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Investigating the effectiveness of virtual influencers in prosocial marketing

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Abstract

Heeding the rising popularity of virtual influencers on social media, many established brands are beginning to collaborate with them. Although virtual influencers are perceived as novel and exciting, their effectiveness in different areas of consumer behavior has not been examined. While previous research has compared several attributes of virtual and human influencers, our research is specifically motivated to answer: how can marketers increase the effectiveness of virtual influencers in promoting prosocial causes? Across four experiments employing different prosocial contexts, we compared the effectiveness of virtual and human influencers in increasing consumers' prosocial intentions and behaviors. Findings suggest that although human influencers are more persuasive in promoting prosocial behaviors, this effect only occurs when a virtual influencer is perceived as a standalone influencer (i.e., not affiliated with a brand). Overall, our results imply that marketers can substantially increase the effectiveness of virtual influencers by making the cues of brand affiliation salient in influencers' posts.

KEYWORDS

brand affiliation, message authenticity, perceived homophily, prosocial behavior, similarity-attraction theory, virtual influencer marketing

1 | INTRODUCTION

Virtual influencers (VIs)—computer-generated social media celebrities—are changing the dynamics of the marketing and advertising industries (Franke et al., 2023). In 2022, 75% of US Gen Z consumers followed VIs on various social media platforms (Statista, 2023). More brands are collaborating with VIs as media agencies can render these human-like characters to perform marketing roles specific to the aims of any campaign (Mrad et al., 2022; Stein et al., 2022). Further, VIs have been described as trendy, ageless, and can adopt a range of emotions that would be challenging for traditional human influencers (HIs) (Franke et al., 2023; Yu et al., 2024; Zhou et al., 2023). For example, Miquela Sousa (@lilmiquela), with over 3.6 million followers on TikTok, has collaborated with BMW (Marketing-Interactive, 2023), and Hugo Boss has hired VIs, Imma and Nobody Sausage, to promote their rebranding in 2022 (Hiort, 2022). Since VIs can be a cheaper option of influencer marketing for brands that have limited financial resources (Santora, 2021), examining the effectiveness of VIs against HIs in the promotion of different prosocial causes is an important research agenda.

However, research on VIs is still limited (Gerrath et al., 2024; Koles et al., 2024; Stein et al., 2022; Yu et al., 2024) and mostly provides equivocal findings on their effectiveness. For example, VIs may be effective in building brand image and awareness (Lou

et al., 2023). However, there are concerns relating to their effectiveness in driving purchase intentions (Lou et al., 2023), and while Franke et al. (2023) found that consumers exhibit better attitudes toward VIs as endorsers for technology products, consumers preferred HIs for nontechnology products.

Research has argued that VIs have the potential to engender real change through support of social causes (Franke et al., 2023; Tiffany, 2019; Zhou et al., 2023). Yet, there is no conclusive evidence on how effective VIs are when compared to HIs in promoting prosocial causes. A recent study by Garrath et al. (2024) found that as the warmth of a social message increases, VIs become as effective as HIs in promoting proenvironmental causes. We extend this line of research by providing deeper insights into the effectiveness of VIs in prosocial contexts. First, we compared the effectiveness of HIs and VIs in prosocial contexts. Building on the similarity-affection (SA) theory, Studies 1 and 2 show that HIs are considered more effective than VIs in influencing consumers' prosocial behaviors, and this effect is driven by sequential mediation of perceived homophily and post authenticity. Our study contributes to the VI literature by shedding light on the psychological mechanisms of how consumers perceive VIs and explains that the perception of homophily with the VI is the important factor that influences the perceived authenticity of the post. Second, Study 3a shows that brand affiliation is an important boundary condition that makes VIs equally effective as HIs in promoting prosocial behavior. This is because brand affiliation (vs. a standalone influencer post) signals to consumers that the VI is a familiar entity, diminishing the overall effect of homophily. Finally, Study 3b indicates that nonprofit (vs. profit) organizations are likely to benefit more from using VIs.

2 | THEORETICAL BACKGROUND

2.1 | Prosocial causes and social media influencers

Social media influencers are "individuals who have accrued a sizable and engaged following on one or more social media platforms, and who possess the power to shape attitudes, opinions, and behaviors of their audience through their online content" (Freberg et al., 2011, p. 90). Recently, research has increasingly been exploring influencers' potential for altering consumers' behavior in prosocial contexts (Ballestar et al., 2022; Pittman & Abell, 2021; Zhang et al., 2021). Studies have found that congruency between influencers' identity (race and image) as well as the congruency between an influencer's image and proenvironmental message plays an important role in shaping an influencer's credibility and driving followers' engagement (Boerman et al., 2022; Yang et al., 2021). Knupfer et al. (2023) show that simply following a "greenfluencer" can have a positive impact on younger generation' environmental activism. Previous research suggests that HIs with lower popularity metrics (fewer followers) are more effective in driving donations for charitable causes (Pittman & Abell, 2021) and that influencers' commitment to a prosocial cause may drive consumers to adopt certain eco-products (Zhang et al., 2021). Additionally, the message appeal (concrete messages) of greenfluencers' posts has a positive effect on consumers' purchase intention of sustainable products (Kapoor et al., 2023) and enviro-branding is most effective for greenfluencers who affiliate with brands with high market share (vs. low market share) (Pittman & Milfeld, 2023). However, the effectiveness of VIs in promoting prosocial causes and influencing consumers' prosocial behaviors has received limited attention to date. Thus, more research that evaluates the potential for VIs in prosocial contexts is important, especially since VIs may have the power to encourage younger generations to act on different prosocial behaviors (Olya et al., 2024).

2.2 | The effectiveness of VIs

VIs are different from HIs in the following factors: customization, flexibility, ownership, and automation, as VIs can be easily changed and modified by the marketing agencies or brands who own the persona (Mouritzen et al., 2023). Although the marketing potential of VIs is increasingly gaining scholarly attention (Franke et al., 2023; Muniz et al., 2023), previous studies provide inconclusive findings about the effectiveness of VIs. The literature shows that consumers follow VIs to seek social interaction, entertainment, information, and novelty (Lou et al., 2023) and thus often engage with them similarly to HIs (Mrad et al., 2022; Sands, Campbell, et al., 2022; Stein et al., 2022; Thomas & Fowler, 2021). Studies found that VIs are more effective when they have human-like characteristics (Koles et al., 2024; Xie-Carson et al., 2023) and that VIs' message warmth is an important driver of consumer behavior (Gerrath et al., 2024). However, consumers often find it difficult to identify with VIs (Koles et al., 2024) and perceive that VIs are from out-group and have unhuman-like minds (Stein et al., 2022).

Additionally, much like traditional influencer studies, the existing studies on VIs mostly focused on evaluating effectiveness in the context of beauty, fashion, travel, and technology. Thus, it is important to understand how VIs can be used as marketing tools for prosocial causes (Olya et al., 2024). Furthermore, while research has made significant inroads into understanding the congruency between VIs and their endorsements (e.g., brands and products) that affect advertisement effectiveness (e.g., Franke et al., 2023; Kim & Park, 2023), scarce attention is paid toward exploring the relationship between VIs and followers. Table 1 summarizes key studies that investigated the effectiveness of VIs in different contexts.

2.3 | Similarity effect and the role of homophily in the VI context

The central tenet of S-A theory is that increased similarities (i.e., personality, values) between two individuals lead to increased attraction (Montoya & Horton, 2013). Individuals feel validated by others who agree with their ideas and attitudes, hence reinforcing their world, which, in turn, leads to attraction, and this reinforcement

TABLE 1 Summary of the key VI literature.

