



universität
wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's thesis

**The Effects of Greenwashing in Influencer Marketing: Impact on Perceived
Credibility and Attitude Toward the Brand**

verfasst von / submitted by

Andrea Kálmán

Angestrebter akademischer Grad / in partial fulfillment of the requirements for the degree of
Master of Science (MSc)

Wien, 2020 / Vienna, 2020

Studienkennzahl lt. Studienblatt /
degree programme code as it appears
on the student record sheet:

UA 066 550

Studienrichtung lt. Studienblatt /
degree programme as it appears on
the student record sheet:

Masterstudium Communication Science

Betreut von / Supervisor:

Univ. -Prof. Dr. Jörg Matthes

Table of contents

English Abstract	3
German Abstract.....	4
Introduction	5
Literature Review.....	5
Green Advertising.....	5
Content of Green Advertising Practices	6
Greenwashing	8
Greenwashing Claims.....	9
Executional Greenwashing	10
Influencer Marketing	11
Influencer Credibility	12
Influencer-Brand Congruence	13
Environmental Involvement	14
Methodology	16
Stimulus	17
Pretest of Stimulus Material	18
Measures.....	20
Data Analysis.....	21
Results	23
Additional Analyses	26
Discussion	28
Limitations	29
Theoretical and Practical Implications	30
References	32
Appendix A	38
Appendix B.....	44
Appendix C	46

English Abstract

The study explores the effects of greenwashing, presenting untrue or vague information about the environmental impact of the product or service, in the context of influencer marketing. Green advertising, together with greenwashing happens on every channel, through traditional advertisement types, such as print ads but also on social media. Despite green advertising receiving increasing scholarly attention, studies on green advertising and especially greenwashing within influencer marketing has been scarce, which constitutes a significant research gap. The current paper aims to extend the literature on greenwashing, providing theoretical and practical implications through an empirical study, employing structural equation modelling. Using data from an online research panel (N=300), different types of greenwashing claims are examined, coming from green and non-green influencers, along with the possible mediating effect of influencer credibility and the possible moderating effect of influencer-brand congruence. Results indicate that when coming from an influencer, both false and vague greenwashing claims enhance consumers' perceived greenwashing, impacting their attitudes toward the brand negatively and also decreasing the credibility of the influencer. This work offers a valuable first insight into the effects of greenwashing claims within influencer marketing, suggesting important future research directions, based on the findings.

Keywords: greenwashing, green advertising, influencer marketing, influencer credibility

German Abstract

Diese Studie untersucht die Auswirkungen des "Greenwashing", indem sie unwahre oder vage Informationen über die Umweltauswirkungen des Produkts oder der Dienstleistung im Kontext des Influencer-Marketings präsentiert. Grüne Werbung, zusammen mit Greenwashing, findet auf allen Kanälen statt, durch traditionelle Werbeformen wie Printanzeigen, aber auch in sozialen Medien. Obwohl grüne Werbung in der Wissenschaft zunehmend Beachtung findet, gibt es bisher kaum Studien über grüne Werbung. Eine Forschungslücke zeigt sich insbesondere im Rahmen von Greenwashing und Influencer-Marketing. Die vorliegende Untersuchung stellt sich als Ziel, die Literatur über Greenwashing zu erweitern. Diese liefert theoretische und praktische Implikationen durch eine empirische Studie unter Verwendung von Strukturgleichungsmodellen. Anhand von Daten aus einem Online-Forschungspanel (N=300) werden verschiedene Arten von Greenwashing-Claims untersucht, die von grünen und nicht-grünen Influencern stammen. Des Weiteren untersucht die Studie mögliche vermittelnden Effekt der Influencer-Glaubwürdigkeit und dem moderierenden Effekt der Influencer-Markenkongruenz. Die Ergebnisse der Studie deuten darauf hin, dass sowohl falsche als auch vage Greenwashing-Angaben, die Wahrnehmung der Verbraucher als Greenwashing verstärken – insbesondere wenn die Botschaft von einem Influencer stammen. Die Einstellung der Konsumenten gegenüber der Marke wird dabei negativ beeinflusst und verringern auch die Glaubwürdigkeit des Influencers. Diese empirische Arbeit bietet einen wertvollen ersten Einblick in die Auswirkungen von Greenwashing-Angaben innerhalb des Influencer-Marketings und schlägt auf der Grundlage der Ergebnisse wichtige zukünftige Forschungsrichtungen vor.

Introduction

Due to the increasing focus of the media on environmental issues, such as global warming and climate change, consumers are shifting their purchase behaviour to be more environmentally conscious (Chen & Chang, 2013), also acknowledging the personal advantages of green products (Nguyen et al., 2019). Companies have recognized this demand for green products and services and attempt to address the growing public concern for the environment through advertising (Segev et al., 2016). However, besides communicating sincere claims about the environmental impact of their products and services, companies use advertisements to disseminate overstated or falsified messages about their environmental efforts, spreading misinformation (Naderer et al., 2017).

Misleading consumers through false or vague claims to imply sustainability is an important topic both on a societal and academic level (Naderer et al., 2017), yet research gaps still remain in connection with individuals' perception. The current paper extends the literature on the effects of greenwashing, examining it in a context which received no scholarly attention so far: influencer marketing through social media and influencer-brand congruence. In the next pages the relevant literature will be discussed around the concepts of green advertising, greenwashing and influencer marketing, before presenting the proposed model, the methodology along with the results and concluding the study with theoretical and practical implications.

Literature Review

Green Advertising

Companies aim to enhance attitudes and behaviours about their brands by highlighting environmentally friendly features in the production or distribution of their products or services (Matthes, 2019). This promotion technique, green advertising, refers to all commercial

messages that target the needs of eco-conscious customers and other stakeholders, conveying environmental sustainability (Leonidou et al., 2011).

Even though the academic literature on green marketing has grown significantly in the past few decades (Nyilasy et al., 2014), green advertising is not a very recent phenomenon, as the first environmental ads appeared in the second half of 1960s, when concerns against the ecological practices of many firms were raised by the public (Easterling et al., 1996). After the sharp increase of the 1980s, mainly due to heightened public awareness, the 1990s saw a decrease of green advertising activity, which could be attributed to growing consumer confusion regarding claims and terminologies (Easterling et al., 1996; Leonidou et al., 2011).

Noting the trend of shifting emphasis from business to consumer buyers as a main target audience of green advertising (Leonidou et al., 2011), nowadays there is a growing importance of environmental concerns during purchase decision-making for consumers (Naderer et al., 2017), underlining the significance of the topic as scholarly interest. Moreover, on the practitioners' side, the challenge still remains on how to market products as environmentally preferable (Smith & Brower, 2012).

