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## Influencers going green: How exhibited climate activism and message-sidedness affect the impact of greenfluencer posts

### Grüne Influencer: Wie zur Schau gestellter Klimaaktivismus und ein- versus zweiseitige Argumentation die Effekte von Greenfluencer:innen beeinflussen

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**Abstract:** With the intensifying discourse on climate change and the unfolding climate crisis, more and more social media influencers are addressing sustainability. These "greenfluencers" combine entertainment and lifestyle content with environmental issues, exhibiting their climate activism on Instagram and other platforms. Despite their growing influence, the factors contributing to greenfluencers' credibility, authenticity, and associated persuasive effects remain unclear. This research investigated how exhibited activism and message-sidedness impact a greenfluencer's authenticity, credibility, and persuasion when promoting sustainable products. We conducted two 2 (exhibited activism: public-sphere environmentalism vs. private-sphere activism) $\times$ 2 (message-sidedness: one-sided vs. two-sided) between-subjects experiments. The stimulus material for each participant consisted of an Instagram profile and a post promoting a sustainable bank account. Our findings show that exhibiting public-sphere activism does not improve a greenfluencer's authenticity, credibility, and persuasive effects, and a two-sided message only improves the attitude towards the bank, compared to a one-sided message, but not behavioural intentions, authenticity, or credibility. Our results have implications for greenfluencers combating the climate crisis as well as for corporate actors trying to advertise sustainable products with greenfluencers.

**Keywords:** social media influencer, message-sidedness, activism, experiment, greenfluencer, Instagram, climate change, persuasion

**Zusammenfassung:** Während sich der Diskurs über den Klimawandel intensiviert und sich die Klimakrise zuspitzt, kommunizieren immer mehr Social Media Influencer über Nachhaltigkeit. Diese „Greenfluencer" verbinden Unterhaltung und Lifestyle-Inhalte mit Umweltthemen und zeigen ihren Klimaaktivismus auf Instagram und anderen Plattformen. Trotz ihres wachsenden Einflusses sind Faktoren, die zu ihrer Glaubwürdigkeit, Authentizität und Überzeugungskraft beitragen, noch nicht geklärt. Die vorliegende Studie untersucht deshalb, wie sich die Darstellung von Aktivismus und zweiseitige Argumentation auf die Authentizität, Glaubwürdigkeit und Überzeugungskraft von Greenfluencer:innen auswirken, wenn diese für nachhaltige Produkte werben. Wir haben zwei 2 (Aktivismus: öffentlich vs. privat) $\times$ 2 (Argumentation: einseitig vs. zweiseitig) Experimente durchgeführt. Das Stimulusmaterial für die Teilnehmenden bestand aus einem Instagram-Profil und einem Beitrag, der für ein nachhaltiges Bankkonto warb. Die Ergebnisse zeigen, dass das

Darstellen von Aktivismus keine positiven Auswirkungen auf die Authentizität, Glaubwürdigkeit und Überzeugungswirkung von Greenfluencer:innen hat, und dass eine zweiseitige Botschaft im Vergleich zu einer einseitigen Botschaft nur die Einstellung gegenüber der Bank verbessert, nicht aber Verhaltensabsichten, Authentizität oder Glaubwürdigkeit. Unsere Ergebnisse haben Implikationen für Greenfluencer:innen, welche die Klimakrise bekämpfen, sowie für Unternehmen, die mit Greenfluencer:innen für nachhaltige Produkte werben.

**Schlagwörter:** Social Media Influencer, Argumentationsform, Aktivismus, Experiment, Greenfluencer, Instagram, Klimawandel, Persuasion

## 1. Introduction

In the November 2019 issue of the scientific journal *BioScience*, 11,000 scientists called for climate action and stated that the terms "climate emergency" or "climate crisis" appropriately reflect the detrimental impact of human civilization on planet Earth (Ripple et al., 2019). As the climate crisis unfolds and the discourse intensifies, public awareness and concern have grown significantly (Andre et al., 2024; Baiardi & Morana, 2021). Such awareness is also evident on social media platforms, where discussions of environmental issues and sustainable living practices have gained increasing prominence (Economist Intelligence Unit, 2021; Facebook IQ, 2019, 2020).

This development has caught the attention of both activists and social media influencers advocating for environmental causes, creating a new hybrid role that merges activism and influencer marketing (Puentes, 2021). Such influencers are called "greenfluencers" (e.g., Boerman et al., 2022), "environmental influencers" (e.g., Dekoninck & Schmuck, 2022), "sinnfluencers" (e.g., Schorn et al., 2022), "eco-influencers" (e.g., Huber et al., 2022), or "green influencers" (e.g., Yıldırım, 2021). They combine entertainment and lifestyle content with environmental issues, display their climate activism on Instagram and other social media platforms and try to educate the public on these issues (Maares & Hanusch, 2020; Schmuck, 2021). Prominent examples of greenfluencers include Leah Thomas (@greengirlleah), who promotes intersectional environmentalism, Isaias Hernandez (@queerbrownvegan), who posts content on eco-friendly living and environmental justice, and Marisa Becker (@mysustainableme), a German greenfluencer and journalist focusing on sustainability. As a subgroup of influencers, they have a large number of followers and post content related to sustainability, aiming to raise concerns about the climate crisis or advertise sustainable consumerism and behaviours (Baake et al., 2022; Knupfer et al., 2023). This advocating role blurs the line between influencers and activists (Haenfler et al., 2012; San Cornelio et al., 2021a, 2022; Yıldırım, 2021). Nevertheless, at least some greenfluencers reject being considered "influencers" or "activists," which underlines that there is a category in between (San Cornelio et al., 2021b).

