Journal of Positive School Psychology
2022, Vol. 6, Issue 4
Pp 67-80

Influencing the Influencers; an Approach to Create Pro-Environmental Intentions Among the Social Media Influencers and Their Followers

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Abstract
Due to the practice of greenwashing, consumers' trust in green advertising has been reduced. Consequently, when confronted with green advertising appeals, individuals often infer ulterior motives, do not purchase sustainable products and are less inclined to behave pro-environmentally. Based on their success in regular advertising campaigns, social media influencers (SMIs) have been recommended as endorsers for green products to increase advertising effectiveness and sustainable behavior, but no empirical evidence supports these suggestions. An online study with a two-level between-subjects experimental design (N = 145) was employed to validate the positive impact of green advertising on SMIs' followers compared to non-followers. Results indicate that followers, who have established an intense para social relationship with the SMI, believe them to be more trustworthy and consequently attribute affective rather than calculative motives. The attribution of an affective motive, in turn, increased green advertising effectiveness. Furthermore, para social relationships enhanced pro-environmental intentions regarding sustainable behavior.

Keywords:
Social media influencer; para social relationships; inferred motives; green advertising; pro-environmental behavior

Article History:
Received: 24th Sep 2022
Accepted: 19th Oct 2022
Published: 15th Nov 2022

1. INTRODUCTION

While many people claim to care about the environment, their pro-environmental attitudes seldom translate into behavioral changes (Kumar, 2016). Purchasing products that are wrapped in singleuse plastic, for instance, is still common in our society, even though sustainable alternatives (e.g. compostable packaging) exist (Heidbreder et al., 2021). In the context of green consumerism, this attitude-behavior gap might result from increased knowledge about marketers' deceitful tactics. Due to the common practice of greenwashing in advertising (i.e. environmental claims that include unsubstantiated and potentially misleading statements), many products that cannot be considered sustainable are promoted as environmentally friendly (Segev et al., 2016). In contrast to greenwashing, green advertising is used to promote companies, services, or brand products that counter or reduce environmental harm (Kim et al., 2016). However, when confronted with green advertising appeals, individuals might regard them critically and attribute ulterior motives, which harms consumers' attitudes towards the ads as well as the evaluation of the advertised companies, services, or brands (Rahman et al., 2015; Schmuck et al., 2018). As a consequence, individuals are reluctant to adapt their consumer behavior and do not use sustainable product alternatives (Lyon & Montgomery, 2013). While this persuasive reactance is an understandable reaction the consumers take to protect themselves, truly sustainable products can be a great alternative to regular products. For instance, green companies use compostable instead of plastic packaging and even donate some of their revenue to environmental organizations.

Another finding by Rahman et al. (2015) delivers an additional reason to worry about the lack of trust in companies' green initiatives and claims. In a study on sustainable tourism, individuals that perceived ulterior

motives concerning a hotel's pro-environmental initiative did not only evaluate the hotel more negatively but were also less likely to behave sustainably by reporting lower intentions to participate in the hotel's linen reuse program.

Consequently, researchers on environmental communication and green advertising should analyze new possibilities to enhance the trust in sustainable products and companies to facilitate behavior change. Albeit the use of highly trusted social media influencers (SMIs) as green product endorsers has been mentioned as a great opportunity to reach this goal several times (e.g. Chwialkowska, 2019; Okuah et al., 2019), to the best of our knowledge, no empirical study has been conducted to back these recommendations. Therefore, this paper will test if and how SMIs might enhance attitudes and purchase intentions towards sustainable products while also analyzing the impact on pro-environmental behavioral intentions. Since some influencers have even focused on promoting a more sustainable and pro-environmental lifestyle (i.e. sustainability influencers that endorse a zero-waste lifestyle), analyzing the impact of their pro-environmental appeals seems highly relevant (Chwialkowska, 2019; Joosse & Brydges, 2018). To start with, current numbers and general information on influencer marketing will be presented before illustrating the associated persuasive mechanism behind influencer communication.