Content of Green Advertising Practices

Research indicates that green claims, in order to be effective and persuasive, should be specific and meaningful (Ottman et al., 2006; Smith & Brower, 2012). In order to present their products and services as sustainable, companies usually utilize the following tactics, identified by content analysis: 1) position them as promoting a green life, 2) address their connection to the biophysical environment or 3) advertise a corporate image of environmental responsibility (Banerjee et al., 1995).

To express these messages, a possible strategy is to present *fact-based functional appeals*, emphasizing the relevant beneficial features of the product or service, compared to

competitors (Hartmann et al., 2005). As opposed to that, *image-based emotional appeals* are also frequently used, where natural scenery is depicted to evoke positive responses due to the virtual association with real-world nature, aiding message elaboration and recall (Hartmann et al., 2013). These two routes can be combined into a *mixed-type promotional strategy*, where both functional and emotional appeals are present (Naderer et al., 2017).

Image-based emotional appeals usually convey the greenness through the use of nature imagery to draw an implicit visual association, enhancing the brand's ecological image (Parguel et al., 2015). Previous studies have demonstrated that images that aim to evoke nature are just as emotionally arousing as being in real nature, conceptualized as a virtual nature experience, and this response can trigger a more favourable attitude toward the advertised brand (Hartmann et al., 2013; Hartmann & Apaolaza-Ibáñez, 2009).

Besides dividing green advertising according to the type of appeals, another categorization exists in the literature, which focuses on the emphasized benefit, whether it is *consumer benefit* (such as saving costs, as opposed to competitor products) or providing *societal benefit* (such as lower greenhouse gas emissions) (Green & Peloza, 2014). When it comes to consumer decision-making, the context in which consumers experience these messages have an impact on their effectiveness: in public settings consumers favour other-benefit or societal benefit appeals, while in more private they are more responsive to messages highlighting the consumer benefit (Green & Peloza, 2014).

This finding ties into the argument that nowadays the primary goal of green advertising is to make the consumer feel good about themselves when they choose a green option, leading to increased emotional appeals and low level of factual green claims (Naderer et al., 2017; Segev et al., 2016). However, Smith & Brower (2012) argue that in an age where environmental information about companies and products is readily available on the Internet, green claims should do more than 'window-dressing'. Especially for the tech-savvy Millennial audience

who is seeking brands that make a positive effect on the environment, failing to demonstrate the proclaimed environmental friendliness can result in more harm to the brand than advantage (Nyilasy et al., 2014; Smith & Brower, 2012). Among others, proclaiming a green brand image without evidence can affect the brand's profitability, cause ethical harm and drive consumer mistrust toward the company (Chen et al., 2020; Szabo & Webster, 2020).

However, it is not just the Millennial generation who has grown distrustful toward green advertising practices as growing scepticism has been noted around the world, regarding the credibility of such messages (Chen et al., 2020; Leonidou et al., 2011). Regardless of gender, results indicate that environmental concern is positively linked to scepticism toward green claims conveyed by companies (Finisterra do Paço & Reis, 2012), which can result in low trust, suspicion and cynicism toward the brand (Nguyen et al., 2019).

Greenwashing

A reason behind this increasing scepticism could be that besides promoting sincere green claims, some companies use green marketing to exaggerate or even distort the environmental impact of their offerings, this practice is called greenwashing (Naderer et al., 2017). Greenwashing refers to spreading disinformation regarding the brand's products, services or image by outright lies or through vague statements and emotional cues to suggest environmental attributes (Carlson et al., 1996; Kangun et al., 1991; Naderer et al., 2017; Parguel et al., 2015). This misleading of consumers is considered a significant topic both on a societal and academic level, yet research gaps remain in the literature, one of which the current paper aims to address.

As green advertising has seen a decrease in 1990, as noted before, the concept of greenwashing was first established during this time to refer to claims which are trivial, misleading or deceptive in environmental marketing practices (Carlson et al., 1996; Kangun et

al., 1991). The four main factors behind the importance of greenwashing has been identified as: 1) the increased demand for environmentally friendly products, 2) the rising sales of green products, 3) the support of environmental objectives by government regulations and 4) no international (although European Union regulations exist) industry-wide law that would regulate green promotion (Naderer et al., 2017). As a combination of all these factors, disinformation through green advertising constitutes an important issue regarding today's advertising practices (Naderer et al., 2017), therefore the current study aims to extend the existing research on it.

Greenwashing Claims

At the core of the concept, there is a typology of four major type of greenwashing claims, established by Kangun and colleagues through their content analysis (1991): *false claims* are classified as those which present untrue information; *vague or ambiguous claims* refer to those broad and not clearly defined messages which are easy to misinterpret; *claims that omit important information* usually address a narrow set of attributes, while leaving out other aspects related to environmental concerns; and a *combination* of all three misleading elements have also been identified. Additional concepts such as unfounded claims, false labels, or irrelevant claims exist (TerraChoice, 2010 as cited in Naderer et al., 2017), however the current study focuses on the earlier classification, especially the false and vague claims, whose impact on attitudinal outcomes will be examined later.

Perceived greenwashing refers to the mistrust in green claims based on the individual's perception as they appear misleading in terms of visuals or language (Chen & Chang, 2013). The existing body of research shows that false claims could enhance this perceived greenwashing, depending on the consumer's knowledge about the environment, while vague or ambiguous claims are not always recognized as greenwashing by consumers (Naderer et al., 2017). Results indicate that this way false claims harm the attitudes of the consumers toward

ads and brands, as a consequence of perceived greenwashing (Matthes, 2019; Schmuck, Matthes, & Naderer, 2018), since consumers regard it as an attempt to deceive them (Olson & Dover, 1978) while vague claims do not.

Therefore, the first set of hypotheses focuses on these direct effects:

H1a: Greenwashing within influencer marketing through false claims has a direct negative effect on the audience's attitude toward the brand.

H1b: Greenwashing within influencer marketing through vague claims has a direct positive effect on the audience's attitude toward the brand.

Even though both claims can be deceptive to individuals who lack background information on the brand and their practices, false claims can still be verified on an objective basis, while vague claims (such as calling a product green or sustainable with no other explanation) are harder to identify (Boush et al., 2015). As results suggest, when a vague claim is supported by an image of nature, consumers have a hard time detecting it as greenwashing and it can even enhance attitudes toward the brand positively (Schmuck, Matthes, & Naderer, 2018), hence H1b was developed. However, these recent findings about the detection of vague claims are questioning the notion of a green consumer who tends to distrust green advertising (Matthes & Wonneberger, 2014; Schmuck et al., 2018).