Author(s)	Context	Method	Findings
Franke et al. (2023)	VI versus HI on beauty and tech brands with endorsement	Online experiments	Consumers evaluate an advertisement as more favorable when products are endorsed by HIs (than VIs). Advertisement effectiveness for VIs depends on the product category and can positively affect the perceived brand innovativeness when endorsing technology products.
Gerrath et al. (2024)	Proenvironmental cause	Mutimethod. Interviews with online experiments	VI-supported proenvironmental campaigns benefit from message warmth and this effect is more pronounced for audiences with low trust in experts.
Kim and Park (2023)	Mobile devices	Online survey	VIs' attractiveness has an insignificant effect on purchase intention. However, the relationship was mediated by a desire to mimic and brand attachment. Congruency between VI and the endorsed product is important for influencing followers' brand perceptions and behavioral intentions.
Koles et al. (2024)	VI's social media posts	Consumer interviews	Three forms of authenticity highlight the need for VIs to be transparent, human-like, and true to content creators' passions.
Lou et al. (2023)	Motivation to follow VIs	Consumer interviews	The authors identified six primary consumer motivations for following VIs such as novelty, information, entertainment, surveillance, esthetics, integration, and social interaction.
Muniz et al. (2023)	Fashion brands	Online experiments	Disclosing a VI's nonhumanness negatively impacts the VI's credibility and brand trust.
Sands, Campbell et al. (2022)	AI influencers in marketing	Online experiments	Consumers are open to following AI and HI influencers equally. However, AI influencers are perceived as less trustworthy and more likely to trigger WOM.
Sands, Ferraro et al. (2022)	General marketing and advertising	Conceptual paper with exploratory survey	The authors identify opportunities and challenges associated with VI in marketing and advertising such as the uncanny valley effect.
Stein et al. (2022)	Parasocial interaction with VI versus HI on social media video streaming (Twitch)	Online experiments	The authors show that there is no difference between how spectators interact with VIs and HIs. However, they perceive that VIs have less mental human likeness, which weakens the direct effect of parasocial interaction.
Thomas and Fowler (2021)	AI versus HIs on brand endorsement and transgression	Online experiments	Consumers have a similar perception towards AI influencers as HIs in endorsing a brand. The study shows that both AI and HIs reduce attitudes toward brands and purchase intention when they commit transgression.
Xie-Carson et al. (2023)	Tourism	Online survey	3D VIs are more effective than 2D. To improve effectiveness, human-like VIs should combine images of tourism settings with rational messaging.
Yu et al. (2024)	Posts from a single influencer (Lilmiquela)	Facial recognition analysis	Expressions such as happiness, sadness, disgust, and surprise need to be considered carefully when designing VIs' content.
Zhou et al. (2023)	Fashion product	Multistage experimental design	Followers perceive VIs to have the capacity for sight and hearing (distal) but not touch, smell, and taste (proximal).
This study	VI versus HI for promoting prosocial causes	Online experiments	HIs are more effective than VIs in promoting prosocial causes especially when they promote such causes in a standalone manner as followers perceive stronger homophily with HIs which, in turn, positively affects post authenticity. However, this mediation effect weakens when a VI promotes prosocial causes in affiliation with a brand. Thus, VIs become as effective as HIs for prosocial

(Continues)

TABLE 1 (Continued)

Author(s)	Context	Method	Findings
			marketing when a brand affiliation is clearly stated in a post. Additionally, compared to for-profit organizations, NGOs may benefit more from collaboration with VIs as donations are highest when a VI has a brand affiliation with an NGO.

Abbreviations: HI, human influencer; NGO, nongovernmental organization; VI, virtual influencer.

occurs automatically without one's conscious awareness (Byrne et al., 1973). As such, individuals subconsciously evaluate others based on the information available to them, resulting in either attraction or repulsion (Montoya & Horton, 2013).

In line with the S-A theory, consumers follow different influencers who appeal to their lifestyles (Tafesse & Wood, 2021). Perceived homophily, the extent to which followers identify themselves to an influencer based on the influencer's values, morals, and behaviors (McPherson et al., 2001), plays an important role in deciding whether to follow an influencer because it provides a specific heuristic that simplifies the decision-making process (Goldstein & Gigerenzer, 1999; Hauser, 2014). This is because perceived homophily assesses how individuals categorize others, which provides a benchmark for self-comparison against influencers (Chu & Kim, 2011; Han & Balabanis, 2024; Ladhari et al., 2020). Homophily has been applied to assess the consumer behavior outcomes of individuals who share demographic characteristics (e.g., age, gender, race, income) (Pezzuti et al., 2018; Risselada et al., 2014; Simpson et al., 2000), but can also capture more subjective perceptions of attributes, values, moral, and behaviors (Han & Balabanis, 2024; Shoenberger & Kim, 2023). Consequently, homophily significantly influences consumers' attitudes, intentions, and behaviors (Bu et al., 2022; Ladhari et al., 2020; Risselada et al., 2014) as individuals have favorable (unfavorable) preconceptions about those that are similar (dissimilar) to themselves (Bhattacharya & Sen, 2003).

The literature on human–robot interaction highlights the importance of perceived physical/psychological closeness between consumers and virtual AI (i.e., avatar and chatbot) in building consumers' emotional trust toward AI (Glikson & Woolley, 2020). Although previous research shows that increasing the physical human-likeness of the robot positively influences AI–consumer interactions (Stroessner & Benitez, 2019), this also evokes discomfort among consumers (Mende et al., 2019). Importantly, VIs are perceived to have nonhuman (artificial) minds (Stein et al., 2022), and thus consumers may find it difficult to see homophily with VIs. Since homophily is an important factor that affects consumers' evaluation of influencers' messages and effectiveness (Han & Balabanis, 2024), a lack of perceived homophily would be a disadvantage for VIs. Consequently, we suggest that the perceived homophily between HIs and consumers would be higher than that of VIs and consumers as consumers may have difficulty visualizing a VI as someone similar to themselves in terms of values, morals, and behaviors (Stein et al., 2022). Specifically in a prosocial context, it may be easier (harder) for them to visualize a HI (VI) engaging in a prosocial cause, thus HIs' prosocial message is more convincing.

H1. HIs, compared to VIs, are more effective in increasing prosocial behavior, that is, followers will exhibit better attitudes toward an HI than VI and are more likely to exhibit prosocial intentions after reading a HI's post than a VI's post.

2.4 | Perceived homophily, post authenticity, and prosocial behavior

Authenticity, defined as the extent to which an entity is considered genuine and original (Kennick, 1985), has been extensively discussed in consumer decision-making (Napoli et al., 2014; Nunes et al., 2021). Authenticity captures a truthful reflection of reality as opposed to fake and ingenuine realities (Morthart et al., 2015; Shoenberger et al., 2021). Therefore, authentic messaging is a presentation of one's true self and values (Ilicic & Webster, 2016; Kowalczyk & Pounders, 2016). Influencers are under pressure to be authentic (Ouvrein et al., 2021) due to the increased level of criticism toward the unrealistic lives they portray on social media (Claeys et al., 2024). Authentic messaging from intrinsically motivated influencers can improve relationships with their audience as it makes them appear organic, natural, and real whilst diminishing commercialized perceptions (Audrezet et al., 2020; Colucci & Pedroni, 2022; Gerrath & Usrey, 2021). Such authentic messaging is important as consumers seek to avoid fake and commercialized marketing content on social media (Morthart et al., 2015) and organizations seek to advertize at grassroots, natural, and authentic levels through the presentation of consumerism in the everyday lives of "normal" people (Colucci & Pedroni, 2022).