2. SOCIAL MEDIA INFLUENCERS AS PERSUASIVE COMMUNICATORS

The use of SMIs as brand endorsers has become an integral part of today's marketing landscape and will likely gain further importance in the coming years (Business Insider, 2021). Despite the concerns that marketing numbers would decrease due to the COVID-19 pandemic, people have spent more time online during the various lockdowns than previously. Consequently, the virus has accelerated the growth of influencer marketing. The market size has increased to $9.7 billion from $1.7 billion in 2016 and is expected to reach $13.8 billion in 2021 (Influencer Marketing Hub, 2021). Researchers have also noticed the popularity and relevance of SMIs as persuasive communicators, and the number of published articles has increased considerably since 2018 (Hudders et al., 2021). Several empirical studies have already analyzed the impact of different source and message factors on advertising effectiveness, such as the presence of advertising disclosures (Eisend et al., 2020), the number of followers (De Veirman et al., 2017), or the congruency between SMIs and endorsed brand product (Breves et al., 2019). Given that the research field has emerged quickly, SMIs have been defined in various ways. A recent literature review by Hudders et al. (2021) systematizes the different understandings of SMIs and concludes that SMIs are social actors who are mainly active on social media and have a high impact (i.e. being highly influential as opinion leaders), reach (i.e. having a substantial network and follower base) and have created an intimate bond with their followers by consistently sharing personal information and allowing glimpses into their private life. These intimate bonds between SMIs and their followers are known as parasocial relationships (PSR) and have been recognized as one of the critical mechanisms for explaining the persuasive power of influencer marketing (e.g. Hwang & Zhang, 2018; Reinikainen et al., 2020; Yuan & Lou, 2020). Due to the long-lasting and intense relationships, followers are inclined to trust SMIs' recommendations and obey their advice, which often results in decisions to purchase the advertised brand product (e.g. Breves, Amrehn, et al., 2021).

However, while the commercial success and benefit of influencer marketing have been supported both by scientists and by success stories of the marketplace, other communication disciplines have yet to employ SMIs as persuasive communicators and validate their success (Hudders et al., 2021; Schmuck, 2021). This seems especially relevant in the context of green advertising and environmental communication, as many influencers and bloggers have focused on a sustainable lifestyle and regularly give helpful advice (e.g. @trashisfortossers) or have created their own sustainable brands (e.g. the channel of @dariadaria) (Joosse & Brydges, 2018). However, influencers who are not (only) associated with sustainability have also been found to endorse sustainable brands (e.g. @pamela_rf's cooperation with "everdrop", an environmentally friendly detergent). These unlikely endorsers could be especially useful, as they might reach individuals who are not strongly interested in environmental topics yet and thus should be considered the primary target group of persuasive sustainability messages. In the context of political communication, Naderer (2022) reported that influencers who are unlikely endorsers of an environmental politics topic can also increase the intention for political action in their followers if they generally share the same topic interest. Consequently, influencers who are not solely focused on sustainability topics should also be able to persuade their followers to behave more pro-environmentally.

To validate this assumption, it seems necessary to analyze the effectiveness of SMIs' green adverting appeals and validate if followers' intentions regarding sustainable behavior might change due to pro-environmental messages. The following experimental study will investigate if and how SMIs affect their followers' attitudes towards green products and encourage sustainable behavior. In the following passage, the theory of PSR and the attribution theory will be employed and illustrated to explain the mechanism behind the persuasive effects.

3. PARASOCIAL RELATIONSHIPS

Formation of Parasocial relationships

While parasocial interactions (PSI) describe media users' situational, one-sided interaction with media characters, PSR describe the long-lasting, cross-situational connection that media users have established with a media character (Horton & Wohl, 1956; Schramm, 2008). Tukachinsky and Stever (2019) employed the interpersonal relationships model (Knapp, 1978; Knapp et al., 2014) to describe how these relationships with media characters are formed and introduced four different relationship stages. After the first stage, which is labeled initiation (i.e. impression formation) and occurs during the first parasocial interactions, media users might proceed to the second stage of experimentation (i.e. seeking exposure to the media character). After this stage, they are believed to establish (third stage known as intensification) and maintain the relationship (fourth stage known as integration/bonding). Since social media applications, such as Instagram, fortify the illusion of face-to-face relationships due to the possibility to interact with the media character (e.g. commenting or liking a post), PSR should be especially relevant and intense on social media platforms (Tukachinsky & Stever, 2019). Therefore, users who have subscribed to an SMI's media channel over a longer period of time should have already reached the third or fourth stage of the relationship (Breves, Liebers, et al., 2021).While PSR can also increase variables such as media enjoyment or attention in earlier stages (stages 1 and 2), other important media effects, such as an enhancement of persuasive effectivity, are only believed to occur in later stages of the relationship (Tukachinsky et al., 2020; Tukachinsky & Stever, 2019).

