a structured questionnaire and all active social media user population. The conceptual model proposed was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) software that is runned with the program of SmartPLS. All the statistical procedures were used to assess reliability, validity, discriminant validity, model fit and hypotheses testing. The outcomes confirmed that there is significant influence of Influencer Perceived Credibility on Green Brand Authenticity ($\beta = 0.408$, $p < 0.001$) and Consumer Engagement ($\beta = 0.457$, $p < 0.001$). In the same manner, Virtual Influencer Characteristics also positively influence on Green Brand Authenticity ($\beta = 0.481$, $p < 0.001$) and Consumer Engagement ($\beta = 0.433$, $p < 0.001$). The influence of Consumer Engagement on Purchase Intention is significant ($\beta = 0.393$, $p < 0.001$), while Green Brand Authenticity is not significantly influencing Purchase Intention ($\beta = 0.069$, $p = 0.274$). The actual brand trust had significant influence on Purchase Intention ($p < 0.001$ and $\beta = 0.461$), while the moderating function of brand trust was not significant. These results offer a basis for researchers and practitioners to improve consumer engagement, trust in brands and purchase intent within the context of sustainability marketing strategies, using social media influencers.

Keywords: Influencer Credibility; Virtual Influencers; Green Brand Authenticity; Consumer Engagement; Brand Trust; Purchase Intention; Influencer Marketing.

Introduction

Digital technologies and social media are evolving quickly, creating a significant shift in the way the world markets with a much greater focus on the ability to communicate with consumers in an interactive and personal way. Now, social media influencers are becoming reliable opinion lead-

ers in the digital world, influencing consumer attitudes and preferences with their content created and interacted with online. Platform specific examples of Instagram, TikTok, Facebook and YouTube have added a commercial relevance to the marketing work of influencers, turning influencers into an indispensable piece in the modern day and age to digital advertising strategies (Lou & Yuan, 2019; Sokolova & Kefi, 2020). Influencers are the new faces for advertising information, consumer recommendations and reviews because they are more relevant and authentic than the traditional way of advertising using celebrity endorsement or conventional advertisements (Djafarova & Rushworth, 2017). Thus, the influencer marketing method has emerged as certainly among the most quickly expanding digital communication approaches in today's business environments.

With the rise of social and digital communication technologies, and the explosion of social media platforms in use, the global digital marketing industry has undergone rapid transformation. From networking apps to powerful commercial ecosystems, social media like Instagram, TikTok, YouTube, and Facebook has transformed into the marketplace for engaging potential customers through influencer-generated material. This is why influencer marketing is one of the most prevalent forms of marketing when it comes to promoting and reaching people. Because it allows marketers to engage in more personalized, interactive and relatable communication with their audiences (Campbell & Farrell, 2020; Lou & Yuan, 2019). In the modern digital landscape, where customer engagement and online sales can be a real power to competitive brands, a growing trend has emerged: businesses of various industries working with social media influencers. With the amount of competition that there is online, in a social world, the businesses of many industry are now actively getting into the partnership with the social media influencers for the enhancement of their brand's visibility as well as customer engagement and performance while dealing with the sales online.

In today's digital marketing landscape, social media influencers are a major force shaping consumer behavior, allowing businesses to engage consumers through interactive online communication that shapes their attitudes and intentions to buy. While influencer marketing has proved to be a very effective tool for product promotion and branding, a growing number of consumers are skeptical about the trustworthiness and veracity of influencer-generated content, such as hidden endorsements, artificial images, inflated statistics, and astroturfing (Boerman et al., 2017; Evans et al., 2017). Although positive influencer attributes like credibility, attractiveness, authenticity and trustworthiness have been extensively studied in literature, less research has been conducted on the negative consequences of deceptive digital cues on consumer engagement and purchase intention (Lou & Yuan, 2019; Sokolova & Kefi, 2020). In addition, the mediating effect of deceptive digital environment when consumers engage in buying in the context of social media commerce is not fully explored especially in a fast-evolving digital media landscape where consumers depend on the recommendations of others on social media for their buying decisions.

Literature Review

With the advent of social media platforms, individuals who influence large audiences on various platforms have emerged as a key area of digital marketing that affects how consumer attitudes, opinions and purchasing decisions are formed through interactive online communication. Audiences are affected by the behavior of influencers, defined as people with the ability to influence audience in terms of credibility, expertise, attractiveness and being an active member of social

media sites (Lou & Yuan, 2019). Influencers continuously make branded content through platforms like Instagram, TikTok, Facebook, and YouTube, which directly influence the consumer engagement rate and purchasing decisions. Today, businesses are completely embracing influencers because consumers tend to see the content created by influencers as more authentic and relatable to them than traditional methods of advertising (Sokolova & Kefi, 2020). In the digital age, with its numerous competitive environments, influencer marketing has emerged as a crucial strategy for organizations aiming to cultivate a loyal customer base and boost the likelihood of purchasing. As a result, influencer marketing has become a necessary measure for companies seeking to enhance their customer relationships and influence consumer buying decisions in the fastest-paced digital landscape.

Theoretical Foundation

Stimulus–Organism–Response (SOR) Theory

The Stimulus–Organism–Response (SOR) Theory, which is the most important theoretical lens for understanding the impact of social media influencers on purchase intention in deceptive digital cues is the main theory used in the present study. The SOR model consists of external environmental stimuli that shape the internal psychological states of an individual, which in turn will result in behavioral states. The SOR model was originally proposed by Mehrabian and Russell (1974). In the context of digital marketing, the engagement of influencers in creating content is an external stimulus that influences consumers' emotions and cognition, thus impacting purchase intention outcomes (Eroglu et al., 2001). With the fast-paced evolution of social media and the Internet, recent studies have turned to the SOR framework as a method for explaining how digital interactions affect consumer decision-making processes (Bui et al., 2025; Yang et al., 2025). Hence, the SOR theory is very applicable to research on the impact of the stimulus of influencer marketing on engagement and purchasing behavior in an environmentally manipulated digital context.