Executional Greenwashing

The aforementioned example, using a combination of a vague claim with a nature image, constitutes its own dimension of disinformation spreading within green advertising, introduced by Parguel and colleagues (2015), called executional greenwashing. It refers to the presentation of nature-evoking elements in connection with a product that is not factually environmentally friendly, to enhance the positive perception of a company's environmental efforts without specifically referring to any product or service features (Naderer et al., 2017;

Parguel et al., 2015). During this practice, green buzzwords such as “natural” or “organic” create disinformation to evoke the feeling of a product being environmentally friendly (Naderer et al., 2017).

The existing body of research suggest that pairing a message with nature-evoking element does mislead consumers regarding the perception of a brand’s ecological image, through the aforementioned virtual nature experience (Hartmann et al., 2013; Hartmann & Apaolaza-Ibáñez, 2009), especially if they lack knowledge about environmental issues (Parguel et al., 2015).

Even though studies have looked into the effects of vague claims, false claims as well as the impact of executional greenwashing, the available body of is not yet conclusive, as Matthes argues (2019). Thus, this study aims to extend the literature on the first two type of claims, examining them in a context that has received no scholarly attention so far.

Influencer Marketing

Following the suggestions to expand the research of green advertising to different media outlets, such as online (Matthes, 2019; Segev et al., 2016), the current study combines the significant issue of greenwashing with another popular type of marketing strategy: influencer marketing.

Influencers on social media platforms, such as Instagram and Facebook are defined as opinion leaders, communicating toward a mass audience (Breves et al., 2019). When they disseminate messages about brands or products to inform, entertain or persuade other users (Knoll, 2016), they are undertaking influencer marketing. Influencer marketing can be described as a type of native advertising because the commercial content is usually woven seamlessly into the organic, daily narratives of the influencers (De Veirman et al., 2017).

Having received heightened scholarly attention in this decade, studies suggest that consumers perceive social media influencers as more credible and authentic than celebrity endorsers (Djafarova & Rushworth, 2017). One explanation behind this finding could be that people are able to relate more to these social media influencers than traditional celebrities (Djafarova & Rushworth, 2017), since the persuasion is not as straightforward. Rather, these posts have an illusion of intimacy around them, like a sister or close friend chatting with the audience about products they enjoy, without an obvious commercial intent.

However, the number of followers have an impact on how influencers are perceived: it has a positive effect on likability through perceived popularity and opinion leadership but a proportionally very high or proportionally very low follower number can reduce these qualities (Breves et al., 2019).

Influencer Credibility

Nevertheless, follower numbers are not the only thing that might influence how they are perceived by the audience and thus how successful their communication efforts are. The Source Credibility Model suggests that the perceived credibility of the endorser has an effect on the effectiveness of a message (Mishra et al., 2015). The credibility of the endorser is composed of the qualities of *trustworthiness*, *expertise* and *attractiveness* (Ohanian, 1990, 1991). Trustworthiness refers to the perceived honesty and believability of the endorser, whereas the level of expertise is concerned with the extent to which the endorser is believed to be a valid source for information (Erdogan, 1999; Ohanian, 1990). Those that are perceived to be highly credible, like some influencers are, are supposed to impact consumer attitudes and behaviour positively, making them desirable brand communicators (Erdogan, 1999; Mishra et al., 2015).

Therefore, influencer credibility is taken as a potential mediator in the current theoretical model, leaving out the attractiveness quality, while looking at the relationship

between the two different types of greenwashing and the attitude toward the brand, as it is hypothesized that:

H2a: Greenwashing within influencer marketing through false claims has a negative effect on perceived influencer credibility, which mediates a negative indirect effect on the attitude toward the brand.

H2b: Greenwashing within influencer marketing through vague claims has a positive effect on perceived influencer credibility, which mediates a positive indirect effect on the attitude toward the brand.

Influencer-Brand Congruence

However, in order for the influencer's communication to be effective, they need to suit the endorsed brand (De Veirman et al., 2017). In other words, an attribute of the endorser needs to match an attribute of the product or brand (Lee & Thorson, 2008). This type of association, termed congruence refers to the fit between a brand and in this case, the influencer, who endorses the brand (Fleck-Dousteyssier & Quester, 2007), meaning the relevant characteristics of the spokesperson are in line with that of the brand (Misra & Beatty, 1990). Research indicates that in the case of celebrity endorsements, the fit between the celebrity and the brand facilitated the possible image transfer from the celebrity to the brand (Mishra et al., 2015), therefore it is likely to be important to study the influencer-brand congruence when it comes to the effects of greenwashing claims on attitudes toward the brand. Especially since this type of advertising is often perceived as regular communication without obvious persuasive intent (Evans et al., 2017).

Brand managers must face the challenge of finding the best suited influencer for their company in order to achieve high effectiveness with their marketing messages, De Veirman and his colleagues note (2017). An improper pairing could have negative consequences,

harming the associated brand, rather than enhancing its positive image (Campbell & Warren, 2012). If consumers notice a mismatch between the influencer and the brand, they might perceive the influencer as less credible, recognizing the persuasive intent, which can result in a less favourable brand attitude (Breves et al., 2019).

In the case of green advertising and influencer marketing, the relevant characteristics are the perceived greenness or environmental friendliness of the influencer and that of the brand. Given the important role of influencer-brand congruence when it comes to the perception of the influencer, it is also assumed that it influences the perceived credibility of the influencer and the attitude toward the brand in response to greenwashing claims. However, since this moderated mediation has not been examined in the existing body of literature, a research question is formulated instead of hypotheses:

RQ1: How does the influencer-brand congruence moderate the effects of greenwashing claims on the perceived credibility of the influencer?

Environmental Involvement

When it comes to the aforementioned effects of greenwashing claims, literature has identified another important factor that might have an effect on the perception of greenwashing: environmental involvement (Naderer et al., 2017). Involvement defined as the degree to which an individual perceives something as personally relevant (Petty, Cacioppo, 1986 as cited in Naderer et al., 2017), environmental involvement is made up of different concepts, based on the existing body of literature: *environmental concern*, which is connected to the individual being aware of the environmental problems and perceiving it necessary to protect the environment (Finisterra do Paço & Reis, 2012), *environmental knowledge*, which means the objective expertise about environmental issues (Parguel et al., 2015; Schmuck, Matthes, &

Naderer, 2018), *positive attitude* about green products (Naderer et al., 2017) and self-reported *green purchase behaviour* (Shrum et al., 1995).