Persuasive effects of parasocial relationships

Since media users who have been following the SMI over a longer time period have received a lot of personal information about the SMI and have established a rather intense PSR (stage three or four), they should also report a stable character schema (Breves, Liebers, et al., 2021; Tukachinsky & Stever, 2019). Based on earlier interactions and positive evaluations, the media users believe the SMI to be a trustworthy friend, and consequently, only at this later stage PSR are believed to reduce levels of resistance (e.g. counterarguing), increase perceived self-efficacy, and enhance persuasive effects (Moyer-Gusé, 2008; Tukachinsky & Stever, 2019). Consequently, PSR have been employed as a moderator of persuasive effects multiple times (e.g. Boerman & van Reijmersdal, 2020; Breves et al., 2019). For instance, Breves et al. (2019) reported that followers who indicated high levels of PSR were less likely to use the perceived brand-influencer congruence to judge the source credibility when confronted with a sponsored Instagram post of the SMI. Boerman and van Reijmersdal (2020) could confirm that strong levels of PSR could negate the negative impact of advertising disclosures on brand attitudes. Recent experimental studies on influencer marketing validated that long-term followers of the SMI reported higher levels of PSR and source credibility than media users who did not subscribe to the SMI's social media channel (Breves, Amrehn, et al., 2021). Consequently, followers' levels of persuasive resistance were reduced while the advertised brand product was evaluated more favorably, which resulted in increased purchase intentions (Breves, Amrehn, et al., 2021; Breves, Liebers, et al., 2021). Media users who experience an intense PSR most likely employed the existing character schema to judge the credibility of the persuasive source rather than situational factors, such as the perceived influencer-brand congruence or the presence of an advertising disclosure. Consequently, followers might have attributed different motives to explain why the SMI advertised the brand product than non-followers.

4. MOTIVE ATTRIBUTION

According to the attribution theory, individuals tend to judge the motives of others based on either internal or external factors to explain their actions (Folkes, 1988; Kelley, 1967). For instance, in the context of endorsements, individuals often try to explain why a celebrity promotes a specific brand product by evaluating the media character's traits (e.g. Park & Cho, 2015). Promotional posts by SMIs are known to incorporate both commercial as well as organic elements, and thus the true motive behind the message might be challenging to determine (Kim & Kim, 2021; Shan et al., 2020). If media users are confronted with a sponsored message of an SMI, both affective (i.e. a voluntary endorsement based on internal factors) as well as calculative motives (i.e. the perception of an external ulterior motive) can be alleged (Kim & Kim, 2021; Mishra et al., 2015). Since useful information on the reasons behind the SMI's actions is often scarce, situational factors, such as brand-endorser congruence or the presence of an advertising disclosure, are employed by media users to infer the motives of the SMI (Breves et al., 2019; Kim & Kim, 2021). Kim and Kim (2021) for instance, could validate that the presence of an advertising disclosure and a low brand-influencer congruency would lead study participants to attribute a calculative motive (e.g. the SMI only advertised the product to earn money) rather than an affective motive (e.g. the SMI likes the product and wants followers to also benefit from it). Because of these attribution processes, brand attitudes suffered, and purchase intentions were reduced.

However, not only situational characteristics but preexisting knowledge can be used to infer the source's motives (Reeder, 2009). In the context of influencer marketing, however, empirical research has yet to validate that followers' existing experiences and PSR with an SMI can be used to attribute the motives behind their promotional post. Due to earlier knowledge about the SMI and the preexisting character schema as a trusted friend and peer, followers might be more likely to attribute affective rather than calculative motives to explain why the SMI would advertise the brand product than non-followers. This, in turn, should enhance persuasive effectiveness (Kim & Kim, 2021). The attribution of motives seems to be especially relevant in green advertising, as the environmental claims of the ad might be easily perceived as a for-profit marketing strategy rather than an actual pro-environmental effort. Therefore, the persuasive effectiveness of green advertising largely depends on how individuals perceive the communicator's motives (Rahman et al., 2015; Yu, 2020).

5. HYPOTHESES

Stable character schemas should accompany PSR that have reached the third or fourth relationship stage. Media users who have been following the SMI over several weeks, months, or even years have received a lot of personal information from the media character, have engaged in multiple positive PSI, and therefore have formed relationships based on intimacy and trust (Tukachinsky & Stever, 2019). Several surveys, as well as experimental studies on traditional advertising, have already confirmed the positive connection between levels of preexisting PSR and situational source trustworthiness (e.g. Breves, Amrehn, et al., 2021; Breves, Liebers, et al., 2021; Chung & Cho, 2017; einikainen et al., 2020). Consequently, the following hypothesis is meant to replicate earlier results in the context of green advertising.

H1: When confronted with an SMI's green advertising appeal, followers should evaluate an SMI as more trustworthy than non-followers.

While the connection between the intensity of a PSR and source trustworthiness has been validated several times in the context of influencer marketing, the psychological consequences of enhanced levels of source credibility have only recently been studied. For instance, source trustworthiness has been connected to reduced persuasive resistance (Breves, Liebers, et al., 2021). This effect might be due to the attribution of affective rather than calculative motives. If confronted with a persuasive appeal, followers should rely on their existing character schema to evaluate the motives behind the actions of the SMI. Earlier research that focused on attribution theory and motive inferences only analyzed the impact of situational factors, such as the influencer-brand fit (Kim & Kim, 2021), instead of incorporating the followers' preexisting knowledge and schemata. Since followers have found the SMI to be a trustworthy communicator, they should believe that the influencer values the advertised brand; otherwise, the influencer would not endorse it. This notion aligns with the findings of a series of qualitative interviews, where Djafarova and Rushworth (2017) reported that followers believe that SMIs "value their position of power and are unlikely to abuse it" (p. 5). Consequently, the following hypothesis is proposed.