Distinct from traditional activists who are committed to public collective actions and intent to influence the behaviour of the policy system, greenfluencers are not necessarily involved in organized collectives, but they promote a sustainable lifestyle on an individual level through their example (San Cornelio et al.,

2021b; Stern et al., 1999, 2000). They promote private-sphere behaviours such as sustainable fashion, slow travelling, veganism, waste reduction, but also initiate public-sphere activism (Knupfer et al., 2023). Public-sphere activism involves, for example, active involvement in environmental organizations, petition signing, or demonstrations to change public policy (cf., Balzekiene & Telesiene, 2012; Haenfler et al., 2012; Stern, 2000). In minority influence theory, such activists are seen as part of a consistent and confident minority advocating for social change who may exert significant influence by consistently promoting sustainable practices and climate activism to their followers (Moscovici, 1979). Their persistent messaging can challenge the dominant consumerist behaviours and eventually sway a larger audience toward adopting more sustainable lifestyles.

Therefore, the aim of this study was to examine aspects of greenfluencers that contribute to the success or failure in the promotion of environmental behaviour. Various studies on influencers have shown that credibility and authenticity are significant for influencer marketing and persuasion (e.g., Boerman et al., 2022; Schouten et al., 2020). Especially when new products are to be launched, there is often uncertainty regarding the product, which makes credible and authentic communication particularly important when promoting sustainable products (e.g., Hudders et al., 2021; Zhang et al., 2021). Both aspects could be improved, on the one hand, when greenfluencers exhibit their public-sphere engagement in climate activism, and on the other hand, by critically evaluating features of promoted sustainable products (two-sidedness messages). Therefore, this research investigates how exhibiting climate activism on a greenfluencer's profile and the message-sidedness of a sponsored post affect the greenfluencer's credibility, authenticity, and persuasive outcomes.

In two experiments, we concentrated on aspects of improving credibility, authenticity, and persuasion and investigated if it is beneficial when greenfluencers actively exhibit their public-sphere climate activism on their social media profiles. Moreover, we examined the effects of message-sidedness because greenfluencers often claim to scrutinize products and consumption patterns critically. Thus, the aim of this research was to better understand how exhibited activism and message-sidedness impact a greenfluencer's authenticity, credibility, and the intention to obtain further information about sustainable banks (information intention) when promoting sustainable products in paid partnerships. In doing so, we follow the call of Hudders et al. (2021) to conduct more research into the factors that promote the credibility and authenticity of an influencer and how this can influence their persuasive power. For this study, we used sustainable banking as a case, following a current trend in the financial sector and its large interest among heavy social media users (Kumar, 2024): An industry report showed that 99 % of Gen Z and 97 % of Millenials are very interested in sustainable investing (Morgan Stanley, 2025).

## 2. Theoretical background

When greenfluencers address lifestyle-oriented environmental topics, this can affect their followers' attitudes and behaviour and increase political participation (Dekoninck & Schmuck, 2023). By viewing such content, greenfluencers' followers may adopt sustainable values and behaviours by observing the actions and lifestyles exhibited on their accounts (Bandura, 1977). Therefore, greenfluencers can be particularly valuable for companies, as it is becoming increasingly difficult for them to successfully communicate sustainable initiatives via traditional channels due to accusations of greenwashing (Breves & Liebers, 2022). Greenfluencers can prevent such accusations when they promote products or behaviours congruent with their lifestyle (e.g., Audrezet et al., 2020; Breves et al., 2019; J. A. Lee & Eastin, 2021; Pöyry et al., 2019; Schouten et al., 2020; Sokolova & Kefi, 2020). To achieve this congruency or fit between their lifestyle and products, they regulate their self-presentation, aiming to be perceived as authentic and credible, which strengthens their persuasion (Haastrup, 2022; Silva, 2021). Nevertheless, it is still unclear which factors contribute to a greenfluencer's credibility, authenticity, and related persuasive effects – particularly if greenfluencers engage in paid partnerships (cf., Hudders et al., 2021).

### 2.1 Credibility of greenfluencers

Credibility has been a focal point of various studies on influencer marketing (e.g., Schorn et al., 2022; Schouten et al., 2020; Shrivastava et al., 2021; Sokolova & Kefi, 2020). According to Hovland et al. (1953), expertise and trustworthiness are relevant dimensions contributing to the construct of credibility. Expertise is the extent to which a communicator is perceived as a source of valid statements. This is particularly important for greenfluencers because they usually have no formal education or special knowledge regarding the sustainability of products, but they instead advocate for a certain lifestyle based on their experiences (e.g., Baake et al., 2022; Schorn et al., 2022). For this reason, trustworthiness is also crucial, as their expertise is typically based on experience and followers need to trust these personal experiences. Various studies have confirmed that perceived expertise and trustworthiness can foster a favourable view of influencers and positively affect recipients' beliefs, opinions, attitudes, and behaviours (e.g., Boerman et al., 2022; Breves et al., 2019; Weismueller et al., 2020). Credibility is, therefore, a key aspect of a greenfluencer's persuasiveness.

### 2.2 Authenticity of greenfluencers

Another key aspect in influencer and persuasion research is authenticity, a multifaceted construct linked to attributes such as genuinity, truthfulness, or originality (e.g., Pöyry et al., 2019). Authenticity differs from credibility in that it is less about professional expertise or trust in competence but rather about the extent to which the actions align with the person's values (Lee & Johnson, 2022). Various studies have found that authenticity affects the impact of activists' campaigning (e.g., Pöyry et al., 2019; Thomas & Fowler, 2023). Therefore, the concept of au-

thenticity has become a contentious issue within online activism, but it is still unclear which factors strengthen or weaken the authenticity of a greenfluencer (Hudders et al., 2021). For example, on the one hand, the commercial interests of greenfluencers may conflict with their activist agenda and authenticity as they must navigate the balance between monetization and genuine advocacy (e.g., Wellman et al., 2020). On the other hand, when greenfluencers exhibit public-sphere activism on their profiles, this may be to convey and increase their authenticity (San Cornelio et al., 2024b). Therefore, we investigate authenticity as a second key factor for increasing a greenfluencer's persuasion.