Persuasion Knowledge Model (PKM)

In line with the main theory, the current research additionally uses the Persuasion Knowledge Model (PKM) as a secondary theory to describe consumers' knowledge of and reaction to persuasive marketing strategies in a digital context. Consumers gain persuasion knowledge over time which allows them to notice manipulative advertising tactics and/or deceptive promotional tactics used (Friestad and Wright, 1994). However, in social media environments, consumers are increasingly aware of techniques that can persuade them to have more trust, interact, and consider buying a product, such as the hiding of the sponsor disclosure in a video comment, the use of fake urgency, fake reviews, and even exaggerated advertising claims (Boerman et al., 2017). Hence, the compendiousness of the PKM is high for comprehending the impact of misleading cues on consumers' thoughts and psychological absorption of influencers' contents.

Supporting and Negating Views

Several pieces of research have backed the view that social media influencers could influence information acquisition positively as they are perceived as credible and personal information source by consumers and thus influence purchase intention. Lou and Yuan (2019) argue that credibility, expertise, authenticity of influencers build consumers' trust in a promoted product

and leads to higher levels of intention to buy a recommended brand. Those who support influencer marketing also point out that through interactive communication and tailored content, influencers build emotional connection with their followers, and thus influencer-created promotions make an impact more effectively than traditional advertising (Jin & Ryu, 2020). In digital commerce, many organisations are thus turning to influencer marketing to enhance their customer engagement and sales results.

Social Media Influencers and Consumer Engagement

The current body of research indicates that social media influencers can have a positive impact on consumer engagement in digital marketing scenarios. Many people see influencers as credible attractive people who build relationships with their followers via interactive communication and personalized content creation, owing to the perceived credible, attractive and relatable nature of the them (Lou & Yuan, 2019; Sokolova & Kefi, 2020). Because influencer communications aren't as stereotypical or as an advertisement, consumers are more likely to like, comment on, share, and discuss the content they create. More recent research still goes on to suggest that factors such as personal credibility and authenticity in the posts they publish play crucial roles in developing emotional attachment and enhanced engagement behavior among social media users, particularly in the context of Instagram and TikTok marketing (Barta et al., 2023; Hudders et al., 2021). As a result, the modern way of shopper marketing is gaining traction as a way of boosting consumer interaction and engagement in areas of social commerce.

Mediation Role of Consumer Engagement

A lot of researchers have endorsed the mediation of consumer engagement in the influence–purchase intention continuum between influencers in social media and consumers. The SOR model defines a stimulus as something from the outside that acts on internal psychological processes like engagement, which then affect the behavioural response such as the intention to purchase (Mehrabian & Russell, 1974). Research show that influencers can have a positive impact on within the purchase intention through emotionalized conversation content that further enhance consumers' interaction, trust and attachment with the promoted products (Lou & Yuan, 2019). Consumer engagement is also found to partly or fully mediate the link between influencer credibility and consumer purchasing in social commerce settings as per the recent studies conducted by Barta et al., (2023) and Yang et al., (2025).

Mediation Role of Consumer Engagement

The moderating effects of deceptive digital cues in influencer marketing contexts have also been supported by several different studies, which found that deceptive promotional strategies could have huge impact on consumers' psychological reactions and purchasing tendencies. Consumer trust, engagement, and purchase intention is negatively impacted by deceptive cues of the digital medium, including forced urgency tactics, altered visuals, reduction in disclosure of sponsorship, and endorsements that fail to provide consumers with adequate clarity on sponsorship (Boerman et al., 2017). Previous studies show that in line with the Persuasion Knowledge Model, when a consumer is aware of manipulated goods, he/she tends to be more skeptical about the content created by influencers, which proves to be the less effective option for the promotion of goods (Friestad & Wright, 1994). Recent studies also suggest that there are significant moderating effects between influencer credibility and content engagement, as consumers are increasingly seek-

ing transparency and authenticity in social media messages (Bui et al., 2025; Vrontis et al., 2021).