H2: When confronted with an SMI's green advertising appeal, followers should attribute higher levels of affective motive (H2A) and lower levels of calculative motive (H2B) than non-followers.

Based on the inference of affective rather than calculative motives, media users who report high levels of PSR should be more easily persuaded by the green advertising message and, consequently, indicate more favorable attitudes as well as purchase behavior. Several studies that analyzed the impact of PSR on regular advertising effects have already supported the persuasive impact (e.g. Breves, Amrehn, et al., 2021). However, to the best of our knowledge, no study has analyzed the impact of different PSR levels on green advertising effectiveness. Consequently, the following hypothesis is proposed.

H3: When confronted with an SMI's green advertising appeal, followers should report more favorable brand attitudes (H3A) and behavioral intentions toward the brand (H3B) than non-followers.

While establishing the hypotheses, causal connections between the variables have consistently been assumed. These presumed connections should also be empirically validated, and therefore, the following hypothesis is proposed.

H4: The difference between followers and non-followers regarding their behavioral intentions can be explained by their heightened PSR, and their subsequently increased level of source trustworthiness, enhanced affective as well as reduced calculative motive inference, and, in turn, more favorable brand attitudes.

Even though SMIs have often been employed as brand ambassadors, they have also been asked to communicate other kinds of persuasive appeals, such as health or environmental messages (e.g. Bonnevie et al., 2020; Chwialkowska, 2019; Joosse & Brydges, 2018; Kostygina et al., 2020). However, scientific research on the effectiveness of these appeals remains scarce. A recent study on health communication that connected PSR with increased levels of self-efficacy (i.e. the belief that one can reach a goal or accomplish an activity) might deliver important insights for these communication disciplines (Rasmussen & Ewoldsen, 2016), as low levels of self-efficacy are often blamed when persuasive appeals do not accomplish their goals (see, for instance, the extended parallel process model; Witte, 1992). However, if levels of self-efficacy are high, individuals are more likely to engage in the recommended activity. For instance, after being confronted with a recycling advocacy advertisement, consumers who perceived high levels of self-efficacy were more likely to report recycling intentions (Lee et al., 2019).

Consequently, if participants experience intense PSR while being confronted with a green advertising appeal by an SMI, they should also be more inclined to report pro-environmental behavioral intentions. Nonetheless, there is a lack of studies that explicitly analyzed the impact of PSR with a (social media) celebrity on pro-environmental intentions to empirically support these causal assumptions (Knoll & Matthes, 2017). Park (2020), for instance, found that levels of PSR with a celebrity on Twitter were positively related to individuals' attitudes and activism concerning climate change. The author explicitly stated that future studies should measure levels of PSR with a celebrity before showing the message since the environmentally friendly tweets might have affected levels of PSR. To close this research gap and empirically validate that PSR with an SMI can enhance followers' pro-environmental intentions, the following hypothesis is proposed.

H5: When confronted with an SMI's green advertising appeal, followers should report more pro-environmental behavioral intentions than non-followers due to higher levels of PSR

6. METHODS

Design and materials

To test the proposed hypotheses, an online study with a two-level between-subjects experimental design was implemented in Germany. After the participants had been welcomed, informed, and had given their consent, they were presented with the names of six German SMI1 (four female, two male), each of whom operated a popular Instagram account. Six different lifestyle-themed SMIs were used to improve the results' generalizability and gain more participants. The participants randomly received the instruction either to choose an SMI they were not following or to choose the SMI they had been following for the longest time. This approach has been successfully used in earlier research on the impact of PSR with SMIs and was therefore deemed appropriate (Breves, Amrehn, et al., 2021; Breves, Liebers, et al., 2021).

Randomly assigning the participants either to choose an SMI they have been following or to choose an SMI they have not been following before, instead of categorizing them as followers or non-followers using a quasi-experimental approach, meant that the two groups should be broadly similar in terms of their demographic characteristics and social media use. Nonetheless, other issues, such as a systematic dropout or uneven group sizes, might be associated with this approach (Breves, Liebers, et al., 2021). If individuals could not carry out the instruction because they did not follow any of the SMIs (if assigned to choose an SMI they were currently following) or because they followed all of them (if assigned to choose an SMI they were not following), they were thanked but informed that they were not eligible for further participation in the study. Individuals were furthermore excluded if they did not use Instagram at least once a week or did not follow any influencers on Instagram.