## 2.3 Exhibiting public-sphere activism

Greenfluencers typically exhibit their private environmentalism or public activism on their social media profiles. They aim for a fit between public profile and individual posts, which is important for addressing criticism based on perceived discrepancies between their public environmental discourse and personal actions (Boerman et al., 2022; Thomas & Fowler, 2023). Prior research has shown that this fit or congruence is crucial for their credibility, authenticity, and persuasive outcomes (Boerman et al., 2022; Breves et al., 2019; Sparkman & Attari, 2020). Greenfluencers could strengthen the perception of their profiles as congruent by posting participation in public climate protests alongside their private efforts to protect the environment. If greenfluencers are seen as part of a larger collective movement that is publicly respected, this could reflect on their perceived expertise and trustworthiness. Moreover, sharing unaltered "behind the scenes" material or communicating passionately about the topic can increase authenticity because this demonstrates a greenfluencer's intrinsically motivated engagement (Abidin & Otis, 2016; Audrezet et al., 2020).

Therefore, displaying participation in public-sphere activism, such as climate strikes, may underline the intrinsic motivation of a greenfluencer, which should strengthen the perception of consistency between their values and actions. Previous research indicates that increasing the credibility and authenticity of a greenfluencer should also have a positive impact on their persuasiveness and thus be beneficial for the promotion of products and behaviours (e.g., Boerman et al., 2022; Schouten et al., 2021). We hypothesize that exhibiting public-sphere activism on a greenfluencer's profile increases their perceived credibility, authenticity, and persuasive outcomes compared to exhibiting private-sphere environmentalism (cf., Stern, 2000). While private-sphere behaviours have a direct but small environmental impact, public-sphere activism can affect the environment indirectly by influencing public policies (Stern, 2000). Nevertheless, we assume that exhibiting public-sphere activism can also improve attitude and behavioural intentions due to an increase in credibility and authenticity.

> H1: When promoting a sustainable product, exhibiting public-sphere activism improves a greenfluencer's authenticity, credibility, and persuasive outcomes, as compared to a profile only exhibiting private-sphere environmentalism.

## 2.4 Message-sidedness

Moreover, transparent and fact-based communication can create authenticity and credibility when greenfluencers share their personal, unedited opinions, demonstrating a personal sense of integrity (Audrezet et al., 2020). Since the presence of paid partnerships is a constant threat to the authenticity of greenfluencers, it seems important for them to also communicate critical aspects of a product (Hudders et al., 2021; Lee & Johnson, 2022). Therefore, greenfluencers do not just "blindly" advertise products but rather review, inform, and evaluate in a critical manner (De Veirman & Hudders, 2020; Yalcin et al., 2021). Including critical aspects of a product can create a belief that the post is honest and thereby increase credibility because this can hide the persuasive intent of native ads (Beckert et al., 2020; Eisend, 2006). Therefore, being transparent and critical about products is important for greenfluencers to be perceived as authentic and credible (Audrezet et al., 2020; Hudders et al., 2021; Waldhoff & Vollmar, 2019; Wellman et al., 2020).

However, increased credibility does not necessarily lead to increased brand attitude or purchase intention (Lee & Johnson, 2022). Overall, research regarding message-sidedness (e.g., Allen, 1991; O'Keefe, 1999) in the context of native advertising (Beckert et al., 2020; Hwang & Jeong, 2016; Schlosser, 2005; Uribe et al., 2013) or influencer marketing (Braatz, 2017; De Veirman & Hudders, 2020; Lee & Johnson, 2022) is still conflicted as to whether two-sided messages might be particularly persuasive when common counterarguments are addressed. Allen (1991) suggested that two-sided messages are only more persuasive than one-sided messages when including a refutation. Refutational two-sided messages mention counterarguments and then refute them, while nonrefutational messages only mention counterarguments without offering a refutation of them. To the best of our knowledge, there are no studies on message-sidedness in the context of influencer marketing for sustainable products. However, based on previous research, we assume that two-sided messages including a refutation will improve not only a greenfluencer's authenticity and credibility but also attitude and behavioural intentions as persuasive outcomes.

> H2: *When promoting a sustainable product, two-sided messages including a refutation improve a greenfluencer's authenticity, credibility, and persuasive outcomes, as compared to one-sided messages.*

## 2.5 Sustainable banking

Regarding the promoted sustainable behaviours, we focused on cause-oriented participation, which refers to everyday activities carried out with a political message, such as sustainable consumerism (Dekoninck & Schmuck, 2023). Similar to prosocial consumer behaviour, it encompasses consumer action that involves a personal cost in order to bring benefits to others or the environment (White et al., 2020). Specifically, we chose sustainable banking as a research topic because there is limited public knowledge and engagement in this field, which presents an op-

portunity for changing attitudes and behaviours (see on sustainable finance literacy, Strauß et al., 2023).

There is considerable interest among millennials and Generation Z in the topic (Morgan Stanley, 2025), a demographic group that is known for its high daily social media use (Pew Research Center, 2024). 75 % of millennials believe that their investing decisions can influence the amount of climate change caused by human activities. Sustainable finance is thus not only considered by politicians and financial actors a powerful leverage to meet the global climate and sustainability goals (UN Global Compact, 2024), but increasingly (young) social media users are also exposed to the topic (Zülich et al., 2024).

Yet, in Germany, only 17 percent of the population presently invests in climate-friendly savings, pensions, and equity funds (Wolf et al., 2022). Moreover, a study by a management consultancy showed that in Germany, a clear majority of 77 percent would not be willing to pay higher account management fees for sustainable banking, while overall, people (93 %) were not informed whether their bank already offered sustainable finance products, or not (Bock, 2023). In general, the literacy rate of sustainable finance is low (Strauß et al., 2023), but those who score high are more likely to invest in sustainable finance products. Therefore, sustainable banking is a suitable subject for research because prior knowledge is nearly absent, and the need to further engage with the topic can be a low-threshold dependent variable corresponding to a realistic scenario.