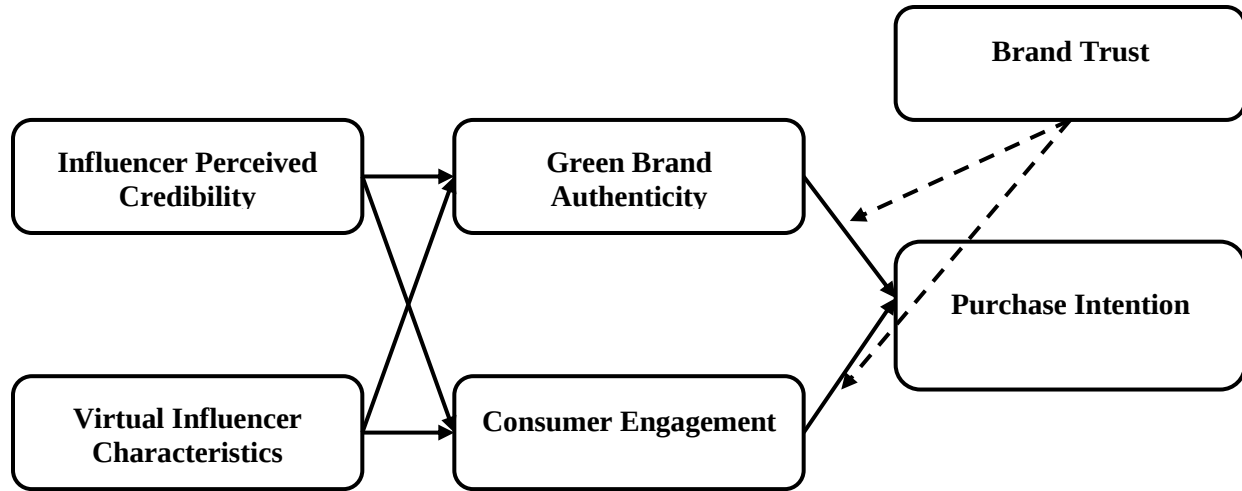


Figure 1 Conceptual Framework

Hypothesis Development

In digital marketing, perceived credibility, as a specific aspect of influencers, plays a pivotal role in consumers' brand evaluation. Credibility is a number that is determined based on how consumers feel that the influencers are credible, reliable and knowledgeable sources. In Signaling theory, credible influencers act as positive signals of information that decreases the information asymmetry and raises consumers' trust on the authenticity of brand claims. If influencers are seen as credible, there is a higher chance that the brand they are promoting is indeed the real thing, meaning it is in truth committed to the environment and sustainability goals. The findings indicate that the credibility of the influencers has a strong impact on the consumers' beliefs of brand authenticity since consumers perceive the authenticity of endorsed brands as their influencers' positive reputation is transferred (Sokolova & Kefi, 2020; Lou & Yuan, 2019).

H1: Influencer Perceived Credibility positively influences Green Brand Authenticity.

Influencer Perceived Credibility and Consumer Engagement

Consumer engagement is defined as a combination of consumers' cognitive, emotional and behavioral involvement with brand related content. Perceived credibility is highly significant in terms of engagement, as it is easy to see that consumers are more likely to be touched by content created by trustworthy and knowledgeable influencers. Based on the SOR model, one's credibility as an influencer is a stimulus which Evokes the psychological response that results in increased engagement. If consumers view influencers as trustworthy and believed source of information, they will spend more time viewing, liking, commenting on and sharing the content (Hollebeek et al., 2014). Experts suggest that credible influencers can push for increased engagement by their followers: they are seen as reliable and followers like when they give recommendations and value them (Sokolova & Kefi, 2020; Hudders et al., 2021).

H2: Consumer Engagement is positively influenced by H2: Influencer Perceived Credibility.

Virtual Influencer Characteristics and Green Brand Authenticity

Rising digital communications aspects in marketing, including virtual influencers, have emerged. They embody various features such as attractiveness, authenticity, human-likeness and social presence that are crucial for consumer perceptions of a brand. The Signaling Theory defines the characteristics that make a virtual influencer as a visible signal for consumers to assess the credibility and authenticity of the brands promoted by the virtual influencers. Consumers are likely to link these positive attributes to the endorsed brand if they feel that the virtual influencers are real and relatable. If someone feels that the virtual influencers are “real” and “relatable”, they are more likely to associate these positive attributes with the endorsed brand.

H3: The characteristics of virtual influencers have a positive impact on Green Brand Authenticity.

Virtual Influencer Characteristics and Consumer Engagement

Virtual influencer features are vital to influencing customer interactions in digital space. Engaging, genuine, and lifelike-looking virtual influencers draw viewers to content and stimulate engagement with the posts. In the SOR model, they serve as stimuli that shape the emotional and cognitive reactions and responses of consumers, resulting in increased consumer involvement. According to the research, users who consume a hard sell engage more with virtual influencers with high social presence and authenticity by liking, commenting, sharing, or discussing the content (Byun & Ahn, 2023; Liu et al., 2026).

H4: Consumer Engagement can be affected positively by Virtual Influencer Characteristics.

Green Brand Authenticity and Purchase Intention

The authenticity of the green brand is related to the consumers' impression of a brand that is “genuine” in living up to its promise of sustainability and commitment to the environment. When it comes to eco-credentials, the real deal is seen as ‘honest, transparent and consistent’. Signaling Theory claims that authenticity is the act of diffusing uncertainty and boosting consumers' trust in green products. Authenticity has been shown to have a positive impact on consumers' brand attitude and trust (Vu et al., 2022; Morhart et al., 2015), and has been over and over again confirmed that the degrees of concern and positive attitude will increase when consumers perceive a product to express authenticity.

H5: The Green Brand Authenticity has a positive relationship with Purchase Intention.

Consumer Engagement and Purchase Intention

Consumer engagement is an important indicator of Purchase intention, as when they are involved, they form deeper emotions and commitment towards a brand. From the SOR perspective, engagement is an internal psychological response that connects external marketing stimuli and observers resulting in external behavioral responses. Highly engaged consumers tend to have positive trust in brand messages, join brand communities and form positive attitudes towards products, which leads to greater intentions to buy future products (Hollebeek et al., 2014; Dessart et al., 2015).

H6: Consumer Engagement positively influences Purchase Intention.

Moderating Role of Brand Trust Between Green Brand Authenticity and Purchase Intention

Brand trust is the confidence consumers have in a brand or company to be reliable, honest and capable of delivering as they promise. Therefore, trust is one of the key factors for sustainable consumption as it is very plausible and important to consumers to have uncertainties about environmental claims in the context of sustainable consumption. Consumers often tend to believe companies' sustainability claims when they trust the brand and they are more likely to put their credit to a company when they believe it's authentic. For instance, previous research has found that increased trust has an added beneficial effect on brand outcomes (Delgado-Ballester & Munuera-Alemán, 2001; Poulis et al., 2026).