After the participants had picked one of the SMIs, they were presented with a short text introducing her or him as a popular lifestyle SMI on Instagram. The SMIs were introduced to give some point of reference to the individuals who were asked about an SMI they did not follow or know at all. Afterward, participants were asked to indicate their PSR with the SMI. Next, they were presented with a sponsored post by the chosen SMI that included a short text introducing and promoting nucao, a sustainable chocolate bar that was wrapped in cellulose-based compostable packaging. The chocolate bar was incorporated into the picture of the influencer using Photoshop software. The German start-up The Nu-Company promises to plant a tree for every sold chocolate bar, which was also advertised in the post. Further information was included that explained the need to plant trees and reduce paper consumption by stressing the global issue of deforestation. The SMI explicitly asked media users to recycle and reduce their paper consumption. The photos of the SMIs were kept as similar as possible, and the text next to the photos as well as all other elements (e.g. number of likes) were identical for the six SMIs. The stimulus materials can be provided by the researchers upon request.

Measurements

The recruited social media users indicated their level of PSR using the friendship dimensions of Tukachinsky's (2010) Multiple Parasocial Relationships Scale. Seven-point Likert scales were used throughout the questionnaire. In total, 13 items were included ($\alpha = .92$; $M = 3.73$; $SD = 1.20$). For instance, the participants rated how likely they were to trust the SMI with important personal information. After the participants had seen the fabricated Instagram post by the SMI, they were asked to rate the trustworthiness (5 items; $\alpha = .94$; $M = 4.61$; $SD = 1.38$) of the influencer based on the scale proposed by Ohanian (1990). Afterwards, they were asked to evaluate the affective (2 items; $r = .68$, $p < .001$; $M = 4.20$; $SD = 1.40$) and calculative motives (2 items; $r = .32$, $p < .001$; $M = 3.60$; $SD = 1.38$) of the SMI regarding the persuasive message. Participants were presented with two items for each motive, such as "The influencer feels emotionally attached to the product." and "The major motive of the influencer's posting is self-interest.", based on the scales by Kim and Kim (2021). To measure media users' attitudes and purchase intentions towards the branded chocolate bar, the scales by Spears and Singh (2004) were employed. For instance, participants were asked how much they liked the chocolate bar nucao (5 items; $\alpha = .96$; $M = 4.13$; $SD = 1.65$), and how likely they were to choose nucao, when they were shopping for a chocolate bar (5 items; $\alpha = .92$; $M = 3.94$; $SD = 1.56$). The scale by Ahn et al. (2014) was then used to measure pro-environmental behavioral intentions concerning their paper consumption. For instance, participants were asked to indicate how likely they would recycle paper in the future. After excluding one item to improve reliability, the scale consisted of four items ($\alpha = .80$; $M = 5.46$; $SD = 1.23$). Finally, participants answered questions about demographic characteristics, their Instagram use, and their general topic involvement concerning sustainable paper consumption (5 items based on Ahn et al., 2016; $\alpha = .81$;$M = 5.71$; $SD = 1.39$) and were debriefed. The inter-correlations of the variables and the participants' demographic characteristics are displayed in Table 1.

Table 1. Inter-correlations among the variables.

		1	2	3	4	5	6	7	8	9
1	Parasocial relationships	–								
2	Trustworthiness	.465**	–							
3	Affective motive	.230**	.550**	–						
4	Calculative motive	-.104	-.465**	-.408**	–					
5	Product evaluation	.369**	.511**	.460**	-.225**	–				
6	Purchase intentions	.350**	.499**	.427**	-.157	.830**	–			
7	Pro-environmental intentions	.317**	.231**	.102	-.037	.386**	0.407**	–		
8	Instagram use	-.021	.000	.010	.044	-.073	-.005	.027	–	
9	Gender[i]	.028	.193*	.164*	-.098	.306**	.179*	.083	.115	–
10	Age	-.042	-.027	.048	.240**	.001	.065	.036	-.250**	-.057

Note. * $p < .05$; ** $p < .01$; $N = 145$.
[i]1 = male, 2 = female

Participants

Participants were mainly recruited using social media channels such as Instagram and Facebook and did not receive incentives for their participation. To gain more participants, the researchers also wrote direct messages to the followers of the six influencers on Instagram. Several participants were excluded: those who did not follow the instructions concerning the selection of an SMI (n = 17) and those who did not correctly answer two items that were included as attention checks near the beginning and the end of the questionnaire (n = 12; e.g. "Please select the very left box to show that you are paying attention."). This resulted in an overall sample of 145 participants, with a mean age of 23.45 (SD = 5.32) years and an age range of 17–59 years. The sample consisted of 114 women and 31 men and thus was predominately female. About 93.1% of the participants indicated that they had completed high school or earned a higher education degree. Eighty-two participants were part of the non-follower group, and 63 individuals currently followed one of the influencers, creating slightly unequal group sizes. The followers indicated that they had been following the SMI for one month or less (11.1%), several months (14.3%), more than six months (25.4%), and more than one year (49.2%). The appropriate tests showed no significant differences between the conditions (non-follower and follower) in terms of the participants' gender, χ^2 (1, N = 145) = 0.47, p = .828; age, t(143) = −1.64, p = .103; educational degree, χ^2 (5, N = 145) = 4.98, p = .414; Fisher's exact test; duration of daily Instagram use, t(143) = 0.69, p = .489; or their general involvement with sustainable paper consumption, t(143) = −0.89, p = .374.