## 3. Method

To test the hypotheses, we conducted two 2 (exhibited activism: public-sphere vs. private-sphere) $\times$ 2 (message sidedness: one-sided vs. two-sided) between-subjects experiments. The first experiment was conducted with a student sample, while the second experiment was conducted with a sample provided by a market research institute. The study was approved by the university's ethics committee. Supplemental materials are available on the Open Science Framework (https://osf.io/ayfg7/?view_only=389750146680459796f2332ada7a1567).

### 3.1 Stimulus material

The stimulus material for each participant consisted of an Instagram profile (including story highlights, six pictures, and a biography) and an Instagram post promoting a sustainable bank account. We used photos of a real female greenfluencer who gave us permission and changed the account name. The fictitious greenfluencer was named Nora Stässler (@greenlivingwithnora), and 21,300 followers were attributed to her. This number of followers puts her in the range of so-called micro-influencers (cf., De Veirman et al., 2017; Hudders et al., 2021). We did not choose a higher number of followers since this could have made participants wonder why they had never heard of the greenfluencer. Nevertheless, a smaller number of followers does not harm the influencer and may even increase trust and attitudes towards a promoted product (Pittman & Abell, 2021).

We designed two profile screenshots for the same greenfluencer, one exhibiting public-sphere climate activism and one showing recipes, landscapes, and discount codes (private-sphere) instead. Nevertheless, both accounts had a clear focus on nature and sustainability (cf., Baake et al., 2022). For the profile exhibiting public-sphere activism, we implemented a profile picture filter with a call for the next Fridays for Future climate strike. Moreover, we mentioned climate activism and engagement with Fridays for Future as an interest in the biography (versus fair fashion) and in the story highlights (see Figure 1).

To manipulate message-sidedness, we designed an additional sponsored post about a fictional sustainable bank account, which participants received on the next page of the questionnaire (see Table 1 and OSF). The post either included only supportive arguments or described that sustainability criteria are often vague and non-transparent (counterargument), but the greenfluencer's research concludes that these concerns are unfounded (refutation). Moreover, the post in the condition exhibiting public-sphere activism repeated that the greenfluencer herself participates in climate strikes, while this was not mentioned in the private-sphere condition.

## 3.2 Pilot study

We conducted a small pilot study to test the material ($N = 39$, $M_{age} = 26.8$, $SD_{age} = 3.56$, 80.40 % female). The initial manipulation of public-sphere activism did not include references to Fridays for Future in the profile, only pictures of climate strikes (see OSF). The results showed that participants perceived greater political engagement in the public-sphere activism condition ($M = 4.55$, $SD = 0.60$)[1] than in the private-sphere environmentalism condition ($M = 4.00$, $SD = 0.88$), $F(1, 37) = 5.21$, $p = .03$, $\eta_p^2 = .12$. Despite the significant differences, both values were comparatively high, which is why we revised the stimulus material to increase the differences (see OSF). In this context, we added the references to Fridays for Future and reinforced the manipulation with additional images of climate strikes.

Regarding the manipulation of message-sidedness, the post initially either included only supportive arguments or described that sustainability criteria are often vague and non-transparent (counterargument). The two-sided post described that the investments in environmentally friendly causes are sensible, but that the greenfluencer would like to see more detailed reports on the projects because sustainability is a vague term (see OSF). She calls for information on the definition of sustainability and the standards. At the same time, it was described that Futura Bank plans to share corresponding reports about the sustainable investment strategies in the future (refutation).

When comparing the posts, the results showed that both merits and weaknesses of the bank were addressed more strongly in the two-sided condition ($M = 3.30$, $SD = 1.30$) than in the one-sided condition ($M = 1.74$, $SD = 0.81$), $F(1, 37) = 20.07$, $p < .001$, $\eta_p^2 = .35$. Moreover, consistent with our expectations, partici-

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1    All constructs were measured on five-point scales.

pants reported that more critical concerns were addressed in the two-sided condition ($M = 3.70$, $SD = 0.80$) than in the one-sided condition ($M = 2.58$, $SD = 1.22$), $F(1, 37) = 11.67$, $p < .01$, $\eta_p^2 = .24$. In addition, there was an open question about the argumentation of the post (thought listing: What positive and/or negative aspects of the bank did she mention?). The answers indicated that although it was recognized that more critical aspects were addressed in the two-sided post, the refutation of these was not perceived as such. Therefore, the stimulus material was edited to clarify why the greenfluencer concluded that the criticism was unjustified, which resulted in the stimulus material described in Table 1.

## 3.3 Procedure study 1 and 2

After accepting the informed consent form, participants were initially asked a screening question to ensure they were active Instagram users. Demographic questions followed, before participants were randomly assigned to one of the experimental conditions. They were asked to look at the profile of a greenfluencer and a post about a sustainable bank account, after which several persuasive outcomes were measured. Furthermore, they were asked if they knew the greenfluencer and had seen posts by her before. Afterwards, environmental awareness was measured. At the end, the participants were thanked and debriefed. The questionnaire contained three quality checks to ensure data quality. Participants who failed the quality checks were immediately excluded to prevent questionable research practices and ensure data quality (cf., Kane, 2024; Matthes et al., 2015).