H7: The relationship between Green Brand Authenticity and Purchase Intention gets stronger when a company's Brand Trust is high, throughout the mediation of Brand Trust.

Moderating Role of Brand Trust Between Consumer Engagement and Purchase Intention

There is also a strong link between consumer engagement and brand trust, as this credibility is crucial in explaining why a consumer clicks. However, consumers who are already engaged in a brand's content tend to address it a lot, but the percentage of who wants to buy depends on the degree of trust that they have in the brand. Trust eases the fears of the others and enhances their confidence in the quality of the product and in the reliability of the brand. Existing research has identified that high levels of trust have a positive impact on engagement effectiveness resulting in behavioral intentions and purchases (Delgado-Ballester 2004; Hollebeek et al 2014).

H8: The relationship between Consumer Engagement and Purchase Intention is mediated by the variable of Brand Trust, with the sense that the relationship becomes stronger the higher the levels of this variable.

Methodology

Research Design

Based on the above, the presented study uses a quantitative research method to investigate how consumer engagement mediates the relationship between deceptive digital cues and consumer purchase intention when influenced by the social media influencers. The use of quantitative research in digital marketing and in the study of consumer behavior is broad because the researcher is able to statistically measure the relation between the various variables and give the results of the study to larger population (Hair et al., 2021). This study was deemed suitable for quantitative method due to the fact of measuring the consumer perception, consumer engagement behaviour and purchasing intention in a structured survey instrument and using statistical method to analyse the results. A quantitative approach was used in recent studies that explored the psychological and behavioral aspects of digital consumers in their interaction with influencers and influencers with consumers, and social commerce (Barta et al., 2023; Yang et al., 2025).

Sampling

In the current study, a structured online questionnaire is used as the main tool of data collection to collect the answers from the social media users who actively responded to the influencer-generated message. Online questionnaires are well suited for digital marketing and consumer behaviour research by allowing it to be used to gain access, increase ease, and communicate with large groups in various geographical locations effectively (Sekaran & Bougie, 2020). The questionnaire will be shared via social media platforms with those who are active on social media, who know about the use of influencers in marketing. Online survey techniques become an increasingly popular source of data for recent studies building on the field of influencer marketing and social commerce (Barta et al., 2023; Yang et al., 2025), as they help researchers gain deeper insight into the actual perception, behavior of consumers, and intentions for purchasing products in digital contexts. Furthermore, online questionnaires enhance anonymity of completion and decrease answer bias, which facilitates people to state their perspectives on the misleading electronic clues and persuasive material developed by influencers (Hudders et al., 2021; Bui et al., 2025).

The target population in the present study is active users of social media who actively follow influencers and interact with influencers' content on digital platforms like Instagram, TikTok, Facebook and YouTube. This is the customer who can be found regularly in online settings subject to influencer marketing activities, sponsored content, product endorsements, and tricked by misleading digital cues. The study offers a special focus on digitally active consumers who have relevant experience with digital communication of products from influencers and social commerce experiences (Lou & Yuan, 2019). Given their regular pattern of using social media and shopping online, recent research suggests that younger users (especially Generation Z and Millennials) are some of the most active players of the influencer marketing ecosystem (Barta et al., 2023; Yang et al., 2025). Thus, social media users are an appropriate target population that can be considered in the discussion of consumers' engagement in and buying intent in deceptive digital conditions.

The study uses a convenience sampling method to ensure that they can easily access social media users who actively interact with the content created by influencers in digital settings. Convenience sampling is popular in social media and digital marketing research as the researchers are able to access respondents through online platforms and digital communities easily (Sekaran & Bougie, 2020). The aim of this study is to obtain data by sending questionnaires to around 385 subjects in order to have adequate power to analyze the data by using the structural equation modeling (SEM) technique which is applied by using software SmartPLS. Studies exploring online consumer behaviour and influencer marketing implementation also utilize convenience sampling methods for the ease of access and availability of digitally active individuals (Barta et al., 2023; Yang et al., 2025). Additionally, convenience sampling is well suited for behavioral studies such as social media studies where researchers are interested in large data collections to conduct research in a short amount of time and budget (Hair et al., 2021).

In conducting the data analysis, for the present study, the researcher uses the SmartPLS software, which has many advantages in analyzing the data, especially in analyzing complex relationships and variables involving intermediate and moderating variables. SmartPLS can allow to analyse one or more Latent Constructs and can accurately allow to assess direct and indirect effects as well as moderating effects in conceptual models (Hair et al. 2021). This software is especially well-suited for behavioral and consumer research because it can easily deal with non-normal data

distributions, a smaller sample size, and predictive modeling techniques. Due to the flexibility and its appropriateness for mediation and moderation analysis, the recent studies in influencer marketing, social commerce and digital consumer behaviour increasingly adopt SmartPLS (Bui et al., 2025; Yang et al., 2025). In addition, SPSS software will also be employed to conduct descriptive statistics, demographic analysis, reliability testing and preliminary data screening processes.