7. RESULTS

For the manipulation-check, a one-way ANCOVA was conducted using SPSS, Version 26 (IBM Corp., Armonk, NY, USA) to confirm that followers engaged in more intense PSR than non-followers. Because of the experimental setting and the potential issue of systematic dropout, the gender, age, and Instagram use of the participants were included as covariates. As expected, the SMIs' followers indicated higher levels of PSR (M= 4.19, SD = 1.14) than did the non-followers (M= 3.37, SD = 1.13). The difference reached significance, F(1, 140) = 19.37, p < .001, partial η^2 = .122. A one-way MANCOVA was conducted that included individuals' perceived source trustworthiness, affective as well as calculative motives, brand evaluation, purchase intention and pro-environmental behavior as dependent variables. Again, the gender, age, and Instagram use of the participants were included as covariates. Using Hotelling's trace statistic, there was a significant effect of participants' follower status on the dependent variables, T = 0.17, F(6, 135) = 3.81, p = .002, η^2 = .145. As predicted, followers believed the SMIs to be more trustworthy (M= 5.15, SD = 1.39) than non-followers (M= 4.20, SD = 1.23), supporting H1, F(1, 140) = 20.95, p < .001, partial η^2 = .130. Followers furthermore attributed higher levels of affective motives (M= 4.55, SD = 1.33) than non-followers (M= 3.93, SD = 1.40), F(1, 140) = 7.33, p = .008, partial η^2 = .050. As predicted, followers (M= 3.39, SD = 1.38) also reported significantly lower levels of calculative motives than non-followers (M= 3.76, SD = 1.37), F(1, 140) = 4.31, p = .040, partial η^2 = .030. These results are supporting H2A and H2B. In line with H3, followers indicated more positive product attitudes (M= 4.45, SD = 1.57) than non-followers (M= 3.89, SD = 1.67),

F(1, 140) = 4.93, p = .028, partial η^2 = .034. They furthermore reported higher levels of purchase intentions (M= 4.28, SD = 1.58) than non-followers did (M= 3.67, SD = 1. 50), F(1, 140) = 5.45, p = .021, partial η^2 = .037. Consequently, both H3A and H3B could be supported. A customized mixed mediation analysis was conducted in order to validate H4 using Hayes's (2018) PROCESS software, Version 3.1. The bootstrapping method was used (m = 5.000), and all reported regression coefficients are unstandardized. The follower status was included as the independent variable of interest (0 = non-follower, 1 = follower), while the intensity of the PSR and trustworthiness were included as serial mediators. The perceived affective and calculative motives were then included as parallel mediators that influenced the brand product evaluation, which in turn was connected to the purchase intentions. Figure 1 illustrates the connections between the variables and the regression coefficients. While the indirect effect of the serial mediation analysis that included the affective motives as a mediator (b = 0.10; 95% CI [0.04, 0.20]) reached significance, the indirect effect that included the calculative motive as a mediator (b = 0.01; 95% CI [−0.02, 0.05]) could not be considered significant. Therefore, H4 could only be partially supported. The overall mediation model could explain 69% of the variance in the dependent variable purchase intentions. The results of the one-way MANCOVA also indicate that followers are more willing to show pro-environmental behavioral intentions regarding paper recycling and sustainable consumption (M= 5.71, SD = 1.09) than non-followers (M= 5.26, SD = 1.30; F(1, 140) = 4.95, p = .028, partial η^2 = .034). PSR could be confirmed as a mediator of the effect based on a significant indirect effect (b = 0.24; 95% CI [0.08, 0.46]) found by a simple mediation analysis conducted with PROCESS (m = 5.000; Model 4; Hayes, 2018). Therefore, H5 could be supported. The model could explain 11% of the variance in the dependent variable.

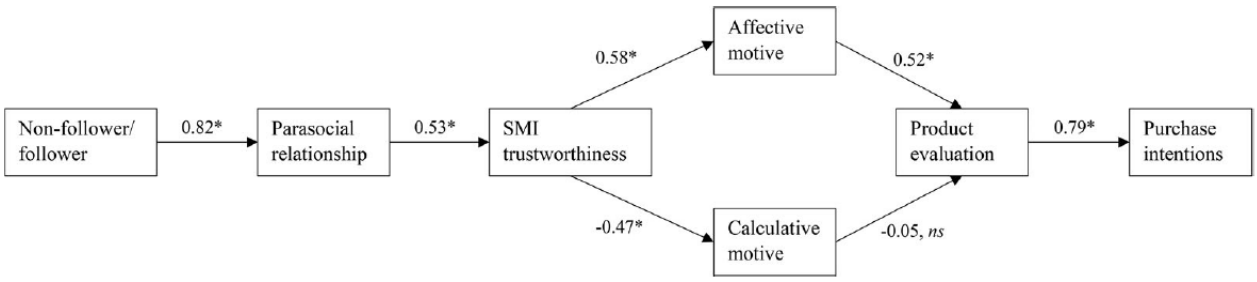

Figure 1. Customized mixed mediation analysis with bootstrapping (m = 5.000).
Note. * p <.001; ns = non-significant, N = 145.