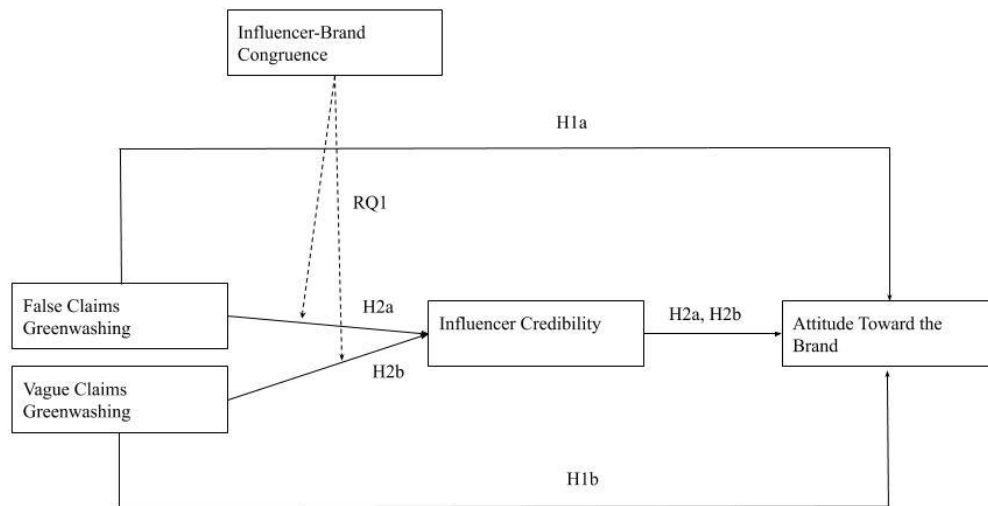
The findings regarding highly environmentally involved consumers are somewhat contradicting. Even though some studies suggest that they are particularly sceptical when it comes to green advertising (Finisterra do Paço & Reis, 2012; Shrum et al., 1995), they still cannot clearly detect vague claims as greenwashing (Matthes & Wonneberger, 2014). One explanation for that could be that because of the emotion-laden nature of green advertising, emotional cues (such as vague greenwashing, usually paired with nature-evoking imagery) might be particularly persuasive for them due to their high involvement (Naderer et al., 2017).

The current paper takes environmental concern, positive attitude about green products and green purchase behaviour as control variables of the moderated mediation model.

Despite the reviewed body of research on greenwashing and the available literature on green advertising and its impact, there is a lack of research on the individuals' perceptions of greenwashing and the attitudinal outcomes of it (Matthes, 2019), especially when it comes to social media platforms and green influencers within influencer marketing. Therefore, the current study focuses on extending the previous research by looking into the effects of greenwashing claims on influencer credibility and brand attitude, possibly moderated by the influencer-brand congruence to provide important implications for both scholars and practitioners. The full theoretical model depicting all hypotheses and the moderated mediation is presented in Figure 1.

Figure 1.

Theoretical model of the proposed greenwashing effects. Control variables were included during analysis but omitted from this figure for the sake of clarity.



Methodology

To test the proposed hypotheses and seek answers to the developed research questions, a 3 (greenwashing messages: false claims versus vague claims and a neutral claim as the control condition) x 2 (influencer: green versus non-green) between-subjects design was developed. Within the survey experiment, respondents were randomly assigned to one of the six conditions: either seeing a control message (a nondeceptive claim) coming from a green or non-green influencer, a false claim coming from a green influencer, a false claim coming from a non-green influencer, a vague claim coming from a green influencer, or a vague claim coming from a non-green influencer.

To gather respondents for the survey experiment, the paper relied on the SoSci Research Panel, conducting the research in German and collecting the data from 29 June 2020 until 12 July after the study was approved (N = 300). It is acknowledged that the resulting sample might be skewed in terms of political views, age or education but as these are not focal points of the

study, only control variables, therefore employing SoSci's Research Panel was chosen instead of relying on convenience sampling through online channels.

To determine the sample size which is required to detect an effect of a given size, the *pwr* R package by Stéphane Champely was used for power analysis. For 6 experimental groups, at .25 moderate effect size, with a significance level of .05 to achieve a power of .8, 35 respondents per group was needed so 210 respondents altogether. The received respondent number, $N=300$ is above this number. These calculations were made before the beginning of the data collection and submitted together with the proposal for the Research Panel.

Stimulus

During the questionnaire, respondents were presented first with an Instagram profile of an influencer, then with two sponsored Instagram posts made by that influencer. The stimulus profiles and posts can be found in Appendix A. They were developed after researching green and non-green global influencers and reworked based on the SoSci Panel review. As opposed to using real influencers, made-up influencers were chosen for this particular study, to avoid confounding the results with previous knowledge, especially when it comes to manipulating the influencer as green or non-green. For the green influencer conditions, user @sophia appeared as someone who likes nature, looks at sustainable alternatives (such as the pictured vegetable net) and shares her eco-consciousness on her Instagram. For the non-green influencer conditions, @sophia appeared as someone who likes shopping and she is not bothered by excessive plastic packaging or wasteful number of products, as pictured in Appendix A. The numbers linked to the profiles (posts, followers and following) were kept constant as in not to confound the results through perceived popularity.

For the influencer post itself, bottled water packaged in plastic was selected, based on Schmuck, Matthes, and Naderer's studies (2018) as it is a low involvement product, which is

not inherently green. Respondents randomly assigned to the control condition viewed a water bottle of a fictitious brand (“AQUID”) in front of a simple background, along with Sophia’s post’s text saying, “Fresh mineral water from AQUID – my new favourite!”. On the other hand, participants assigned to the false claim condition (no matter if Sophia is presented as a green or non-green content creator) will see her message as “Fresh mineral water from AQUID – the most environmentally friendly way to drink water. My new favourite!”. The exaggerated greenwashing claim was inspired by Schmuck, Matthes, and Naderer's similar studies (2018) and Fiji Water’s marketing messages (“Earth’s finest water”).

By contrast, respondents assigned to both vague claim conditions (one with a green influencer and one with a non-green influencer) will be presented with a vague claim about the bottled water: “Fresh mineral water from AQUID – do good for the environment. My new favourite!”, also based on Schmuck, Matthes, and Naderer's similar studies (2018) and Fiji Water’s marketing messages (“Every drop is green”).

To enhance the generalizability of the findings, another product was included in the stimulus as well – a laundry detergent from the fictitious brand “LAUNDY”. The control, false greenwashing and vague greenwashing claims were developed along the same lines as for the water bottle (“Powerful cleaning with Laundry – my new favourite!”, “Powerful cleaning with Laundry – gentler on the environment than water. My new favourite!”, “Powerful cleaning with Laundry – for the sake of the environment. My new favourite!”).