## 3.4 Measures

Because most people have limited knowledge of sustainable banking and do not know if their bank offers sustainable products, we measured the information intention regarding sustainable banks with three items adopted from Schorn et al. (2022) as the dependent variable (e.g., "I would like to find more information about Futura Bank"; $\alpha_1 = .96$, $\alpha_2 = .93$). Moreover, the attitude towards the bank (e.g., "I like that Futura Bank invests exclusively in environmentally friendly and sustainable companies and causes"; $\alpha_1 = .80$, $\alpha_2 = .91$) was measured with six items. Perceived credibility was measured with two dimensions: trustworthiness (e.g., "To me, Nora Strässler seems trustworthy"; four items, $\alpha_1 = .91$, $\alpha_2 = .95$) and expertise (e.g., "To me, Nora Strässler seems expert"; five items, $\alpha_1 = .91$, $\alpha_2 = .96$). The authenticity of the greenfluencer was measured with five items (e.g., "In my opinion, Nora Strässler seems to remain true to her beliefs and values"; $\alpha_1 = .88$, $\alpha_2 = .93$) adapted from Ilicic and Webster (2016). Finally, the recipient's environmental awareness was measured following Geiger and Holzhauer (2020) (e.g., "It worries me when I think about the environmental situation in which future generations will probably have to live"; $\alpha_1 = .83$, $\alpha_2 = .86$). Moreover, different treatment and manipulation checks were included. All constructs were measured on five-point scales. As sociodemographics, age, gender, education, and income were measured.

## 4. Results

Because Study 1 and Study 2 were conducted in parallel and differ mainly in the sample, both results are presented together. Study 1 was conducted among 103 students (86 % female, $M_{Age}$ = 20.73, $SD_{Age}$ = 2.96). For the second study, a market research institute recruited and compensated 135 German Instagram users via an online access panel (50% female, $M_{Age}$ = 35.82, $SD_{Age}$ = 15.69). We aimed for an equal distribution of gender but did not set any fixed quotas with regard to age, as we were more interested in Instagram users than in a sample representative of the German population. Our sample is therefore slightly younger than the general population but shows a similar range in age distribution.

### 4.1 Study 1

#### 4.1.1 External validity

Regarding the external validity of the profile, the results showed that individuals seem to encounter profiles similar to the condition exhibiting private-sphere environmentalism more often ($M$ = 4.81, $SD$ = 0.44) as compared to the public-sphere condition public-sphere ($M$ = 4.16, $SD$ = 0.98), $F(1, 101)$ = 19.76, $p$ < .001, $\eta_p^2$ = .17. Likewise, they perceived the profile exhibiting private-sphere environmentalism as more typical for Instagram ($M$ = 3.92, $SD$ = 1.02) than the profile exhibiting public-sphere activism ($M$ = 3.20, $SD$ = 1.11), $F(1, 101)$ = 12.44, $p$ < .001, $\eta_p^2$ = .11. Nevertheless, all values for both variables were significantly higher than the centre of the scale ensuring external validity of the profile ($p$ < .001).

Regarding the external validity of the post, both posts were perceived as typical ($M$ = 4.22, $SD$ = 1.04). Still, participants said they are more likely to encounter posts like the one-sided ($M$ = 4.21, $SD$ = 0.85) than the two-sided ($M$ = 3.59, $SD$ = 1.24), $F(1, 99)$ = 8.71, $p$ < .01, $\eta_p^2$ = .08. All values for both variables are significantly higher than the centre of the scale ensuring external validity of the post is assured as well ($p$ < .001).

#### 4.1.2 Treatment and manipulation check

To test the manipulation of exhibited activism, we asked participants if they noticed images on the greenfluencer's profile that (among others) depicted the greenfluencer holding a protest sign at a climate strike event. The greenfluencer's participation in a climate strike was noticed more often in the public-sphere condition (n = 49) than in the private-sphere condition (n = 5). Conversely, participants in the private-sphere condition predominantly reported not seeing images of a climate strike in their profile (n = 48 vs. n = 1), $X^2(1, 103)$ = 77.40, $p$ < .001. Moreover, with regard to the post, a stronger reference to issues such as climate strikes was perceived in the public-sphere condition ($M$ = 3.40, $SD$ = 1.28) than in the private-sphere condition ($M$ = 2.72, $SD$ = 1.12), $F(1, 99)$ = 8.38, $p$ < .01, $\eta_p^2$ = 0.08. Therefore, we considered the manipulation of exhibited activism successful.

The fact that both strengths and weaknesses of the bank were addressed in the post was perceived as stronger in the two-sided condition ($M = 4.02$ $SD = 1.07$) than in the one-sided condition ($M = 2.75$, $SD = 1.25$), $F(1, 99) = 30.97$, $p < .001$, $\eta_p^2 = .24$. Nevertheless, when participants were asked whether critical aspects were also addressed in the post, there were no differences between the one-sided ($M = 3.25$, $SD = 1.40$) and two-sided message ($M = 3.49$, $SD = 1.17$, $F(1, 99) = 0.89$, $p = .35$, $\eta_p^2 < 0.01$), possibly due to the strengthening of the refutation after conducting the pilot study. Therefore, participants seem to realize that the two-sided post also mentioned weaknesses of the bank (two-sidedness), but they did not evaluate this as a "critical aspect" when refuted at the same time (refutation).

### 4.1.3 Hypothesis testing

We conducted multivariate variance analyses (MANOVAs) to assess the greenfluencer and her persuasive outcomes. With regard to the greenfluencer (expertise, trustworthiness, authenticity), the results show a positive effect of exhibited activism, Wilk's $\Lambda$ (3, 97) = 0.90, $p = .02$, $\eta_p^2 = .10$. Exhibiting public-sphere activism increased the authenticity ($F(1, 99) = 10.50$, $p < .01$, $\eta_p^2 = .10$) and trustworthiness of the greenfluencer ($F(1, 99) = 4.68$, $p = .03$, $\eta_p^2 = .05$; see  Table 2) but not their perceived expertise ($F(1, 99) = 1.84$, $p = .18$, $\eta_p^2 = .02$). However, there was no significant effect of exhibited activism on persuasive outcomes (attitude towards the bank, information intention; Wilk's $\Lambda$ (2, 98) = 0.99, $p = .55$, $\eta_p^2 = .01$). Therefore, H1 can only be accepted for authenticity and trustworthiness.