Results and Discussions

The present research targeted to explore the moderation effect among Brand Trust, Influencer Perceived Credibility, Virtual Influencer Characteristics and Green Brand Authenticity, in the relationship between Influencer Perceived Credibility, Virtual Influencer Characteristics and the Purchase Intention of consumers. The results reveal that Virtual Influencer Characteristics ($p > 0.05$), as well as Influencer Perceived Credibility ($p > 0.05$) significantly and positively predicts Green Brand Authenticity and Consumer Engagement ($p > 0.05$). In particular, the first construct of the model – Influencer Perceived Credibility – had a significant positive relationship with both the Green Brand Authenticity and the Consumer Engagement, whereas the second construct of the model – Virtual Influencer Characteristics – emerged as good predictor for Green Brand Authenticity and Consumer Engagement. The results indicate that consumers are more likely to consider a green brand as genuine and engage more with brand related content when the green messages were delivered by credible and appealing influencers. The findings align with the body of literature that highlights the impact of influencer marketing on consumers' perceptions and behaviors in digital spaces (Barta et al., 2023; Kim & Baek, 2024). Lou and Yuan (2019) also concluded that influencers are found to have a strong influence on the Trust placed and consumer engagement towards the brands they endorse.

Reliability and Validity

Table 1 Reliability and Validity Analysis

Construct reliability and validity Overview				
	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
BRAND TRUST	0.856	0.856	0.912	0.776
CONSUMER _ENGAGEMENT	0.862	0.863	0.916	0.784
GREEN _BRAND _AUTHENTICITY	0.908	0.908	0.942	0.844
INFLUENCER _PERCEIVED _CREDIBILITY	0.887	0.887	0.930	0.815
PURCHASE _INTENTION	0.853	0.854	0.911	0.773
VIRTUAL _INFLUENCER _CHARACTERISTICS	0.832	0.832	0.899	0.748

Cronbach's Alpha and Convergent validity test shows that all constructs in the measurement meet the criteria recommended by academics. Cronbach's alpha ranges from 0.832-0.908 which is above the acceptable minimum of 0.70, thus reflecting high internal consistency of items in the measurement. Likewise, the composite reliability (ρ_a and ρ_c) for all constructs is above 0.80, with the ρ_c ranging from 0.899 to 0.942, accordingly establishing great construct reliability (0.80 and above) (Hair et al., 2022). Moreover, the Average Variance Extracted (AVE) test values are above 0.748 to 0.844, which is much more than the recommended score of 0.50; this indicates strong convergent validity, meaning that for each construct more than 50% of the variance in its indicators is explained. The highest values of reliability and validity are yielded by the construct of Green Brand Authenticity ($\alpha = 0.908$, $CR = 0.942$, $AVE = 0.844$); the lowest, but still acceptable reliability and validity is achieved by the construct of Virtual Influencer Characteristics ($\alpha = 0.832$, $CR = 0.899$, $AVE = 0.748$). In general, the results indicated the satisfactory reliability and convergent validity of the measurement model, which further proves that the constructs are suitable for further analysis of the structural model (Hair et al., 2022; Henseler et al., 2015).

PLS SEM Bootstrapping

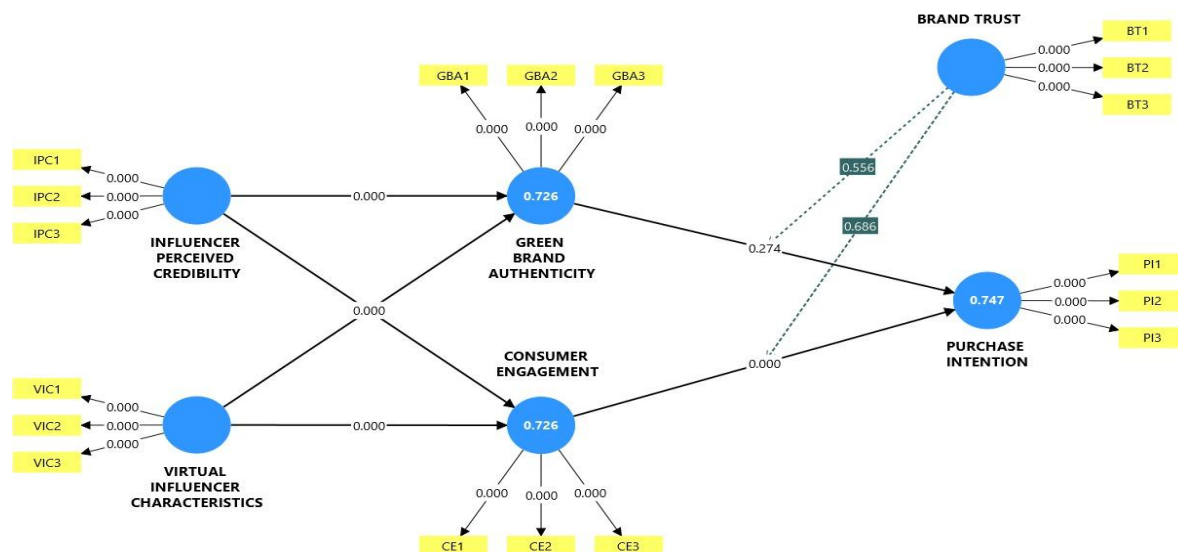


Figure 2 PLS SEM Bootstrapping

Based on the results of the structural modelling, it is indicated that Virtual Influencer Characteristics and Influencer Perceived Credibility are significantly and considerably explanatory variables to explain Green Brand Authenticity and Consumer Engagement respectively. Focusing on the two constructs of Green Brand Authenticity and Consumer Engagement, the model fit was high ($R^2 = 0.726$ for both constructs), suggesting that the two predictor variables accounted for about 72.6% of the variance in these constructs. Likewise, the R^2 of Purchase Intention is 0.747 which indicates that the combination of all the interaction effects and the three variables: Green Brand Authenticity, Consumer Engagement, and Brand Trust account for 74.7% of the variance in Purchase Intention. Researchers Hair et al. (2022) show that R^2 values larger than 0.75 reflect significant predictive ability which also shows the strength of the proposed model. Additionally, the results indicated that all direct paths from Influencer Perceived Credibility and Virtual Influencer Characteristics to Green Brand Authenticity and Consumer Engagement respectively are non-significant (coefficient = 0.000).

encer Characteristics to Green Brand Authenticity and Consumer Engagement were statistically significant ($p < 0.001$), suggesting that both human and virtual influencer attributes are particularly important with respect to both influencing consumers' perceptions and their behavior in digital marketing settings.