Pretest of Stimulus Material

The stimulus material was pretested using online convenience sampling (N=40). The respondents were asked to evaluate first the influencer profiles, rating the green or non-green influencer on items such as “Sophia cares about the environment”, or “Sophia is wasteful” on a 5-point Likert scale (1= strongly disagree, 5= strongly agree). After conducting a t test, it was

revealed that the respondents rated the green influencer profile higher on caring for the environment ($M = 3.61$, $SD = 1.14$, $p < .001$) than the non-green influencer version ($M = 2.05$, $SD = .85$, $p < .001$). Similarly, the green influencer profile was perceived more as eco-conscious ($M = 3.5$, $SD = 1.21$, $p < .01$) than the non-green profile ($M = 2.16$, $SD = .89$, $p < .01$). On the other hand, the non-green influencer profile was seen as more wasteful ($M = 3.8$, $SD = 1.01$, $p < .01$) than the green influencer profile ($M = 2.44$, $SD = 1.32$, $p < .01$). During the pre-test, the intended green profile was rated higher on being a green influencer ($M = 3.47$, $SD = 1.32$, $p < .01$) than the non-green influencer profile ($M = 2.15$, $SD = .93$, $p < .01$). Other factors were also tested in connection with the profiles to make sure the manipulation did not alter any other characteristic that might confound the results: the difference between the two influencer profiles being rated pretty was minimal ($M = 4.00$, $SD = .935$ for the green profile and $M = 3.74$, $SD = .806$ for the non-green one), along with them being perceived as rich ($M = 3.65$, $SD = 1.15$ for the green one and $M = 3.74$, $SD = 1.14$ for the non-green one).

The Instagram sponsored posts were also rated by the respondents, on statements such as containing vague and not verifiable information and containing information that is factually wrong on a 5-point Likert scale (1= strongly disagree, 5= strongly agree) , based on Schmuck, Matthes, & Naderer (2018). Conducting a t test revealed that respondents saw the vague greenwashing ad as containing statements that generally indicate environmental friendliness without details ($M = 4.46$, $SD = .967$) more than the false greenwashing ad ($M = 3.73$, $SD = 1.67$). Moreover, the false greenwashing ads were rated higher for containing statements that present incorrect information ($M = 3.78$, $SD = 1.39$) than the vague ads ($M = 3.09$, $SD = 1.3$). In addition, the false greenwashing ads were seen as containing factually wrong statements to a higher degree ($M = 3.75$, $SD = 1.16$) than the vague greenwashing ads ($M = 3.36$, $SD = .67$). To ensure that the control condition does not contain any greenwashing elements, it was also tested against the false greenwashing advertisements in a t test, which supported that intention.

For factually wrong statements the control condition was rated much lower ($M = 2.8$, $SD = .789$) than the false greenwashing condition ($M = 3.75$, $SD = 1.16$). Similarly, the false green ad was rated higher for containing statements that indicate environmental friendliness without details ($M = 3.73$, $SD = 1.67$) as opposed to the control condition ($M = 2.72$, $SD = 1.19$). Therefore, the stimuli were deemed fit for the current study.

Measures

Measures connected to the variables were tested on 5-point Likert scales (1= strongly disagree to 5 = strongly agree) after the pre-test deemed the stimulus suitable for the current study (see Appendix B). The latent, potentially mediating influencer credibility variable was measured through the 10-item semantic differential scale established by Ohanian (1990), clustered around the qualities of trustworthiness and expertise. For measuring attitude toward the brand, the study relied on 4 items used by Schmuck, Matthes, and Naderer (2018), based on previously established scales (Chang, 2011; Matthes & Wonneberger, 2014; Schmuck et al., 2018). 3 items were employed to gauge the perceived influencer-brand congruence (Breves et al., 2019; Mishra et al., 2015; Till & Busler, 2000) and its possible moderating influence. To measure purchase intention, here analysed as a control, 3 items were included based on Mishra et al. (2015) and Ohanian (1991). To assess perceived greenwashing as another control variable, items were taken and adapted from Schmuck, Matthes, & Naderer's recent study (2018). Environmental involvement, here divided as environmental concern, positive attitude about green products and green purchase behaviour was measured through items based on Schmuck, Matthes, and Naderer (2018), Roberts (1996), Chang (2011) and Parguel et al. (2011).

A treatment check was also included after measuring the variables, asking the respondents whether the Instagram posts they have seen were similar to the ones they usually see on their Instagram feed and whether they would perceive Sophia as a green influencer or not.

Data Analysis

During data collection, participants were equally distributed among the six conditions (16.5% green control condition, 16.5% non-green control condition, 16.5% green false claim greenwashing, 16.9% non-green false claim greenwashing, 16.9% green vague claim greenwashing, 16.5% non-green vague claim greenwashing). After cleaning up the data and recoding the reversed variables, 235 interviews were deemed qualified for being analysed (meaning N=235 received the stimulus and completed the full survey).

For data analysis, version 25 of the IBM SPSS Statistics software and IBM AMOS 25 were used. First, to assess the measurement model containing latent variables, confirmatory factor analysis (CFA) was carried out. To make up for the missing data, data imputation through regression imputation was employed in AMOS to allow for calculating fit indices and SRMR. The CFA revealed mediocre fit but this can be attributed to the small sample size which is barely above the required 200 since χ^2 , RMSEA and SRMR can depend on the sample size (N=235), ($\chi^2 = 583.906$, $df = 183$, RMSEA= .097, CFI = .872, SRMR = .062). The Chi-square/df indicated a somewhat permissible fit as it was 3.1 for the model. However, when items with factor loadings below 0.7 for influencer credibility were dropped, the model fit improved, along with Cronbach's alphas, composite reliability and the Average Variance Extracted score. Running the analysis with the reduced influencer credibility scale revealed a better model fit ($\chi^2 = 372.673$, $df = 98$, RMSEA= .109, CFI = .904, SRMR = .059). Construct validity and reliability could be established through the satisfactory Cronbach's alpha coefficients, factor loadings, composite reliabilities and average variance extracted values. Table 1 provides an overview of the accepted measurement scales, along with construct validity and reliability scores (α : Cronbach's alpha, CR: Composite Reliability, AVE: Average Variance Extracted, *** $p < 0.001$).

Table 1.