When testing the second hypothesis, there were no significant effects of message-sidedness on the assessment of the influencer (Wilk's $\Lambda$ (3, 97) = 0.99, $p > .99$, $\eta_p^2 = .01$). Regarding persuasive effects, the results revealed a main effect of message-sidedness, Wilk's $\Lambda$ (2, 98) = 93, $p = .02$, $\eta_p^2 = .07$. However, there were no significant effects for the information intention ($F(1, 99) = 1.76$, $p = .19$, $\eta_p^2 = .02$) or attitude ($F(1, 99) = 2.72$, $p = .10$, $\eta_p^2 = .03$) when conducting separate ANOVAs. Therefore, H2 is only partially supported by the data. While there is a significant overall effect of message-sidedness on the combined factors of persuasive outcomes, this effect does not extend to each individual outcome when analysed separately.

**Table 2. Means and standard deviation for dependent variables**

|  | Expertise | Trust-worthiness | Authenticity | Attitude | Information intention |
|---|---|---|---|---|---|
| Activism (H1) |  |  |  |  |  |
| Public-sphere | 3.30 (0.90) | 3.40 (0.97)* | 3.98 (0.69)* | 4.03 (0.62) | 2.89 (1.19) |
| Private-sphere | 3.06 (0.85) | 3.00 (0.80)* | 3.48 (0.83)* | 3.91 (0.70) | 2.69 (1.18) |
| Message sidedness (H2) |  |  |  |  |  |
| One-sided | 3.17 (0.93) | 3.21 (0.92) | 3.74 (0.82) | 3.87 (0.73) | 2.94 (1.09) |
| Two-sided | 3.18 (0.84) | 3.19 (0.99) | 3.71 (0.78) | 4.08 (0.57) | 2.63 (1.26) |

*Note.* Differences are significant (p < .05).

## 4.2 Study 2

The second study was conducted with a market research institute and due to the results of the pilot study, we did not include another manipulation or treatment check before measuring dependent variables but only afterwards.[2] We again used MANOVAs for the assessment of the greenfluencer and persuasive effects. To test the first hypothesis, we looked at exhibited activism. There were no significant effects of exhibited activism on the greenfluencer's expertise, trustworthiness, or authenticity (Wilk's $\Lambda$ (3, 129) = 0.99, $p$ = .64, $\eta_p^2$ = .01). Similarly, a MANOVA with intention and attitude as dependent variables did not reveal any effects for exhibited activism (Wilk's $\Lambda$ (3, 129) = 0.99, $p$ = .59, $\eta_p^2$ < .01). Therefore, H1 must be rejected as it did not improve a greenfluencer's authenticity, credibility, or persuasive outcomes when exhibiting public-sphere activism.

To test the second hypothesis, we looked at the results of the same MANCO-VAs. Regarding the assessment of the greenfluencer, there was only a marginal significant effect of message-sidedness (Wilk's $\Lambda$ (2, 129) = 0.94, $p$ = .05, $\eta_p^2$ = .06). Separate analyses show a small effect on the perceived expertise of the influencer, $F(1, 131) = 4.41$, $p$ = .04, $\eta_p^2$ = 0.03: People receiving a two-sided post reported higher expertise than people receiving a one-sided post (see Table 3).

Moreover, there was a significant main effect of message-sidedness on persuasive outcomes, Wilk's $\Lambda$ (2, 130) = 0.95, $p$ = .03, $\eta_p^2$ = .05. Separate analyses showed a main effect on the attitude towards the bank, $F(1, 131) = 4.01$, $p$ = .01, $\eta_p^2$ = 0.04: people receiving a two-sided post reported a more favourable attitude towards the bank than people receiving a one-sided post (see Table 3). However, there were no significant effects for message-sidedness on the information intention ($F(1, 131) = 0.10$, $p$ = .76, $\eta_p^2$ < 0.01). Again, H2 is only partially supported,

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2    Please note that we implemented treatment checks similar to the checks described in study 1 after measuring all dependent variables. Similar to Study 1 and in line with expectations, participants also recalled different content depending on the condition (e.g., participation in a climate strike) and again, they perceived a stronger reference to issues such as climate strikes in the post of the public-sphere condition than the private-sphere condition. However, we cannot say anything about the perception of the manipulation for message sidedness, although in the two-sided condition, participants rather recalled that sustainability was described as a vague concept (treatment check).

and a two-sided message only improved the attitude towards the bank but not behavioural intentions, authenticity, trustworthiness, or expertise.

**Table 3. Means and standard deviation for dependent variables**

|  | Expertise | Trust-worthiness | Authenticity | Attitude | Information intention |
|---|---|---|---|---|---|
| Activism (H1) |  |  |  |  |  |
| Private-sphere | 3.29 (0.99) | 3.26 (1.00) | 3.71 (0.91) | 3.88 (0.82) | 2.91 (1.41) |
| Public-sphere | 3.21 (0.97) | 3.12 (0.97) | 3.68 (0.96) | 3.92 (0.82) | 3.16 (1.40) |
| Message sidedness (H2) |  |  |  |  |  |
| One-sided | 3.07 (0.99)* | 3.10 (1.02) | 3.63 (0.96) | 3.73 (0.93)* | 3.00 (1.44) |
| Two-sided | 3.43 (0.93)* | 3.28 (0.95) | 3.76 (0.91) | 4.08 (0.66)* | 3.07 (1.38) |

*Note.* Differences are significant ($p < .05$).

## 5. Discussion

In two experimental studies, we investigated if exhibited activism and message sidedness could affect a greenfluencer's credibility, authenticity, and persuasive outcomes (see Table 2 and 3). Overall, we found few effects of exhibiting activism and message-sidedness on the assessment of the greenfluencer and behavioural intentions, but there were differences between studies 1 and 2.

When first looking at the student sample, a hypothesis-confirming effect of activism was found, and trustworthiness and authenticity were higher in the condition exhibiting public-sphere activism, but there were no direct effects on persuasive outcomes. In the second study, we found no effects for exhibited activism on any dependent variable, meaning that it did not make the greenfluencer more credible or authentic if her public-sphere activism was exhibited. Therefore, "being green" seemed to be sufficient for the assessment of the greenfluencer regarding trustworthiness, expertise and authenticity in the general sample.