8. DISCUSSION AND IMPLICATIONS

As expected, followers who report higher levels of PSR are more inclined to evaluate the SMIs as trustworthy than non-followers. Those who have reached later relationship stages (i.e. integration/bonding) are believed to feel that they share an exceptional relationship of trust and understanding with the media character (Tukachinsky & Stever, 2019). In contrast to non-followers, followers who had established a PSR with the SMI probably used existing character schemas to gauge the situational credibility of the communicator (Wojdynski & Evans, 2020). Since several studies have connected parasocial engagement to enhanced source credibility and trustworthiness, this finding is consistent with earlier reports (e.g. Breves, Liebers, et al., 2021; Chung & Cho, 2017; Munnukka et al., 2019).

Followers furthermore attribute affective rather than calculative motives regarding the persuasive appeal of the SMIs. The circumstance that the existing connection between a follower and an influencer can affect the inferred motives is a new and interesting finding. Until now, only situational cues, such as the presence or absence of an advertising disclosure or the influencer-brand fit, have been found to affect the attribution of affective or calculative motives behind SMI marketing (Kim & Kim, 2021). However, as evident by the reported effect sizes, participants' follower status was more important for gauging the affective rather than the calculative motive of the influencer. The calculative motive was perceived as relatively low by both followers and non-followers. This circumstance might be caused by the pro-environmental appeal that was part of the influencers' persuasive message, which might have automatically reduced the perception of a strong calculative motive due to the normative conformity.

Another interesting finding is that followers are more likely to evaluate the advertised product favorably and report higher purchase intentions. Consequently, advertisers who want to improve brand evaluations and sales numbers of their green products might be well-advised to use influencers as brand endorsers who have established a strong bond with their community. As shown by the mediation analysis, the persuasive effects are mainly due to the attribution of an affective motive, while the reduced perception of a calculative motive did not significantly influence the brand evaluation. Consequently, the perception that the SMI likes and feels connected to the brand product seems to be of higher importance for the media users than the attribution of ulterior motives. If individuals believe that the SMI likes the brand, they are inclined to evaluate the product favorably, regardless of the perception of calculative motives. These findings align with the results reported in the study of Kim and Kim (2021), where affective motive inference increased individuals' brand attitudes, but calculative motive inference only significantly enhanced advertising recognition. Consequently, advertisers should carefully analyze which elements might be responsible for increasing the perception of an affective motive. For instance, earlier research reported that the congruency between the influencer and the brand could enhance the attribution of affective motives (Kim & Kim, 2021). Using SMIs as brand endorsers for green products who have been known for their interest in environmental sustainability and who have established a strong connection with their followers might therefore be a good choice to enhance persuasive effectiveness. However, in this study, we did not use SMIs that explicitly focused on a sustainable lifestyle but usually generated lifestyle-centric content. While these influencers might not have been perceived as experts in the field, followers trusted them regardless. The earlier experiences and parasocial relationship with the influencers most likely reduced the importance of the congruency between the endorser and the product as well as the topic (Breves et al., 2019; Naderer, 2022).

These findings are of great practical relevance, as lifestyle influencers might reach a broader and less environmentally conscious audience than influencers who solely focus on sustainability. Sustainability influencers might only have the potential to reach individuals who already regard environmental issues as important. Still, it would be interesting to analyze if sustainability influencers would be even more persuasive concerning environmental issues compared to lifestyle focused influencers.

The impact of influencer appeals on followers' pro-environmental intentions and the validation of the mediating role of PSR can be considered interesting and promising findings of this study. Followers who were confronted with a SMIs' persuasive appeals that asked them to adapt their paper consumption reported more sustainable behavioral intentions afterward. Albeit levels of PSR have often been connected to persuasive effects in advertising, this is the first empirical study that could validate the causal connection in the context of environmental communication. Therefore, while influencers can be considered well-suited to communicate (green) product appeals, they might also be good communicators for pro-environmental causes. Even though (environmental) NGOs have used influencers to spread their non-commercial messages rather hesitantly, they might be a good opportunity to increase trust in and evaluations of the organization and motivate sustainable behavior.