From consumers' perspective, authenticity judgments are often subjective and based on their lived experiences and ability to establish connections between the source and themselves (Nunes et al., 2021). Indeed, the literature emphasizes the role of the source in improving the perception of authenticity (Orazi & Newton, 2018) and the perceived similarity between the sender and receiver of the message in increasing trust in the message (Han & Balabanis, 2024). Since consumers' evaluation of authenticity is influenced by whether the influencer's values are aligned with theirs (i.e., homophily) (Shoenberger & Kim, 2023) and authentic messaging is important in influencing consumers' socially responsible behavior (Shoenberger et al., 2021), we propose that perceived homophily between influencers and followers increases the

perceived post authenticity, which in turn increases prosocial behavioral intention.

H2. The relationship between influencer effectiveness and prosocial behavior is sequentially mediated by perceived homophily and post authenticity.

2.5 | Prosocial brand affiliations

Brands often collaborate with influencers to attract new consumers (Jiménez-Castillo & Sánchez-Fernández, 2019). While there is an increasing demand for brands to partner with influencers whilst providing them with creative freedom (Martínez-López et al., 2020; Nascimento et al., 2020), brands can maintain high levels of creative control when using VIs (Rundin & Colliander, 2021). When HIs promote a brand, this often invokes certain negative commercial connotations around self-interest (Martínez-López et al., 2020), which can make consumers question the post's authenticity (Pradhan et al., 2023). Credibility and trust in influencer marketing are particularly important since there is always a perceived risk and uncertainty associated with influencers' recommendations (Cabeza-Ramírez et al., 2022).

Signaling theory (Boulding & Kirmani, 1993) suggests that when consumers are not informed about the quality of a product/service (i.e., information asymmetry), brands' action that signals quality (i.e., providing a warranty) increases the evaluation of quality. In online contexts, where information asymmetry is much more pronounced (Pfeuffer & Huh, 2020; Wang et al., 2004), informative signals such as sponsorship disclosure are important cues for consumers to evaluate the messages of influencers (Xie & Feng, 2023). We argue that for VIs, explicit brand affiliation works as an information cue that is important in building consumers' trust online and may act as a "seal of approval" for VIs' credibility (Wang et al., 2004; Weismueller et al., 2020). Casado-Aranda et al. (2019) show that the "seal of approval" is the most effective online trust signal, and such signaling transfers the focal target of the trustee from the information sender (VIs in our study) to the information approver (brands) (Doney & Cannon, 1997). Therefore, VIs' brand affiliation shifts the target of the trustee from the VI (unknown entity) to the affiliated brands (known entity) and may offset the lack of homophily between consumers and VIs. Thus, we propose that VIs are more effective in promoting prosocial behavior when affiliated with a brand rather than being standalone.

H3. VIs' brand affiliation (vs. standalone) will drive higher attitudes and prosocial intentions.

3 | STUDY 1: BLOOD DONATION INTENTION

We test our hypotheses through four experimental studies. Figure 1 presents the overall conceptual framework of this research. Specifically, Studies 1 and 2 test H1 (direct effect) and H2 (sequential mediation) using different prosocial contexts. Study 3a tests H3 by testing the role of brand affiliation using 2 (VI vs. HI) × 2 (Brand Affiliation vs. Standalone). Finally, Study 3a tests the role of organization type (nongovernmental organization [NGO] vs. for-profit/private) affiliating with the VI.

3.1 | Aim

Study 1 tests the main effect (H1) and sequential mediation effect leading to the main effect (H2). Specifically, we compare the role of HIs and VIs in promoting prosocial behavior and test the sequential mediation effect of perceived homophily and message authenticity.

3.2 | Data collection, procedure, and stimuli

We used Prolific, a crowdsourcing platform known for producing superior data quality, to recruit participants for all of our studies because of the availability of various prescreening filters and the high compensation paid to the participants compared to other similar platforms (Eyal et al., 2021; Palan & Schitter, 2018). To ensure quality, we employed an attention check question throughout the studies (see Supporting Information S1: Appendix A) and only kept the participants who chose the correct answer for the attention check and recruited a different set of participants for each study.

One hundred and seventy-one participants (65.4% female, mean age = 39.56 years) were recruited in exchange for compensation and were randomly assigned to one of the two conditions: VI or HI. Participants were requested to imagine that they were scrolling through their Instagram page when they came across a post by a VI (or HI) named Maria who encouraged people to donate blood (see Supporting Information S1: Appendix B for full stimuli). Next, participants completed their intention to donate blood, attitudes toward the influencer, perceived homophily, post authenticity, manipulation check, and control measures: perceived seriousness of prosocial cause, previous blood donation experience, and familiarity with VIs. We also asked participants if they could not donate blood for personal or medical reasons.

3.3 | Measures

Blood donation intention was measured using a single-item scale (after reading Maria's post, I am more likely to donate blood, 1 = *Strongly Disagree* to 7 = *Strongly Agree*). Attitude toward the influencer was measured using Aggarwal's (2004) three-item scale (Maria's post was bad–good, boring–interesting, unconvincing–convincing). Perceived homophily was measured using Chu and Kim's (2011) three-item bipolar scale (Maria behaves like me, Maria shares my values, Maria thinks like me). Post authenticity was measured using Shoenberger et al.'s (2021) three-item scale (Maria's post is authentic, Maria's post is truthful, Maria's post is genuine). Manipulation check, seriousness of prosocial cause, and previous blood donation experience were measured on a single-item scale each (*manipulation check*: Maria is 1 = *HI* to 7 = *VI*; *seriousness of cause*: To what extent do you personally believe that blood donation is a

serious cause?, 1 = *Not at all* to 7 = *Very serious*; *previous blood donation*: How often do you donate blood?, 1 = *Not at all*, 7 = *Very often*).

3.4 | Results

3.4.1 | Manipulation check

Participants in the VI condition believed Maria was a VI and participants in the HI condition believed Maria was an HI ($M_{virtual}$ = 5.82 vs. M_{human} = 2.17; F (1,170) = 219.26, p < 0.001), thus manipulation worked as intended.

3.4.2 | Dependent variables

Participants in the HI (vs. VI) condition expressed higher intention to donate blood ($M_{virtual}$ = 3.61 vs. M_{human} = 4.41; F (1,170) = 9.66, p < 0.01). Similarly, participants in the HI condition expressed higher attitude toward the influencer than participants in the VI condition ($M_{virtual}$ = 4.87 vs. M_{human} = 5.49; F (1,170) = 9.698, p < 0.01) (see Figure 2).

3.4.3 | Sequential mediation analyses

Sequential mediation analyses: We used Hayes PROCESS model-6 (Preacher & Hayes, 2008) to conduct sequential mediation with perceived homophily as the first mediator (M1), post authenticity as the second mediator (M2), and blood donation intention as the dependent variable. We found an indirect effect of influencer type on blood donation intention through perceived homophily and post authenticity (β = 0.20; SE = 0.0764; 95% confidence interval [CI]: 0.0747, 0.3701), rendering the direct effect insignificant (β = 0.0358; SE = 0.2517; 95% CI: −0.4612, 0.5329), and suggesting full sequential mediation (see Figure 3). Our results held when we used attitude toward influencer as the dependent variable with sequential mediation of perceived homophily and post authenticity (β = 0.34; SE = 0.0870; 95% CI: 0.1925, 0.5271), making direct effect insignificant (β = −0.2436; SE = 0.1539; 95% CI: −0.5475, 0.0603) (see Figure 4).