Measuring the latent constructs of influencer credibility, influencer-brand congruence and attitude toward the brand

	Standardized loading (λ)
Influencer Credibility ($\alpha = .893$, CR = .936, AVE = .627)	
I think Sophia is dependable.	.717***
I think Sophia is honest.	.813***
I think Sophia is qualified.	.731***
I think Sophia is sincere.	.814***
I think Sophia is trustworthy.	.874***
Attitude toward the brand – AQUID ($\alpha = .847$, CR = .944, AVE = .714)	
I think the brand AQUID is good.	.946***
My opinion on the brand AQUID is positive.	.941***
I find the brand AQUID likeable.	.623***
I find the brand AQUID recommendable.	.831***
Attitude toward the brand – LAUNDY ($\alpha = .826$, CR = .941, AVE = .706)	
I think the brand LAUNDY is good.	.929***
My opinion on the brand LAUNDY is positive.	.977***
I find the brand LAUNDY likeable.	.613***
I find the brand LAUNDY recommendable.	.795***
Influencer-Brand Congruence ($\alpha = .753$, CR = .865, AVE = .582)	
As an endorser, I think Sophia is appropriate.	.615***
As an endorser, I think Sophia matches the brands.	.989***
I think the combination of Sophia and the brands fit together.	.626***

Before proceeding with the analysis of the structural model, the manipulation check questions were reviewed – namely if the respondents viewed the stimulus as similar to the posts they usually see on Instagram and if they considered Sophia to be a green influencer or not. Participants' responses indicate that the pictures were not that similar to what they usually see on Instagram ($M = 2.06$, $SD = 1.237$) but that could be due to them not following green or lifestyle influencers. Also, 41% of the respondents indicated that they could not judge if Sophia was a green influencer or not, despite the stimulus passing the pre-test where the same question was asked. Therefore, it is acknowledged that future studies need to test different influencer and Instagram post stimuli to get better results.

Next, path analyses were conducted in AMOS, after dummy-coding the experimental conditions in SPSS. To allow for estimating the moderated mediation models, the interaction terms for moderation were computed in SPSS. All interaction terms and experimental conditions were entered into analysis simultaneously, while perceived greenwashing and green purchase behaviour were included as covariates. To test for moderated mediation equivalent to the Hayes PROCESS model 7, simple slopes for the dependent variables on the mediator at low, medium and high levels of the moderator, along with conditional indirect effects at different levels of the moderator and the index of moderated mediation were calculated, using user-defined estimands and bootstrapping with 90% confidence intervals.

Results

Table 2 displays the results of estimating the structural model and testing the hypotheses. The fit indices indicated a good fit: $\chi^2 = 118.528$, $df = 108$, $\chi^2/df = 1.1$, $RMSEA = .020$, $CFI = .997$, $p > .05$, $SRMR = .032$.

Table 2.

Results of the path analyses of direct effects using maximum likelihood estimation

Variables	Influencer		Attitude	
	Credibility		Toward the Brand	
	<i>b</i>	SE	<i>b</i>	SE
False Claim Greenwashing from Green Influencer	-.002	.366	.224***	.148
False Claim Greenwashing from Non-Green Influencer	-.194	.360	.130*	.135
Vague Claim Greenwashing from Green Influencer	.176	.325	.140*	.137
Vague Claim Greenwashing from Non-Green Influencer	-.042	.350	.059	.136
Influencer-Brand Congruence (IBC)	.246*	.064	-	-
False Claim Green Influencer x IBC	.043	.118	-	-
False Claim Non-Green Influencer x IBC	.125	.118	-	-
Vague Claim Green Influencer x IBC	-.025	.104	-	-
Vague Claim Non-Green Influencer x IBC	-.032	.119	-	-
Perceived Greenwashing	-.351**	.072	-.594***	.079
Green Purchase Behaviour	-.071	.073	-.051	.079
R ²	.296		.429	

Notes. *** $p < .001$; ** $p < .01$; * $p < .05$.

Hypothesis 1a assumed that false claims have a direct negative effect on the audience's attitude toward the brand, however the results of the study did not support that as the effects were positive both in the case of green influencers ($b = .224, p < .001$) and non-green influencers ($b = .130, p < .05$). Hypothesis 1b assumed that vague claims have a direct positive effect on the audience's attitude toward the brand, which was only true when the vague claim came from a green influencer ($b = .140, p < .05$), therefore it was only partially supported.

Concerned with the mediation part of the model, Hypothesis 2a assumed that false claims have a negative effect on influencer credibility, which mediates a negative indirect effect on the audience's attitude toward the brand, while Hypothesis 2b assumed that vague claims have a positive effect on influencer credibility, which mediates a positive indirect effect on attitude. After running bootstrapping with 2000 samples and 90% Confidence Intervals, the analysis revealed that none of the experimental conditions have a significant indirect effect on attitude (false claim from green influencer: $b = .000$, LLCI = $-.065$, ULCI = $.059$; false claim from non-green influencer: $b = -.034$, LLCI = $-.102$, ULCI = $.029$; vague claim from green influencer: $b = .031$, LLCI = $-.022$, ULCI = $.099$; vague claim from non-green influencer: $b = -.007$, LLCI = $-.070$, ULCI = $.050$). Since 0 falls between the lower and upper bounds, it means that the H_0 is retained, the indirect effects are not statistically significant, therefore H2a and H2b weren't supported in the current study.

Regarding RQ1 which was concerned about the possibility of influencer-brand congruence moderating the effects of greenwashing claims on the perceived credibility of the influencer, simple slopes on the mediator for low, medium and high levels of the moderator were calculated. After requesting the mean and standard deviation in SPSS, the analysis was run using user-defined estimands. Table 3 in Appendix C displays the results. Since 0 falls in most cases between the lower and upper bounds, moreover the index of moderated mediation was found not significant in any conditions, in the current study there is no evidence found that

influencer-brand congruence moderates the effects of greenwashing claims on influencer credibility. Table 4 presents an overview of all hypotheses and the results found during the analysis.

Table 4.

Overview of the hypotheses and findings

H1a	Greenwashing within influencer marketing through false claims has a direct negative effect on the audience's attitude toward the brand.	Rejected
H1b	Greenwashing within influencer marketing through vague claims has a direct positive effect on the audience's attitude toward the brand.	Partially supported
H2a	Greenwashing within influencer marketing through false claims has a negative effect on perceived influencer credibility, which mediates a negative indirect effect on the attitude toward the brand.	Rejected
H2b	Greenwashing within influencer marketing through vague claims has a positive effect on perceived influencer credibility, which mediates a positive indirect effect on the attitude toward the brand.	Rejected
RQ1	How does the influencer-brand congruence moderate the effects of greenwashing claims on the perceived credibility of the influencer?	No evidence found

Additional Analyses

As including the measure of perceived greenwashing as a control variable in the theoretical model yielded significant results, additional analyses were considered, outside of the hypothesized model.