Hypothesis Testing

Table 2 Hypothesis Testing

Path coefficients					
Mean, STDEV, T values, p values					
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
BRAND TRUST -> PURCHASE_INTENTION	0.461	0.459	0.070	6.555	0.000
BRAND TRUST x CONSUMER _ENGAGEMENT -> PURCHASE_INTENTION	-0.019	-0.010	0.046	0.404	0.686
BRAND TRUST x GREEN _BRAND _AUTHENTICITY -> PURCHASE_INTENTION	0.028	0.020	0.048	0.589	0.556
CONSUMER _ENGAGEMENT -> PURCHASE_INTENTION	0.393	0.389	0.080	4.929	0.000
GREEN _BRAND _AUTHENTICITY -> PURCHASE_INTENTION	0.069	0.074	0.063	1.095	0.274
INFLUENCER _PERCEIVED _CREDIBILITY -> CONSUMER _ENGAGEMENT	0.457	0.455	0.073	6.260	0.000
INFLUENCER _PERCEIVED _CREDIBILITY -> GREEN _BRAND _AUTHENTICITY	0.408	0.408	0.080	5.093	0.000
VIRTUAL _INFLUENCER _CHARACTERISTICS -> CONSUMER _ENGAGEMENT	0.433	0.434	0.077	5.635	0.000
VIRTUAL _INFLUENCER _CHARACTERISTICS -> GREEN _BRAND _AUTHENTICITY	0.481	0.480	0.076	6.366	0.000

The results of the path coefficients show that most of the proposed direct relationships in the structural model are statistically significant. Specifically, it can be explained that there is a significant positive effect from Influencer Perceived Credibility to Consumer Engagement ($\beta = 0.457$, $t = 6.260$, $p < 0.001$) and Green Brand Authenticity ($\beta = 0.408$, $t = 5.093$, $p < 0.001$), as well as a significant positive effect from Virtual Influencer Characteristics to Consumer Engagement ($\beta = 0.433$, $t = 5.635$, $p < 0.001$) and Green Brand Authenticity ($\beta = 0.481$, $t = 6.366$, $p < 0.001$). Further, the direct effect of Consumer Engagement is significant on Purchase Intention with coefficient $\beta = 0.393$, $t = 4.929$, $p < 0.001$ and the direct impact of Brand Trust has the highest positive coefficient on Purchase Intention i.e. $\beta = 0.461$, $t = 6.555$, $p < 0.001$. However, the Green Brand Authenticity value is not significantly affecting the Purchase Intention ($\beta = 0.069$, $t = 1.095$, $p = 0.274$). Likewise, the relationship between Consumer Engagement and Purchase Intention is not significant ($\beta = -0.019$, $t = 0.404$, $p = 0.686$) when moderated by Brand

Trust and the relationship between Green Brand Authenticity and Purchase Intention is not significant ($\beta = 0.028$, $t = 0.589$, $p = 0.556$) when moderated by Brand Trust. Overall, the findings reveal that factors connected to influencers have a significant impact on improving authenticity and engagement, whereas Consumers Engagement and Brand Trust become the main factors driving consumers' buying decisions.