3.4.4 | Control variables

We did not find any difference in the perception of the seriousness of the cause between conditions ($M_{virtual}$ = 5.88 vs. M_{human} = 5.80; F (1,170) = 0.233, p = 0.63) and cause seriousness did not mediate blood donation intention (95% CI: −0.2168, 0.1169). Between conditions, there was no difference in the past blood donation behavior of participants ($M_{virtual}$ = 1.47 vs. M_{human} = 1.56; F (1,170) = 0.321, p = 0.51) nor passion toward other prosocial causes ($M_{virtual}$ = 5.06 vs. M_{human} = 5.10; F (1,170) = 0.04, p = 0.83) nor previous donation to charitable causes ($M_{virtual}$ = 3.85 vs. M_{human} = 4.02; F(1,170) = 0.46, p = 0.5).

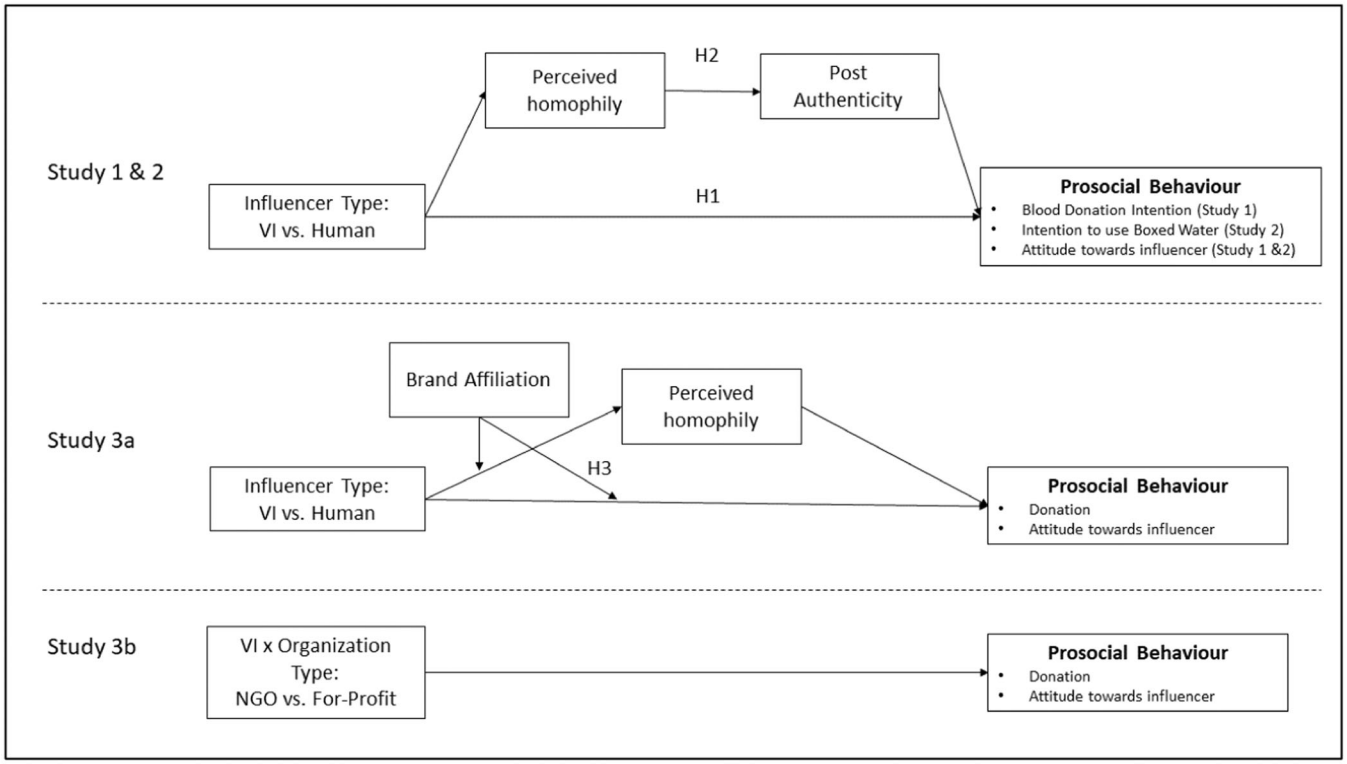

FIGURE 1 Conceptual model for this research. HI, human influencer; NGO, nongovernmental organization; VI, virtual influencer.