Perceived greenwashing was tested as the mediator variable, taking the different types of greenwashing as the independent variables and influencer credibility as the dependent

variable. This new model achieved a much better model fit ($\chi^2 = 41.575$, $df = 25$, $RMSEA = .053$, $CFI = .980$, $SRMR = .032$) with the current data. Moreover, all experimental conditions were found statistically significantly impacting perceived greenwashing: a false claim coming from a green influencer ($b = .445$, $p < .001$), a false claim coming from a non-green influencer ($b = .202$, $p < .01$), a vague claim coming from a green influencer ($b = .222$, $p < .001$) and a vague claim coming from a non-green influencer ($b = .204$, $p < .01$) all increased the respondent's perceived greenwashing. Unsurprisingly, perceived greenwashing significantly decreased influencer credibility ($b = -.459$, $p < .001$). Regarding indirect effects, a mediation test was carried out in AMOS using bootstrapping with 2000 samples and 90% confidence intervals. It confirmed that a false claim from a green influencer ($b = -.204$, $LLCI = -.275$, $ULCI = -.139$) and a non-green influencer ($b = -.093$, $LLCI = -.152$, $ULCI = -.038$), a vague claim from a green influencer ($b = -.102$, $LLCI = -.165$, $ULCI = -.041$) and a non-green influencer ($b = -.094$, $LLCI = -.147$, $ULCI = -.046$) all have a negative indirect effect on influencer credibility via perceived greenwashing.

Next, building on Schmuck, Matthes, and Naderer (2018), perceived greenwashing was taken as the possible mediator, between different types of greenwashing and attitude toward the brand. This achieved the best model fit out of the three tested models with the collected data: $\chi^2 = 16.595$, $df = 17$, $RMSEA = .000$, $CFI = 1.0$, $SRMR = .022$. Besides all combinations of greenwashing claims having an effect on perceived greenwashing, perceived greenwashing showed a significant negative effect on attitude toward the brand ($b = -.685$, $p < .001$). To test for mediation, again bootstrapping was used with 2000 samples and 90% confidence intervals. It revealed that a false claim from a green influencer ($b = -.305$, $LLCI = -.402$, $ULCI = -.227$), a false claim from a non-green influencer ($b = -.139$, $LLCI = -.235$, $ULCI = -.055$), a vague claim coming from a green influencer ($b = -.152$, $LLCI = -.249$, $ULCI = -.062$) and a vague claim coming from a non-green influencer ($b = -.140$, $LLCI = -.213$, $ULCI = -.072$) all

negatively influence respondents' attitudes toward the brands, mediated by their perceived greenwashing.

Discussion

The findings of the study are striking, given the previously reviewed literature. The results show that instead of the hypothesized direct negative effect of false greenwashing claims on attitude toward the brand, it is possible that they have a positive influence on the respondent's attitude. Even more so than vague greenwashing claims, regardless if the greenwashing messages come from an influencer with a green image or a non-green image. On the other hand, vague greenwashing claims only impact the attitude toward the brand favourably when they come from an influencer who is perceived to be green. These findings contradict the existing body of research which suggests that false claims harm the attitudes of consumers toward brands (Matthes, 2019; Schmuck, Matthes, & Naderer, 2018). However, the additional analyses revealed that both types of greenwashing claims, regardless if communicated by a green or non-green influencer, negatively influence the consumer's attitude toward the brands, mediated by their perception of greenwashing. This finding is in line with the previously discussed body of research.

Despite influencer credibility being hypothesized as mediating the effects of greenwashing claims on consumer attitude, the current study did not find any evidence to support that. Even though the Source Credibility Model suggested that the perceived credibility of the endorser (in this case, the influencer) has an impact on the effectiveness of the message (Mishra et al., 2015), this study was unable to demonstrate that as no indirect effects were found significant. However, perceived greenwashing was found decreasing influencer credibility, which implies that marketers and influencers themselves should be aware that if consumers regard a seemingly green message as an attempt of deception, it can harm not only the brand but the endorsers themselves as well. Moreover, the current study demonstrated a negative

effect of all types of greenwashing and influencer combinations on attitudes toward the brand, mediated by the perception of greenwashing. In contrast to earlier findings by Schmuck, Matthes, and Naderer (2018), all greenwashing claims tested during the additional analyses induced perceived greenwashing with false claims coming from a green influencer doing so to the strongest degree among them.

Regarding the importance of influencer-brand congruence when examining greenwashing claims coming from influencers, the current study was unable to support that. However, influencer-brand congruence was found impacting influencer credibility in a statistically significant positive way, meaning it is possible that the more the influencer and the particular brand matches, the more credible the influencer can appear to be. Future research can explore this direction within green advertising more in detail, investigating perhaps more extreme examples of influencer-brand congruence and incongruence.

Limitations

Despite the importance of the findings as a first attempt examining the relationship between greenwashing and influencer marketing, the current study carries certain limitations. First, product categories displayed in the stimulus were all low-involvement products, as noted by Schmuck, Matthes, and Naderer (2018) as well in their studies. Further work is required to investigate whether greenwashing high-involvement products yields similar results or not, especially through influencer marketing. In addition, the current research relied on a relatively small sample from an online panel, limiting the validity and generalizability of the findings. To counter that, future studies on the current topic with quote-based, larger samples are therefore recommended.

Furthermore, as the manipulation check revealed weak results, the stimulus could be improved in future investigations, using pictures which resemble influencer's Instagram posts and messaging style more closely.

Regardless of its limitations, the current thesis provided an important first insight into the effects of greenwashing in connection with influencer marketing and attitudinal outcomes.

Theoretical and Practical Implications

Despite the acknowledged limitations, the paper poses important implications, both for the theoretical and practical side. Building on the existing body of research for greenwashing, the theoretical model considers influencer marketing-related factors for the first time. Even though the hypothesized effects, mediation and moderation did not hold true with the current sample, the findings can serve as bases for future research. The study has raised important questions about whether different type of greenwashing claims coming from either congruent or incongruent endorsers have differing effects, suggesting that the impact of false or vague claims might not be so distinct within influencer marketing. Future studies could improve this theoretical model by taking additional mediators and moderators into consideration, also looking at purchase intention as a dependent variable.