9. LIMITATIONS AND FUTURE RESEARCH

While the findings of the study can be considered important for persuasive communicators as well as researchers, several aspects must be evaluated critically. Even though the results support earlier recommendations to employ SMIs as environmental endorsers (e.g. Chwialkowska, 2019), additional research is necessary. For instance, the persuasive mechanisms triggered by higher levels of PSR have not been included in the study. While it was assumed that PSR might enhance perceived environmental self-efficacy based on earlier findings (Rasmussen & Ewoldsen, 2016), this notion cannot be empirically supported. Furthermore, behavioral intentions were generally relatively high in both groups (i.e. above midpoint), which might be due to the environmental appeal that was part of the Instagram post. Future studies should integrate a comparison group that is not confronted with any form of environmental appeal to generate good reference values concerning pro-environmental intentions. Another critical factor that was not analyzed in this study is the pro-environmental behavior of participants rather than behavioral intentions. Longitudinal studies should thoroughly examine the long-term impact of SMIs' environmental appeals on followers' behaviors to validate their value as environmental spokespersons.

Furthermore, it would be interesting to analyze if green (advertising) appeals by SMIs are especially effective for specific groups of people. For instance, individuals who are very critical concerning green

advertising or sustainable behavior have been found to attribute an ulterior motive when confronted with green advertising (Yu, 2020). Therefore, employing trusted SMIs as persuasive communicators might be especially effective for individuals who score high on green advertising skepticism. Other personal characteristics or demographics (e.g. gender; Yu, 2020) might also be relevant moderators of the persuasive effects and should be analyzed in future studies that employ a more diverse and balanced sample. The sample was mainly composed of young and well-educated German females in this study. Since roughly half of Instagram users are male (statista.com, 2021), future studies should try to collect a more heterogeneous sample that better represents the population of Instagram users.

In this study, a truly sustainable product was introduced and advertised by the SMIs. However, influencers might also promote pseudo-green products and consequently enhance the effectiveness of greenwashing appeals, which would be detrimental to the environment. Researchers should analyze and validate if regular interventions to increase green advertising literacy (e.g. Fernandes et al., 2020; Naderer & Opree, 2021) are suited to increase the skepticism towards SMIs' green appeals or if followers will listen to SMIs regardless of their increased literacy. Additionally, persuasive appeals by SMIs are present on other social media platforms, such as TikTok, Twitch, or YouTube, and are integrated into various media formats, such as stories, reels, and live videos. Since several of these platforms and formats might especially facilitate parasocial engagement due to high perceived interaction and direct addressing (Liebers & Schramm, 2019; Tukachinsky et al., 2020; Voorveld et al., 2018), research on the impact of (green) SMI advertising should also incorporate material aside from simple Instagram posts.

By randomly assigning participants to the follower or non-follower condition, we were able to manipulate the level of participants' PSR experimentally. However, several limitations of this approach also must be considered critically. Firstly, the dichotomous categorization of participants into non-followers and followers seems too simplistic, as followers greatly varied in their following duration, reaching from several weeks to years, and might have been in different relationship stages. Future studies might want to analyze the impact of the follower status in greater detail and compare the impact of persuasive influencer appeals on short-, intermediate-, and long-term followers. Short-term followers might not be as easily persuaded if the persuasive effectiveness only increases in later relationship stages as suggested by Tukachinsky and Stever (2019). Secondly, even though an experimental setting was employed, and participants were randomly assigned to the follower or non-follower condition, the groups may have differed in several aspects. While important factors, such as age, gender, and Instagram use as well as involvement with the environmental topic were analyzed and no differences between groups were found, other variables might have differed due to systematic dropouts. For instance, we did not ask participants about their prior familiarity with the advertised brand, which might have varied between the experimental conditions. Thirdly, only selfreport measures were included to measure participants' earlier relationship with the influencer. They might have misremembered how long they had been following the influencer or simply ignored the experimental instruction and picked someone they did not follow to be eligible for participation. Including factual questions about the influencer whom participants are supposedly following in future studies might be a possibility to verify their self-reports objectively.

Another possibility to avoid these issues in future studies might be using a true longitudinal design by creating a new SMI that participants would have to follow over several weeks. With this approach, albeit more time-consuming and costly, the number of interactions as well as the content could be controlled to vary the levels of PSR with the SMI systematically, and the internal validity of the results could be increased.

10. CONCLUSION

Based on the results of this study, SMIs seem to be suitable communicators to promote green products and a more sustainable lifestyle. However, as this is the first study to experimentally analyze the impact of SMIs' appeals on green adverting effectivity and sustainable behavioral intentions, additional research seems necessary to gauge the potential of influencers in environmental communication. Since parasocial processes have been connected to higher involvement and engagement (e.g. Brown, 2015; Tukachinsky & Tokunaga, 2013), these greenfluencers might even be able to change overarching perceptions that are believed to underlie environmentally harmful behavior, such as the psychological distance to environmental problems (e.g. Breves & Schramm, 2021; Loy & Spence, 2020) or a loss of nature connectedness (Mayer & Frantz, 2004).

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