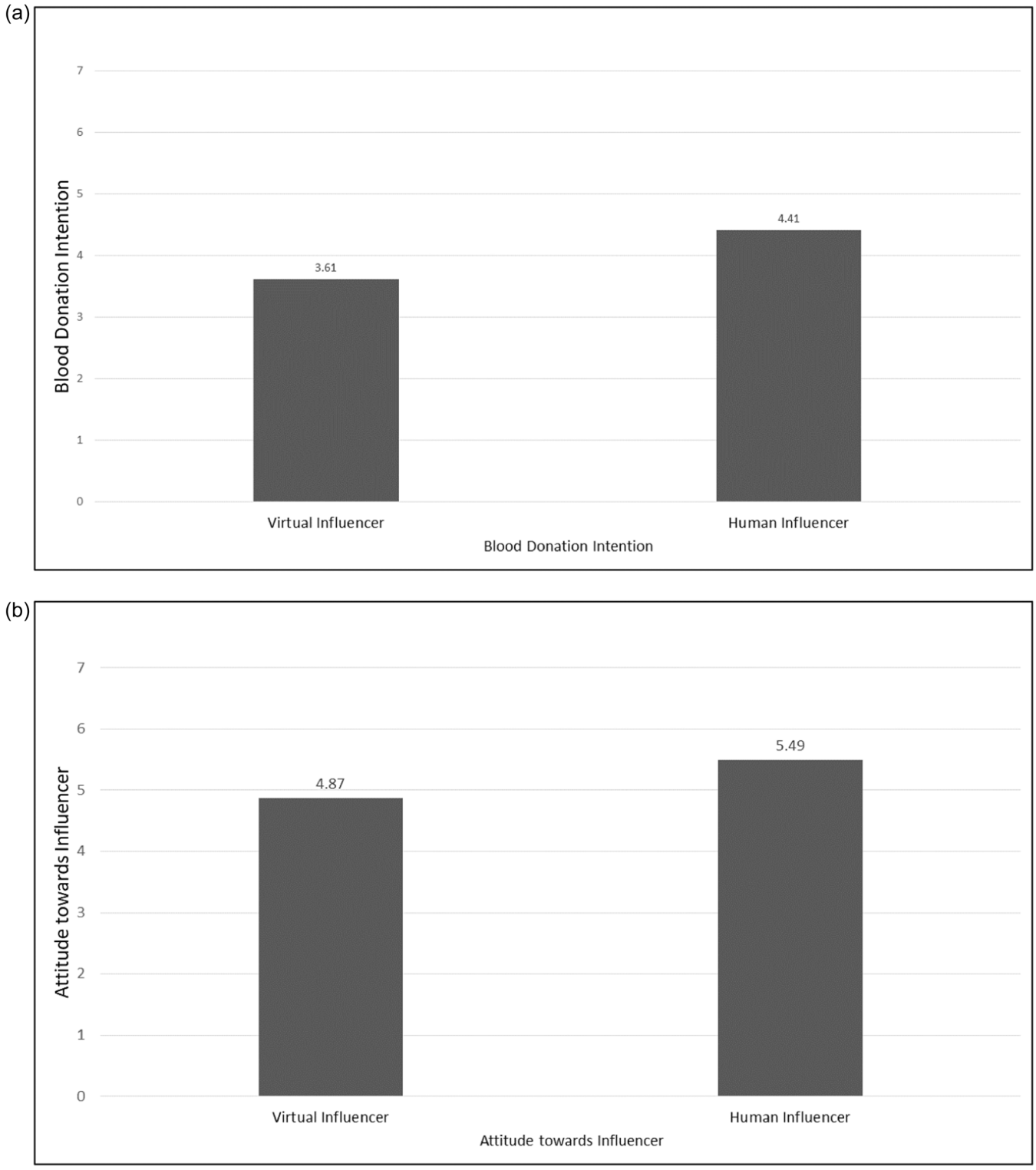

FIGURE 2 (a) Effect of influencer type on blood donation intention. (b) Effect of influencer type on attitude towards influencer.

While it is likely that some participants cannot donate blood due to personal or medical reasons, our effect was significant after controlling for this ($M_{virtual} = 4.02$ vs. $M_{human} = 4.72$; F (1,95) = 4.71, $p = 0.03$).

3.4.5 | Discussion

Study 1 provides initial evidence toward our hypotheses that HIs are more effective than VIs in promoting a prosocial cause (H1) and this

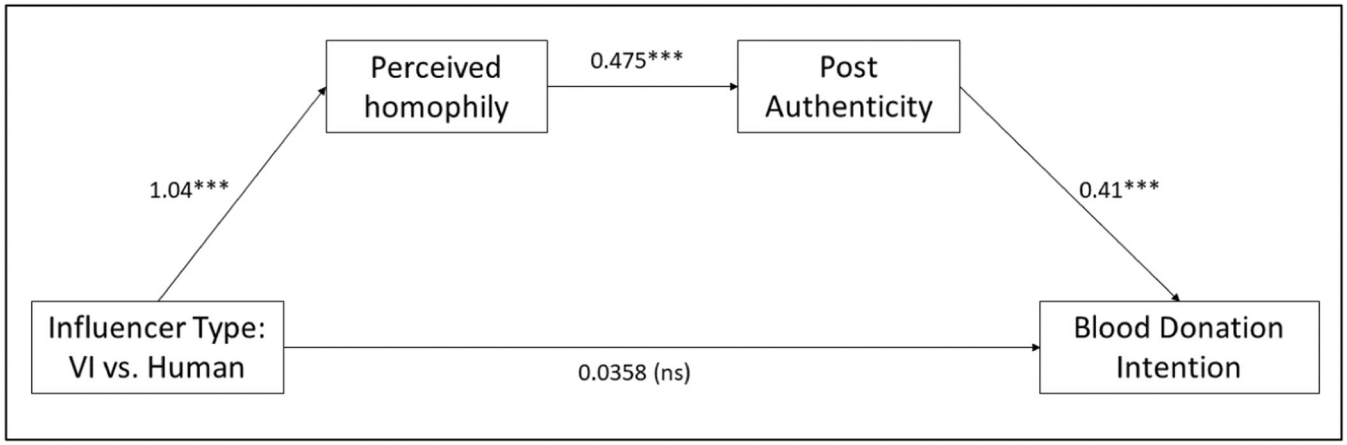

FIGURE 3 Sequential mediation of perceived homophily and post authenticity on blood donation behavior. ns, not significant; VI, virtual influencer. ***$p < 0.001$; **$p < 0.01$.

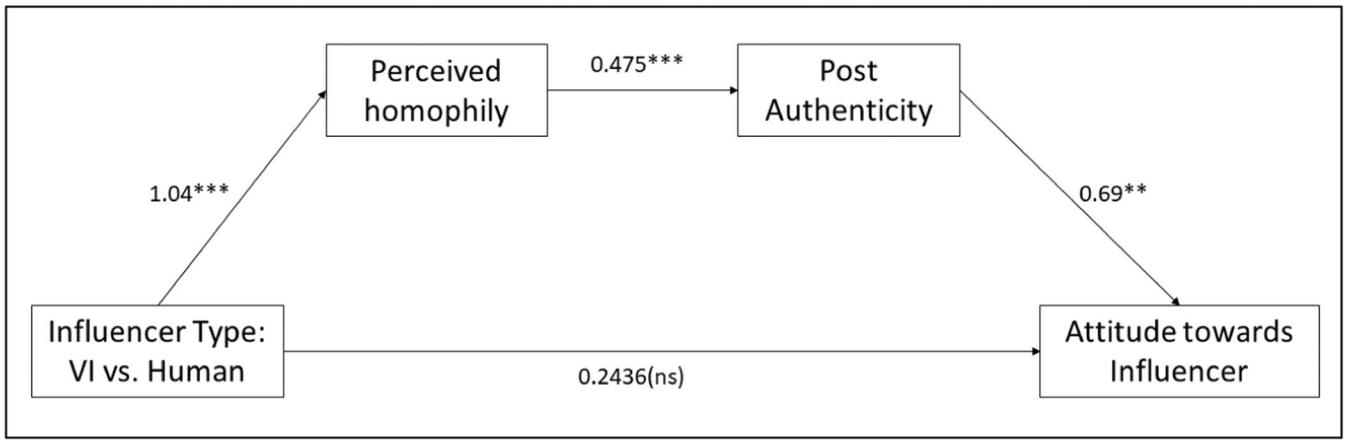

FIGURE 4 Sequential mediation of perceived homophily and post authenticity on attitude towards influencer. ns, not significant; VI, virtual influencer. ***$p < 0.001$; **$p < 0.01$.

effect is driven by perceived homophily, which in turn affects post authenticity (H2).

4 | STUDY 2: INTENTION TO SELECT ENVIRONMENTALLY SUSTAINABLE OPTION

4.1 | Aim

The purpose of Study 2 is to provide robustness to our research by testing our H1 and H2 in a different prosocial context: Participants' intention to use sustainable options (boxed water).

4.2 | Data collection, procedure, and stimuli

One hundred and sixty-five participants (65% female, 32.9% male, 1% nonbinary, mean age = 35.68 years) were recruited in exchange for compensation. We conducted Monte Carlo simulations with the *R* package to estimate the power for sequential mediations (Schoemann et al., 2017). The results showed that our sample size was sufficient to conduct analysis (see Supporting Information S1: Appendix F). Participants were randomly assigned to one of the two conditions: VI or HI, then asked to imagine that they were scrolling through their Instagram page when they came across a post by a VI (HI) named Cindy who promoted the use of boxed water as it is made of sustainable resources and is easy to recycle compared to bottled water (see Supporting Information S1: Appendix C for full stimuli). Next, participants responded with their intention to use boxed water in the future, attitude towards the influencer, perceived homophily, post authenticity, and control measures such as participants' environmental consciousness, whether they currently follow any VIs, and the amount of time they spend on Instagram.

4.3 | Measures

The intention to use boxed water was measured using a single-item scale (after reading Cindy's post, I'm more likely to use boxed water,

1 = *Not at all* to 7 = *Very Likely*). We employed the same measures for attitude, homophily, post authenticity, and manipulation check as Study 1.