PLS SEM

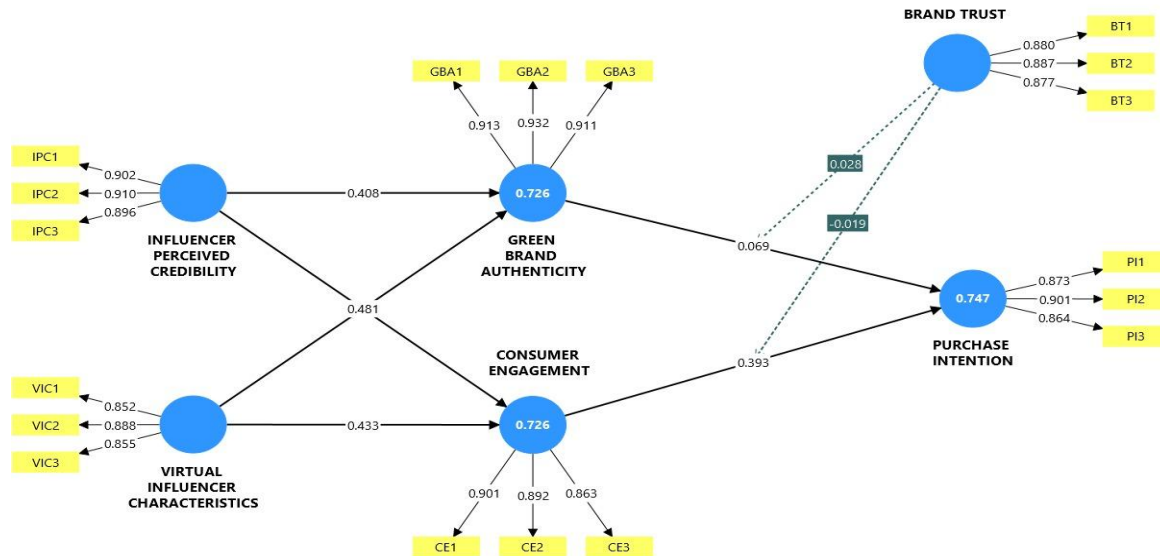


Figure 3 PLS SEM

Good level of explanatory power in the structural model results and high level of support for the suggested conceptual framework. The findings show that Influencer Perceived Credibility has significant and positive influence on Green Brand Authenticity ($\beta = 0.408$, $p < 0.001$) and Consumer Engagement ($\beta = 0.457$, $p < 0.001$). Likewise, Virtual Influencer Characteristics are positively related with Green Brand Authenticity ($\beta = 0.481$, $p < 0.001$) and Consumer Engagement ($\beta = 0.433$, $p < 0.001$). Of these relationships, the relationships with Virtual Influencer Characteristics is the strongest, indicating that the more appealing, human and engaging the virtual influencers are, the more consumers see it as having validity to brand promotion via a virtual influence that leads to a "green" product. Moreover, the model successfully accounts for a considerable portion of the variance in the dependent variables (Green Brand Authenticity; $R^2 = 0.726$ and Consumer engagement; $R^2 = 0.726$), which shows that the variables selected as predictors are relevant in predicting the consumer's perception and engagement behaviors in a digital marketing context using influencer marketing.

Discriminant Validity

Table 3 Discriminant validity

Discriminant validity Heterotrait-monotrait ratio (HTMT) - Matrix								
	BRAND TRUST	CON- SUMER _ENGAG EMENT	GREEN _BRAND _AUTHENTI CITY	INFLU- ENCER _PERCEIVE D _CREDIBIL ITY	PUR- CHASE _INTE NTION	VIRTUAL _INFLUENCER _CHARACTER ISTICS	BRAND TRUST x GREEN _BRAND _AUTHENTICIT Y	BRAND TRUST x CONSUMER _ENGAGEMENT T
BRAND TRUST CONSUMER _ENGAGEMENT T	0.958							
GREEN _BRAND _AUTHENTICITY	0.813	0.864						
INFLUENCER _PERCEIVED _CREDIBILITY	0.832	0.936	0.903					
PURCHASE _INTENTION	0.969	0.956	0.786	0.823				
VIRTUAL _INFLUENCER _CHARACTER ISTICS	0.865	0.962	0.946	0.974	0.859			
BRAND TRUST x GREEN _BRAND _AUTHENTICITY	0.518	0.451	0.456	0.433	0.426	0.464		
BRAND TRUST x CONSUMER _ENGAGEMENT T	0.552	0.490	0.413	0.437	0.470	0.456	0.834	

The discriminant validity analysis of the Heterotrait-Monotrait Ratio (HTMT) shows inconclusive results in terms of the uniqueness of the constructs. Henseler et al. (2015) recommended that values of HTMT less than 0.90 provided evidence of satisfactory discriminant validity and values greater than 0.90 suggested overlap between constructs. Results indicate that each of several construct relationships, such as Consumer Engagement–Brand Trust (HTMT = 0.958), Influencer Perceived Credibility – Consumer Engagement (HTMT = 0.936), Virtual Influencer Characteristics – Consumer Engagement (HTMT = 0.962), Virtual Influencer Characteristics – Green Brand Authenticity (HTMT = 0.946), Influencer Perceived Credibility – Green Brand Authenticity (HTMT = 0.903), Influencer Perceived Credibility – Virtual Influencer Characteristics (HTMT = 0.974), and Brand Trust Purchase Intention (HTMT = 0.969) surpass the benchmark of 0.90. The numbers indicate that the constructs share a relatively high conceptual similarity and may not be totally independent of each other. The HTMT values for the interaction terms (Brand Trust × Green Brand Authenticity and Brand Trust × Consumer Engagement).

Model Fitness

Table 4 Model Fitness

Model fit		
Fit summary		
SRMR	0.055	0.068
d_ULS	0.521	0.780
d_G	0.432	0.494
Chi-square	950.124	1001.028
NFI	0.848	0.840

Based on the model fit criteria, the proposed model has an acceptable overall fit rating. The value of Standardized Root Mean Square Residual (SRMR) is 0.055, which is less than the recommended value of 0.08, which means the difference between the real and calculated correlations is very small, thus indicating a good model fit (Hair et al., 2022). In addition, the measure of the discrepancy $d_{\text{ULS}}=0.521$ and $d_{\text{G}}=0.432$ are not so high, further confirming the adequacy of the model specification. The Normed Fit Index value (NFI) = 0.848 is slightly lower than the ideal value of 0.90 but is still considered acceptable for Partial Least Squares Structural Equation Modeling that utilizes the approach in an exploratory and predictive manner (Henseler et al., 2016). Additionally, the Chi-square value of 950.124 indicates the aggregate of differences between each comparison of the sample and model-implied covariances, but Chi-square statistics are rather sensitive to sample size and must be used in conjunction with other statistics. In general the SRMR, d_ULS, d_G and NFI values show good fit and confirm the suitability of the model for testing the hypothesized relationships between the constructs in the study.

The results show that a positive sign and significant effect occur between Influencer Perceived Credibility and Green Brand Authenticity, with Beta results of 0.408 ($p < 0.001$), and Consumer Engagement with Beta results of 0.457 ($p < 0.001$). The results align with Barta et al. (2023), which found that credible influencers positively impact their audience by creating greater trust and expertise, which in turn builds brand value and boosts engagement. Likewise, in the digital context, Kim and Baek (2024) discovered that influencer credibility is a key factor in driving consumer engagement and positive brand perceptions. Additionally, the current findings support those of Lou and Yuan (2019), who showed that the credibility of influencers stimulate consumers' trust in brand messages, which in turn boosts the engagement and positive perceptions regarding brands. Based on the above, it is concluded that the current study reinforces the fact that credibility is a key component that can be utilized to influence consumers' responses in influencer marketing.