Nevertheless, in both studies, credibility, authenticity, and other dependent variables were not measured immediately after the profile was shown but only after the sponsored post was shown as well. On the one hand, the recall of the profile may have been weakened by this. On the other hand, the fact that a bank account was advertised may also have influenced authenticity, credibility, and persuasion. Given climate protesters' prominent critique of banking institutions, promoting a bank account may have mitigated the effects of exhibited activism on the perception of the influencer and persuasive outcomes (cf., McCully, 2023).

Regarding message sidedness, we did not find effects of message sidedness in the first study, but the results of the second study show that it can improve the attitude towards the sustainable bank and perceived expertise of the greenfluencer when they address and refute counterarguments. People receiving a two-sided post including a refutation reported an improved attitude and expertise of the greenfluencer than people receiving a one-sided post, which is in line with previous findings of meta-analyses by Allen (1991) and Eisend (2006). However, we did change the material after the pilot study, and it is possible that the change in

the stimulus material meant that the post was no longer being perceived as two-sided with refutation but rather as a more concrete analysis of the greenfluencer on the bank which can also have a positive effect (Kapoor et al., 2023). This assumption is supported by the fact that the manipulation check in the first study showed no differences in the perception of critical arguments (although a stronger balance of strengths and weaknesses was perceived in the two-sided condition). Moreover, Eisend (2006) described that the optimal amount of negative information in order to benefit from two-sided advertising may also depend on the importance of the negative information. In studies 1 and 2, we only described that "sustainable" is a vague term, which is most likely not perceived as a strong counterargument.

One reason for the different results in the first and second study could be that the first sample of young, female academics interested in a study on influencers has a higher affinity to climate activist movements such as Friday for Futures. Accordingly, participants from Study 1 encounter similar posts more often ($M_{Study 1}$ = 4.30 vs. $M_{Study 2}$ = 3.10) and perceive them as more typical ($M_{Study 1}$ = 4.22 vs. $M_{Study 2}$ = 3.62). The young student sample seems more familiar with such native ads and showed less scepticism towards influencer marketing ($M_{Study 1}$ = 2.93 vs. $M_{Study 2}$ = 3.30). Moreover, the student sample had a higher environmental awareness ($M_{Study 1}$ = 4.02 vs. $M_{Study 2}$ = 3.71). Due to the rather small sample size of the second study, however, we could not create a sub-sample with the characteristics of the student sample to test this assumption. Nevertheless, exhibiting public-sphere activism could be particularly effective among the people who are most likely to follow such accounts. At the same time, König and Maier (2024) recently suggested that there may be less differences between green and non-green influencer posts when the environmental awareness was generally already high. This is why we performed some additional analyses using environmental awareness as a moderator for study 2.

A MANOVA with information intention and attitude as dependent variables and environmental awareness as moderator (median split at 3.86) showed a main effect for message sidedness (Wilk's $\Lambda$ (2, 127) = 0.95, $p$ = .03, $h_p^2$ = .06), and a significant interaction between message sidedness and environmental awareness (Wilk's $\Lambda$ (2, 128) = 0.93, $p$ = .01, $\eta_p^2$ = .07). Separate ANOVAs demonstrate an effect on attitude ($F(1, 127)$ = 6.10, $p$ = .01, $\eta_p^2$ = 0.05). Moreover, post-hoc analysis showed that there was no effect of message sidedness on attitude for people with high environmental awareness ($p$ = .98). People with low environmental awareness reported similarly high attitudes when they saw a two-sided post ($M$ = 4.06, $SD$ = 0.71, $p$ > .93) but when they received a one-sided post ($M$ = 3.35, $SD$ = 0.96), this had a negative effect on the attitude ($p$ < .001). Effects for information intention were not significant. With regard to the greenfluencer (expertise, trustworthiness, authenticity), there was a marginal significant effect of message sidedness (Wilk's $\Lambda$ (3, 125) = 0.94, $p$ = .05, $\eta_p^2$ = .06) but no interaction (Wilk's $\Lambda$ (3, 125) = 0.99, $p$ = .77, $\eta_p^2$ < .01)

Therefore, the results of study 2 suggests that individuals with high environmental awareness are less affected by the different posts compared to individuals with low environmental awareness; a finding that aligns with the results of prior

research (cf., de Groot et al., 2021; Meijers et al., 2019). Individuals with high environmental awareness may have more trust in sustainable products and their advocates, while individuals with lower environmental awareness react negatively when sustainable products are promoted without showing critical examination. Similarly, Schlosser (2005) suggests that individuals who like a product have a positive experience when seeing the one-sided message. On the other hand, individuals who generally dislike a product or brand react more positively to two-sided messages than one-sided messages. Interestingly, this assumption is somewhat backed up by the comparison of both studies: In the second study, we found some positive effects of two-sided message, but not in the student sample that scores generally higher on environmental awareness.

## 6. Limitations

The initial limitation, common to many influencer studies, is that we did not utilize an actual greenfluencer with his or her community. There are new features on Instagram that show suggested (sponsored) posts to users, and, in this case, they see posts without following the respective influencer. Nevertheless, our participants had no parasocial relationship with the influencer (cf., Breves & Liebers, 2022). Furthermore, we used rather small samples and therefore, small effects may not be detected, which could also explain some of the null results (cf., Kane, 2024). Another major limitation is that the manipulation check of the first study for message sidedness was only partially successful and no manipulation check for message sidedness was implemented in the second study. Participants realized that the two-sided post mentioned weaknesses of the bank, but they did not evaluate this as "critical" when refuted simultaneously (study 1). However, since we do not have null results, these results should not be due to a lack of attention on the part of the participants but to the fact that we only partially succeeded in manipulating counterarguments, including a refutation (cf., Kane, 2024).