4.4 | Results

4.4.1 | Manipulation check

Participants in the VI condition believed Cindy was a VI and participants in the HI condition believed Cindy was a HI ($M_{virtual}$ = 6.34 vs. M_{human} = 2.62; F (1,160) = 211.37, p < 0.001), thus manipulation worked as intended.

4.4.2 | Dependent variable

Participants in the HI (vs. VI) condition expressed higher intention to use boxed water ($M_{virtual}$ = 3.10 vs. M_{human} = 3.43; F (1,160) = 1.61, p > 0.1), although it was insignificant. As hypothesized, participants in the HI condition expressed a higher attitude toward the influencer than participants in the VI condition ($M_{virtual}$ = 4.15 vs. M_{human} = 4.90; F (1,160) = 9.15, p = 0.03).

4.4.3 | Sequential mediation analyses

We used Hayes PROCESS model-6 (Preacher & Hayes, 2008) to conduct sequential mediation with perceived homophily as M1, post authenticity M2, and intention to use boxed water as the dependent variable. We found an indirect effect of influencer type on intention to use boxed water through perceived homophily and post authenticity (β = 0.15; SE = 0.0756; 95% CI: 0.0140, 0.3168), making the direct effect insignificant (β = −0.03; SE = 0.2238; 95% CI: −0.4721, 0.4122) and suggesting full sequential mediation. To confirm our chain of causality, we swapped the order of mediators. When we used post authenticity as M1 and perceived homophily as M2 the mediation effect disappeared (β = 0.04; SE = 0.0468; 95% CI: −0.0149, 0.1450), indicating perceived homophily increases the post authenticity (not the other way round). We also tested the sequential mediation effect with attitude toward the influencer as the dependent variable. The indirect effect through perceived homophily and post authenticity was significant (β = 0.21; SE = 0.0992; 95% CI: 0.0165, 0.4136), making the direct effect insignificant (β = 0.23; SE = 0.1447; 95% CI: −0.0509, 0.5206).

4.4.4 | Control variables

We did not find any difference between conditions on the amount of time participants spend on Instagram ($M_{virtual}$ = 1.61 vs. M_{human} = 1.59; F = 0.01, p > 0.5), self-evaluation of environmental consciousness ($M_{virtual}$ = 4.86 vs. M_{human} = 4.94; F = 0.195, p > 0.5), or the number of VIs they followed (less than one on average).

4.4.5 | Discussion

Study 2 reinforces our argument that a HI is more effective than a VI in increasing consumers' prosocial behavior. Although we did not find a significant main effect on participants' prosocial behavior, participants in both conditions indicated the intention to use the boxed water slightly lower than the mean scale value. We speculate that boxed water is still unpopular, and unlike plastic water bottles, boxed water is not available in major retailers, making it difficult for participants to change their intentions. However, we found a significant difference in attitudes between VI and HI as participants found the HI more persuasive for prosocial causes and we consistently found support for our sequential mediation.

5 | STUDY 3: CHARITABLE DONATION AND BRAND AFFILIATION

5.1 | Study 3a: Brand affiliation

5.1.1 | Aim

In the previous studies, we measured participants' prosocial intentions. To enhance the realism of our research, we created an incentive-compatible task and measured participants' actual charitable behavior in Studies 3a and 3b. Studies 1 and 2 found that a VI as a standalone influencer is not as effective as HIs in promoting prosocial causes. Thus, we address the following question: "Can they still be used in improving consumers' prosocial behavior?" We propose that a brand affiliation should signal to consumers that VIs are trustworthy entities and work as a "seal of approval" and offset a lack of homophily. We test this prediction (H3) in Study 3. Additionally, to increase the managerial implications of our study, we test the type of affiliated organization (private/for-profit vs. NGO) with VIs (Study 3b).

5.1.2 | Data collection, procedure, and stimuli

We conducted Study 3a in two stages. First, we recruited a pool of 600 participants from Prolific. We used Pets at Home as our focal brand as it is a popular pet retail brand in the United Kingdom. In the first stage, participants simply stated their familiarity and attitude toward the brand and the number of pets they own. For the main study, we only recruited pet owners who were familiar with the brand, resulting in a sample of 358 participants (31% female, 63.1% male, 5.8%, nonbinary, mean age = 41.49 years).

The study follows 2 (Influencer Type: Virtual vs. Human) × 2 (Brand Affiliation: Standalone vs. Brand affiliation) between-subject

design. Participants were randomly assigned to one of the four conditions. Participants in all conditions first reported their attitudes toward several pet brands and charities including Pets at Home and people's dispensary for sick animals (PDSA). Participants in the standalone HI (VI) condition read that they came across a post from a HI (VI) called Rachael Hope who is fundraising for the animal welfare charity: PDSA. The participants in the brand affiliation condition read that they came across a post from HI (VI) called Rachael Hope who is fundraising on behalf of Pets at Home for the animal welfare charity: PDSA. Immediately after participants read Rachael Hope's post, they were presented with an option to voluntarily donate a proportion of their study reward money to PDSA. Next, like in previous studies, participants completed measures on attitude toward the influencer, perceived homophily, post authenticity, manipulation check measures, control, and demographics measures (see Supporting Information S1: Appendix D for full stimuli).

5.1.3 | Measures

Participants registered the amount of money they wanted to donate to PDSA using a slider scale of £0 to £1.50 (maximum reward money), although they were paid in full (and this was disclosed at the end of the survey). We used the measures for attitude, perceived homophily, and post authenticity from previous studies. For manipulation check questions, participants answered whether the influencer was human or virtual (1 = *human* to 7 = virtual) and whether the post was standalone or affiliated with a brand (1 = *standalone* to 7 = *affiliated with a brand*).

5.1.4 | Results

5.1.4.1 | *Manipulation check*

Participants in the HI condition believed that Rachael Hope was a human and participants in the VI condition believed that Rachael Hope was virtual ($M_{virtual} = 5.31$ vs. $M_{human} = 2.29$; $F = 217.92$, $p < 0.001$), thus manipulation worked as intended. Participants in the "standalone" influencer conditions believed that the influencer post had no brand affiliation while participants in the "brand affiliation" conditions believed that the post was created on behalf of the brand ($M_{standalone} = 3.65$ vs. $M_{brand} = 5.82$; $F = 115.95$, $p < 0.001$). We did not find any significant difference in attitude towards the pet brand and charity in any of the four conditions.

5.1.4.2 | *Dependent variable*

To test the effect of influencer type (VI vs. HI) and brand affiliation (standalone vs. brand affiliation) on the amount donated to the charity we ran a one-way analysis of variance. There was no main effect of influencer type on the amount donated ($M_{virtual} = 0.38$ vs. $M_{human} = 0.33$; $F = 1.15$, $p > 0.10$), but we found the main effect of post type ($M_{standalone} = 0.30$ vs. $M_{brand} = 0.40$; $F = 4.40$, $p = 0.03$). A planned contrast revealed that the VI's brand affiliation is more effective in increasing charitable donation ($M_{VBrand} = 0.43$ vs. $M_{VStandalone} = 0.31$; $F = 3.95$, $p < 0.05$), but no such difference exists in HI conditions ($M_{HBrand} = 0.36$ vs. $M_{HStandalone} = 0.29$; $F = 1.44$, $p > 0.10$). Similarly, we found that participants held a higher attitude when the VI had brand affiliation ($M_{VBrand} = 4.77$ vs. $M_{VStandalone} = 4.15$; $F = 6.67$, $p = 0.01$), but no significant difference existed in the HI conditions ($M_{HBrand} = 4.97$ vs. $M_{HStandalone} = 5.15$; $F = 0.699$, $p > 0.10$).