Discussion

The results obtained from this study have theoretical implications, since this study extends the Signaling Theory and Stimulus–Organism–Response (SOR) model in the context of green marketing as a tool to promote green products through influencers. Results indicate that Influencer Perceived Credibility and Virtual Influencer Characteristics are significant stimuli that positively

affect on Green Brand Authenticity and Consumer Engagement, thus confirming the basic assumptions of the SOR model. Moreover, the findings indicated that consumer engagement has a significant influence on purchase intention which further confirmed that consumer's inner psychological reactions have a strong impact on the transformation of outer marketing stimuli to consumer behaviours. The results align with earlier studies on influencers' impact on consumer behavior, which have highlighted the significance of aspects such as credibility and engagement (Barta et al., 2023; Yang et al., 2025). Likewise, Lou and Yuan (2019) proposed that consumers' perception and behavioral intentions are enhanced because of the increase in credibility of the influencer, which leads to increased trust and engagement. Thus, the present study offers more empirical proofs for the use of these theories in the context of sustainable digital markets.

The study makes the literature contribution by merging all the literature used: Influencer Perceived Credibility, Virtual Influencer Characteristics, Green Brand Authenticity, Consumer Engagement, Brand Trust, and Purchase Intention into a unified framework. To date these relationships have been considered individually or during a synthesis of only a few of them. The results obtained here are consistent with previous studies showing that influencer-related attributes have a strong influence on the authenticity perceptions and consumer engagement (Kim & Baek, 2024; Liu et al., 2026). Yet the study also has a contrasting result as it is not found that Green Brand Authenticity is significant to Purchase Intention. However, the finding contradicts those of Poulis et al. (2026) and Lam and Tavitiyaman (2025) who stated that there is significant positive relationship between authenticity and purchase intention. The findings extend the literature on green consumer behavior by highlighting the need for consumers to be more emotionally attached and involved with a brand in contemporary times before translating authenticity perceptions into purchasing.

Conclusion

This experiment aimed to explore how Influencer Perceived Credibility and Influencer Characteristics influence the purchase intention with the mediating between variables of Green Brand Authenticity and Consumer Engagement and also moderating variable of Brand Trust. The results indicated that Virtual Influencer Characteristics and Influencer perceived credibility significantly and positively influenced Green brand authenticity and Consumer engagement. The findings suggest that when the information is shared through credible influencers or appealing virtual influencers, the perception of authenticity increases and consumers are more willing to engage with the information. The results showed that the perception of authenticity is also raised and the consumers are more likely to engage in the information when the information is delivered by more credible influencers or more appealing virtual influencers (Barta et al., 2023; Kim & Baek, 2024). The results align with Signalling Theory in that influencers serve as valuable information signals influencing consumers' perceptions and evaluations of the brands that promote sustainability (Lou & Yuan, 2019).

This study revealed that out of the two variables, the effect of Consumer Engagement on Purchase Intention is significant while for Green Brand Authenticity, its effect is not significant. Beyond the fact that being perceived as authentic is essential, this indicates that the current perceptions of consumers towards the authenticity—related content—viability are of lower priority than their active involvement, interaction and emotional attachment to the content in influencing their purchase intent. The findings support the Stimulus – Organism – Response (SOR) model that

suggests psychological internal responses are a major part of a model that explains how marketing stimuli are converted to responses (Mehrabian & Russell, 1974). The findings align with Dalton et al. (2023) and Yang et al. (2025) who both concluded that consumer engagement was a better predictor of purchase intention than brand perceptions, as engagement increased the emotional attachment that promoted behavioral commitment of the consumer in this case. The findings were in line with the results of Dalton et al. (2023), who found that the relationship between consumer engagement and purchase intention was stronger than between perceived brand factors, and Yang et al. (2025) who found that emotional cues predicted consumer behavioural commitment better than passive brand perceptions, as emotional cues in the case of consumer brand engagement was found to predict behavioural commitment that always leads to purchase intention.

Future Research Directions

Based on the results of this research, some recommendations for future research can be made. The present study examined Influencer Perceived Credibility, Virtual Influencer Characteristics, Green Brand Authenticity, Consumer Engagement, Brand Trust and Purchase Intention, but more studies could consider other variables including perceived value, parasocial interaction, environmental concern, consumer skepticism, and electronic word-of-mouth (eWOM). These factors might provide insights into the way consumers receive content from influencers and messages about sustainability influences. In addition, future research could explore other mediation and moderation factors that could clarify the intricate connections among the variables of influencer marketing and consumer behavioral outcomes. Recent research on digital consumer behavior and the effectiveness of influencers (Barta et al. 2023; Liu et al. 2026; Yang et al. 2025) has confirmed similar recommendations as this study.

Another few methodological weaknesses need to be recognized. One of the limitation of the study is that it used cross sectional research design which means the data was collected at one particular time, which made it difficult to draw cause-and-effect conclusions between the constructs of the study (Hair et al., 2022). Longitudinal designs or experiments could also be used to explore the patterns of changes in people's perceptions and buying intentions over time. Second, all of the data in the study was self-reported survey responses that can give rise to common method bias and social desirability bias. Future study could enable robust results that combine behavioral analytics, experimental observation, and social media metrics gathered in surveys. The methodological issues and recommendations raised are the same described for the PLS-SEM and consumer behavior literature (Hair et al., 2022; Henseler et al., 2015).

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