Moreover, we limited our comparison to greenfluencers exhibiting public-sphere activism or private-sphere environmentalism and did not observe any differences. Contrasting these with a "general" influencer may have resulted in more pronounced differences (cf., Boerman et al., 2022; Pittman & Abell, 2021). Additionally, greenfluencers could lose credibility and authenticity by promoting a bank account in general. Methodologically, although both posts were perceived as equally typical, positive effects of the profile exhibiting public-sphere activism on authenticity and credibility may be counterbalanced by advertising the bank, because dependent variables were only measured after seeing both parts of the stimulus material. This also leads to the fact that it cannot be assessed independently of the sponsored posts to what extent exhibited activism influences the expertise, credibility, and authenticity of the greenfluencer. Furthermore, we measured only short-term effects and no real behaviour. Yet, for influencer marketing, it is typically not necessarily the aim to lead to a direct purchase but rather to arouse interest and that users may follow a link to get more information (cf., Schorn et al., 2022). Although we ensured that only Instagram users were included in the survey, it was not a criterion that they had to follow greenfluencers.

Lastly, we only focused on Instagram posts, but there are new platforms and features, such as TikTok or Instagram Reels, that should be addressed by future research. These new formats introduce distinct affordances that reshape the content and delivery of messages, presenting both opportunities and challenges for greenfluencers and highlighting the need for more research, which remains scarce (Huber et al., 2022).

## 7. Conclusion

Greenfluencers have established themselves as influential channels to combat the climate crisis by promoting a sustainable lifestyle and matching products. As the lines between these activist and commercial interests blur, we are observing the emergence of an influential, yet under-explored, research area (San Cornelio et al., 2021a). The results of the present research, including the differences between the two studies, emphasize the complexity surrounding greenfluencer messaging, which calls for more in-depth research. This call should also concern social movement scholars who have traditionally focused more on public collective action than on the private individual, lifestyle-driven activism of greenfluencers. Given their potential to change attitudes and behaviours, political activists cannot afford to dismiss greenfluencers as non-activists but need to consider what is effective action and what might support greenwashing. Conversely, greenfluencers pose a considerable marketing opportunity for corporations selling sustainable products. One implication from this study for companies is that it is not harmful if greenfluencers evaluate critically and not only mention the positive aspects of a sustainable product if the overall evaluation is positive. At the same time, it does not benefit companies if greenfluencers particularly exhibit public-sphere activism; however, it may bring advantages for greenfluencers themselves and they could improve their credibility and authenticity.

## Acknowledgements

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## Appendix

**Figure 1.** *Stimulus material: Exhibited public-sphere vs. private-sphere activism*
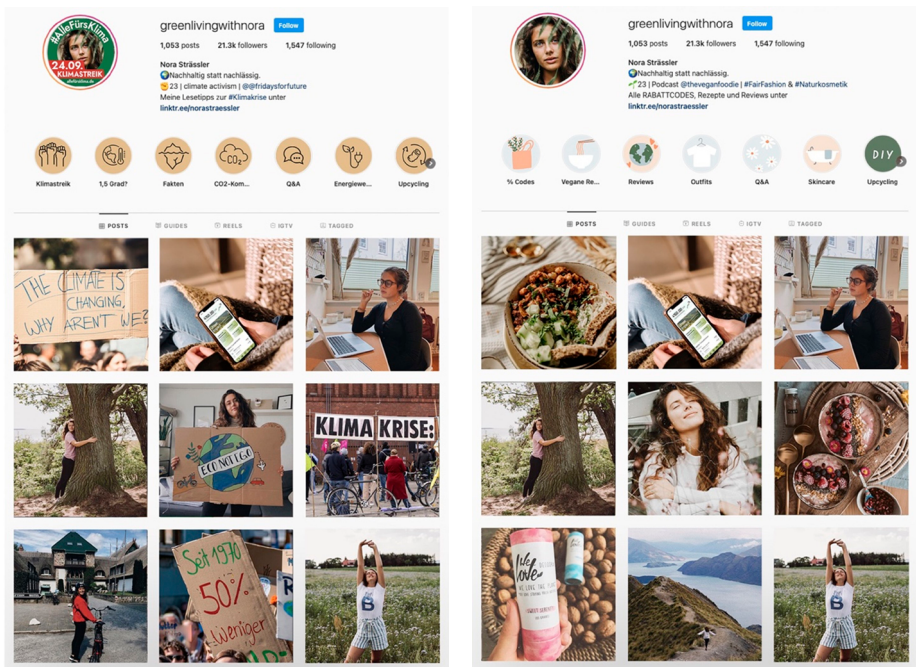


*Note.* Public-sphere activism (left) vs. private-sphere activism (right) greenfluencer profile with differences in the profile picture, biography, story highlights, and posts. Please find all material at OSF: https://osf.io/ayfg7/?view_only=38975014668o459796f2332ada7a1567

## Table 1. Manipulation of message-sidedness of studies 1 and 2

| One-sided message | Two-sided message |
|---|---|
| It's different with the sustainable @futura-bank: it promises to invest its customers' money only in ecologically sensible projects. I think that's great – and I tried it out straight away. My conclusion: their investments in environmentally friendly causes such as upcycling, renewable energies, or sustainable agriculture are definitely worthwhile. On their website, they also provide information about their sustainability guidelines and their exclusion and positive criteria. Last year, they also received an ESG Reporting Award! | The sustainable @futurabank is different: it promises to invest only in ecologically sensible projects. I think that's great – and I tried it out straight away. My conclusion: their investments in environmentally friendly causes such as upcycling, renewable energies, or organic farming definitely make sense. *But sustainability is unfortunately a notoriously vague term. As so often, I asked myself the critical question: What does Futura mean by sustainability? And how transparently is it communicated? But my worries seem unfounded. Not only do they provide information about their sustainable exclusion and positive criteria on their website, but they also received an ESG Reporting Award last year.* |

*Note.* Please find the full post at OSF: https://osf.io/ayfg7/?view_only=38975014668o459796f2332ada7a1567