Next, we checked the interaction of influencer type and brand affiliation on attitude. We found a significant interaction effect ($\beta = 0.8052$; SE = 0.3230; $p = 0.01$; 95% CI: 0.17, 1.44). Specifically, there was a significant difference in attitude between HI and VI in standalone conditions ($M_{VStandalone} = 4.15$ vs. $M_{HStandalone} = 5.15$; $t = 4.40$, $p < 0.001$), but that difference disappeared when influencers had a brand affiliation ($M_{VBrand} = 4.77$ vs. $M_{HBrand} = 4.97$; $t = 0.8667$, $p > 0.10$) (see Figure 5).

Finally, we conducted moderated mediation analysis using Hayes PROCESS model-7 to establish the effect of influencer type, post type, and the two mediators of homophily (M1) and post authenticity (M2) on attitude toward the influencer. We found that homophily mediates the relationship between influencer type and attitude in the standalone condition ($\beta = 0.1176$; SE = 0.0575; 95% CI: 0.0207, 0.2477) but not in the brand affiliation condition ($\beta = 0.0624$; SE = 0.0585; 95% CI: −0.0536, 0.1803), suggesting that when influencers have the brand affiliation, the role of perceived homophily in driving attitude weakens significantly.

5.1.4.3 | *Discussion*

This study provides support for H3 that VIs can be more effective in promoting prosocial behavior when they are affiliated with a brand than when they work as a standalone influencer. While we did not observe any significant difference in attitude and donation behavior in both HI conditions (standalone and brand affiliation), the effects on attitude and donation behavior were both significant in the case of VIs. This is because brand affiliation works as an assurance of quality, which shifts the target of evaluation from the influencer to the brand, hence the role of homophily becomes less important. Consequently, VIs perform equally well if not better than HIs (average donation amount in brand affiliation condition: VI, £0.43 vs. HI, £0.36).

5.2 | Study 3b: Type of organization

5.2.1 | Aim

To increase the managerial implications of our research we conducted Study 3b to explore whether organization type (private vs. NGO) impacts VIs' effectiveness. We selected two brands: Marks & Spencer as a private and British Heart Foundation as an NGO as we found nonsignificant differences in attitudes and familiarity among our pool of participants. For the main study, we created an incentive-compatible task for a mental health charity and recruited 101 participants (59.41% female, 38.61% male, 0.9% nonbinary, mean age = 43.87 years) and randomly assigned them to one of the two conditions: private versus NGO. Participants in the private (NGO) condition read that suppose you are scrolling your Instagram page

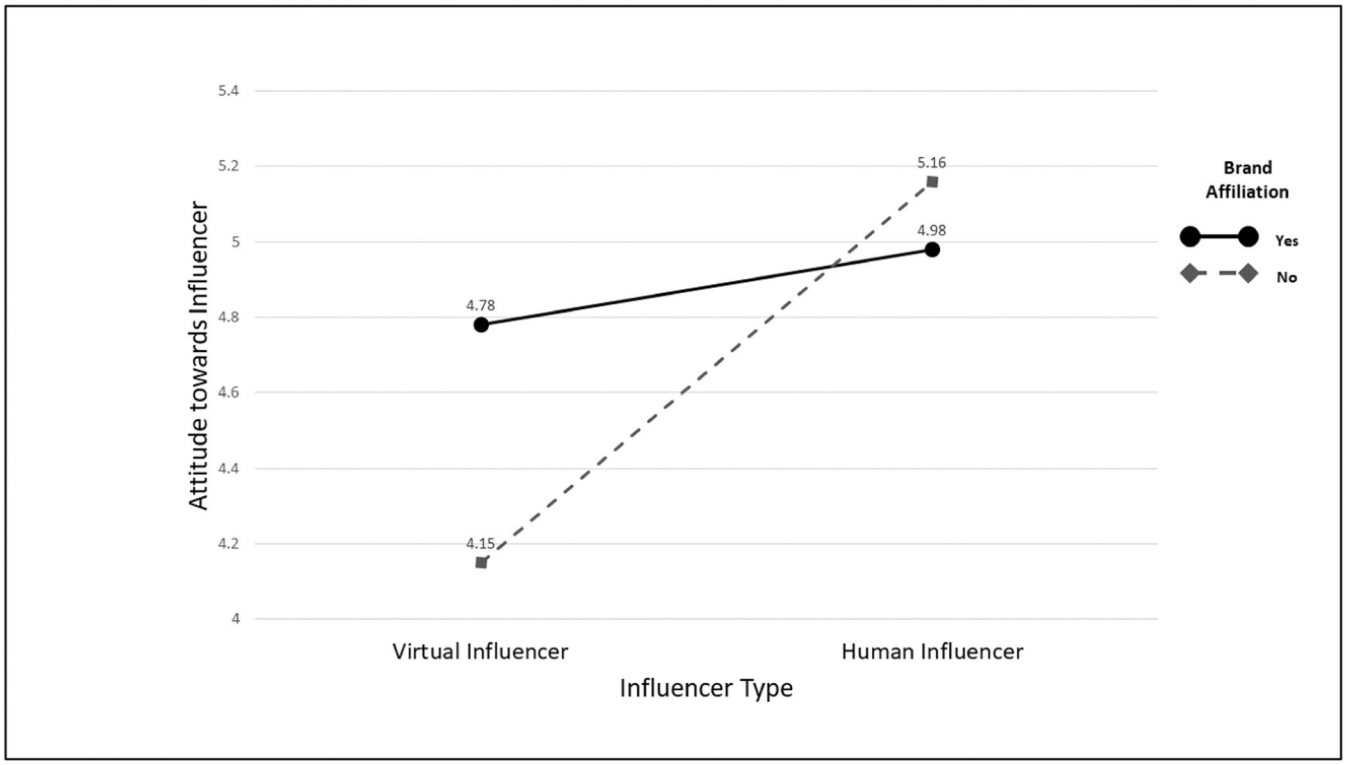

FIGURE 5 Interaction effect of influencer type and brand affiliation on attitude toward influencer.

when you come across the post by a VI, Rachael Hope, who is promoting Mental Health Week in collaboration with Marks & Spencer (British Heart Foundation), which is a private (NGO) organization (see Supporting Information S1: Appendix E for full stimuli).

5.2.2 | Measures

Participants were presented with an option to voluntarily donate money for Mental Health Week out of their reward money (£0–£1.2), although they were paid in full (and this was disclosed at the end of the survey). Next, participants were asked to report their attitudes toward the VI and affiliated organization along with several other private and NGO organizations, complete manipulation check questions: (1) organization type (to what extent the brand affiliated with the VI is [1 = *NGO* to 7 = *Private*]); (2) influencer type (the extent to which Rachael Hope is a [1 = HI to 7 = VI]); and (3) a control variable (to what extent they believe that mental health is an issue that needs awareness in the United Kingdom).

5.2.3 | Results

5.2.3.1 | *Manipulation check*

Participants in the NGO condition believed that the affiliated brand is an NGO and participants in the private condition believed that the affiliated organization is a private brand (M_{NGO} = 1.60 vs. $M_{private}$ = 6.60; F = 560.11, p < 0.001), thus manipulation worked. Participants in both conditions believed that the influencer was virtual ($M_{VI\text{-}NGO}$ = 6.40 vs. $M_{VI\text{-}private}$ = 6.02, F = 1.54, p > 0.10). Further, participants in both conditions believed that mental health in the United Kingdom needs awareness (M_{NGO} = 5.74 vs. $M_{private}$ = 5.40; F = 1.36, p > 0.10).

5.2.3.2 | *Dependent variables*

Participants in the NGO condition donated significantly higher amounts of money than participants in the private condition (M_{NGO} = £0.29 vs. $M_{private}$ = £0.15; F = 4.33, p < 0.05), although there was no difference in attitude toward VI ($M_{VI\text{-}NGO}$ = 3.48 vs. $M_{VI\text{-}private}$ = 3.69; F = 4.33, p < 0.05). Participants in both conditions have similar attitudes toward Marks & Spencer ($M_{VI\text{-}NGO}$ = 5.42 vs. $M_{VI\text{-}private}$ = 5.60; F = 4.61, p > 0.10) and British Heart Foundation ($M_{VI\text{-}NGO}$ = 5.34 vs. $M_{VI\text{-}private}$ = 5.42; F = 0.65, p > 0.10).

6 | DISCUSSION AND CONTRIBUTIONS

The popularity of VIs is increasing on social media. This is often attributed to their stylish looks, unique persona, interesting backstories, and biographies (Sands, Ferraro, et al., 2022). While VIs are created to perform the same functions as HIs, that is, persuading followers to buy specific products and services, it is not clear how effective they are compared to HIs specifically in the context of prosocial behavior. Current research found that HIs are more

effective than VIs in promoting prosocial behavior among consumers when they are promoting prosocial causes in a standalone manner. This is because consumers see stronger similarities (homophily) with HIs in terms of morals, values, and behaviors, which in turn increases their perception of authenticity and subsequently their prosocial intention. However, when VIs' brand affiliation is salient, the effect of perceived homophily diminishes, making VIs as effective as HIs. We also show that NGOs may benefit from the use of VIs more than for-profit organizations.

6.1 | Theoretical implications

This research contributes to the growing academic interest in VIs (e.g., Franke et al., 2023; Lou et al., 2023; Stein et al., 2022). First, while previous research provides equivocal findings on the effectiveness of VIs (Mrad et al., 2022; Stein et al., 2022), we showed that VIs are less influential than HIs when they promote prosocial causes alone. Although Franke et al. (2023) provided initial evidence that advertisements featuring HIs (vs. VIs) receive better attitudes, in their study, advertisements featuring VIs were perceived as more novel and their effects were conditional to specific product types. We extend their findings to a prosocial context and explain the underlying mechanisms leading to attitude formation.

We contribute to the similarity-attraction and authenticity literature by showing how consumers form their perception of authenticity toward different types of influencers (HI and VI). Previous studies show that VIs are perceived as uncanny based on their appearance (Koles et al., 2024; Sands, Campbell, et al., 2022). Our study adds to these previous findings by showing why consumers consider HIs' prosocial message as more authentic, which goes beyond the difference in appearance between HI and VI. The similarity-attraction theory explains the importance of having congruent morals, values, and behaviors between two individuals (Montoya & Horton, 2013). We showed that perceived homophily is an important factor that influences authenticity. In this case, we show that a human and HI relationship is likely to have a stronger homophily that shapes the authenticity of the influencer's post than that of a human and VI relationship.

Finally, our research draws attention to the importance of VIs' brand affiliation Previous studies noted the dangers of influencers' brand affiliation as this can form negative perceptions toward the influencer such as self-interest (Martínez-López et al., 2020) and make consumers question the post's authenticity (Pradhan et al., 2023). Contrary to previous findings, our research shows that in the case of VI, brand affiliation works positively when a brand affiliation is clearly signaled through a logo or message.

6.2 | Practical implications

Many popular brands are experimenting with VIs to endorse their products accordingly, and the role of VIs in promoting prosocial behavior is gaining attention (Olya et al., 2024). For instance, Astra Starr, a 19-year-old female VI living in Ukraine, dedicates her platform to raising awareness of the realities of the Ukraine war whilst running a donation campaign (Rasmussen, 2022). Such examples show the potential persuasive power of VIs in shaping consumers' behaviors. Based on our findings, we offer a few guidelines for marketers.

First, it is important for marketers to not only emphasize the appearance and demographics (age, gender, etc.) of VIs but also provide a comprehensive identity to a VI that includes their morals, values, lifestyle, and behaviors. These personal characteristics of influencers should be closely aligned with those of the intended audience. The increase in perceived homophily will not only help consumers relate to VIs but will also increase the perceived authenticity of posts created by influencers.

Second, marketers must understand the limitations associated with using VIs. Influencers are opinion leaders who lead by example, and thus, they must themselves engage in prosocial behavior to influence their followers. However, it is difficult to visualize VIs engaging in such behaviors that involve physiological action (e.g., donating blood and recycling plastics). In such cases, brand affiliation could work in favor of a VI. Mere cues of brand affiliation such as brand name or logo significantly increase prosocial behavior amongst consumers as evidenced in our study.

Third, our findings indicate that NGOs (rather than for-profit organizations) may benefit more from the use of VIs, especially as the use of VIs has smaller cost implications due to flexibility in design and no-travel requirements (Santora, 2021). Therefore, NGOs may collaborate with existing VIs or create their own VIs to convey prosocial messages to their target audience in a more cost-effective way.

6.3 | Future research directions

Our study offers several avenues for future research. First, we consistently found that the HIs are more effective in influencing consumers' prosocial behaviors in different contexts. Future studies should investigate the specific role of VIs in promoting fundraising campaigns for location-specific causes that involve humanitarian or natural disasters. While prosocial behavior is often unanimous, brand activism issues (Black Lives Matter, and LGBTQ+ rights) are partisan (Moorman, 2020), and influencers are increasingly vocal about these causes. For instance, Barbie, a VI frequently posts about Black Lives Matter. Future research could investigate to what extent a VI taking a side on a partisan issue would affect followers' perception of their authenticity.

Second, our research specifically focused on one type of VI—a human-like VI. There are several other types of VIs such as animation, character, voice-only, and brand-generated VIs (i.e., Barbie) offering different structural characteristics and personalities. It would be interesting to see if the different types of VIs (design and association) affect the effectiveness of prosocial campaigns.

Third, in Study 3, we did not clarify whether the brand affiliation was paid or unpaid. Future research should test whether the

disclosure of paid versus unpaid sponsorship has a differential effect on the persuasiveness of VI versus HI. While disclosing sponsored content reflects honesty, it might also negatively affect the overall perception of VI and post authenticity (Martínez-López et al., 2020). We speculate that a sponsorship disclosure might look more negatively on HIs than it would on VIs as consumers might find it hard to visualize VIs using the money for personal use.

Finally, we acknowledge the limitations of our data. We used Prolific as the only source of data collection. Future research should test the robustness of findings by combining different crowdsourcing platforms or using behavioral labs. Additionally, measuring the effectiveness of VIs using self-reported data is difficult for sensitive issues like blood donation. Future research should try to bridge the intention–behavior gap by providing a traceable web link or a unique coupon code along with a VI's post, which could later be redeemed. In the physical world charity organizations can conduct postdonation/purchase surveys asking, "Where did you hear about the charity?" and "What motivated you to donate today?" to better understand the motivation of prosocial behavior and measure the effectiveness of VIs. We hope these ideas will further stimulate research on this much-relevant topic.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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