Furthermore, the results have significant implications for practitioners, especially as influencer marketing is gaining momentum as an advertising technique. The findings indicate that advertisers and marketers should be careful when engaging in greenwashing, as consumers recognize both false and vague claims as attempts at deception when they come from an influencer. This might not only harm their brands but the influencers themselves as well, since their credibility could decrease. On the other hand, vague claims might not do as much damage but generally all greenwashing should be avoided. Marketing products as environmentally preferable is best done with specific and meaningful messages if they wish to appeal to

environmentally conscious consumers. If they choose to do it through influencer marketing, the findings suggest that higher influencer-brand congruency grants higher credibility to the endorser, therefore brand ambassadors should be chosen with care.

Despite its exploratory nature, this study offers an important first insight into greenwashing claims within influencer marketing, the findings posing valuable implications both for the academic field and for advertising professionals.

References

- Banerjee, S., Gulas, C. S., & Iyer, E. (1995). Shades of Green: A Multidimensional Analysis of Environmental Advertising. *Journal of Advertising*, 24(2), 21–31.
<https://doi.org/10.1080/00913367.1995.10673473>
- Boush, D., Madrigal, R., & Xie, G.-X. (2015). Disentangling the Effects of Perceived Deception and Anticipated Harm on Consumer Responses to Deceptive Advertising. *Journal of Business Ethics*, 129(2), 281–293.
- Breves, P., Liebers, N., Abt, M., & Kunze, A. (2019). The Perceived Fit between Instagram Influencers and the Endorsed Brand: How Influencer–Brand Fit Affects Source Credibility and Persuasive Effectiveness. *Journal of Advertising Research*, JAR-2019.
<https://doi.org/10.2501/JAR-2019-030>
- Campbell, M. C., & Warren, C. (2012). A risk of meaning transfer: Are negative associations more likely to transfer than positive associations? *Social Influence*, 7(3), 172–192.
<https://doi.org/10.1080/15534510.2012.663740>
- Carlson, L., Grove, S. J., Kangun, N., & Polonsky, M. J. (1996). An International Comparison of Environmental Advertising: Substantive versus Associative Claims. *Journal of Macromarketing*, 16(2), 57–68. <https://doi.org/10.1177/027614679601600205>
- Chang, C. (2011). Feeling Ambivalent About Going Green. *Journal of Advertising*, 40(4), 19–32. <https://doi.org/10.2753/JOA0091-3367400402>
- Chen, Y.-S., & Chang, C.-H. (2013). Greenwash and Green Trust: The Mediation Effects of Green Consumer Confusion and Green Perceived Risk. *Journal of Business Ethics*, 114(3), 489–500. JSTOR.
- Chen, Y.-S., Huang, A.-F., Wang, T.-Y., & Chen, Y.-R. (2020). Greenwash and green purchase behaviour: The mediation of green brand image and green brand loyalty.

Total Quality Management & Business Excellence, 31(1–2), 194–209.

<https://doi.org/10.1080/14783363.2018.1426450>

De Veirman, M., Cauberghe, V., & Hudders, L. (2017). Marketing through Instagram influencers: The impact of number of followers and product divergence on brand attitude. *International Journal of Advertising*, 36(5), 798–828.

<https://doi.org/10.1080/02650487.2017.1348035>

Djafarova, E., & Rushworth, C. (2017). Exploring the credibility of online celebrities' Instagram profiles in influencing the purchase decisions of young female users. *Computers in Human Behavior*, 68, 1–7. <https://doi.org/10.1016/j.chb.2016.11.009>

Easterling, D., Kenworthy, A., & Nemzoff, R. (1996). The Greening of Advertising: A Twenty-Five Year Look at Environmental Advertising. *Journal of Marketing Theory and Practice*, 4(1), 20–34. JSTOR.

Erdogan, B. Z. (1999). Celebrity Endorsement: A Literature Review. *Journal of Marketing Management*, 15(4), 291–314. <https://doi.org/10.1362/026725799784870379>

Evans, N. J., Phua, J., Lim, J., & Jun, H. (2017). Disclosing Instagram Influencer Advertising: The Effects of Disclosure Language on Advertising Recognition, Attitudes, and Behavioral Intent. *Journal of Interactive Advertising*, 17(2), 138–149.

<https://doi.org/10.1080/15252019.2017.1366885>

Finisterra do Paço, A. M., & Reis, R. (2012). Factors Affecting Skepticism toward Green Advertising. *Journal of Advertising*, 41(4), 147–155.

<https://doi.org/10.1080/00913367.2012.10672463>

Fleck-Dousteyssier, N., & Quester, P. (2007). Birds of a feather flock together... Definition, role and measure of congruence: An application to sponsorship. *Psychology and Marketing*, 24, 975–1000. <https://doi.org/10.1002/mar.20192>

- Green, T., & Peloza, J. (2014). Finding the Right Shade of Green: The Effect of Advertising Appeal Type on Environmentally Friendly Consumption. *Journal of Advertising*, 43(2), 128–141. <https://doi.org/10.1080/00913367.2013.834805>
- Hartmann, P., Apaolaza, V., & Alija, P. (2013). Nature imagery in advertising. *International Journal of Advertising*, 32(2), 183–210. <https://doi.org/10.2501/IJA-32-2-183-210>
- Hartmann, P., Apaolaza, V., & Sainz, F. (2005). Green branding effects on attitude: Functional versus emotional positioning strategies. *Marketing Intelligence & Planning*, 23, 9–29. <https://doi.org/10.1108/02634500510577447>
- Hartmann, P., & Apaolaza-Ibañez, V. (2009). Green advertising revisited. *International Journal of Advertising*, 28(4), 715–739. <https://doi.org/10.2501/S0265048709200837>
- Kangun, N., Carlson, L., & Grove, S. J. (1991). Environmental Advertising Claims: A Preliminary Investigation. *Journal of Public Policy & Marketing*, 10(2), 47–58. JSTOR.
- Knoll, J. (2016). Advertising in social media: A review of empirical evidence. *International Journal of Advertising*, 35, 266–300. <https://doi.org/10.1080/02650487.2015.1021898>
- Lee, J.-G., & Thorson, E. (2008). The Impact of Celebrity–Product Incongruence on the Effectiveness of Product Endorsement. *Journal of Advertising Research - JAR*, 48. <https://doi.org/10.2501/S0021849908080446>
- Leonidou, L., Leonidou, C., Paliawadana, D., & Hultman, M. (2011). Evaluating the green advertising practices of international firms: A trend analysis. *International Marketing Review - INT MARK REV*, 28, 6–33. <https://doi.org/10.1108/02651331111107080>
- Matthes, J. (2019). Uncharted Territory in Research on Environmental Advertising: Toward an Organizing Framework. *Journal of Advertising*, 48(1), 91–101. <https://doi.org/10.1080/00913367.2019.1579687>

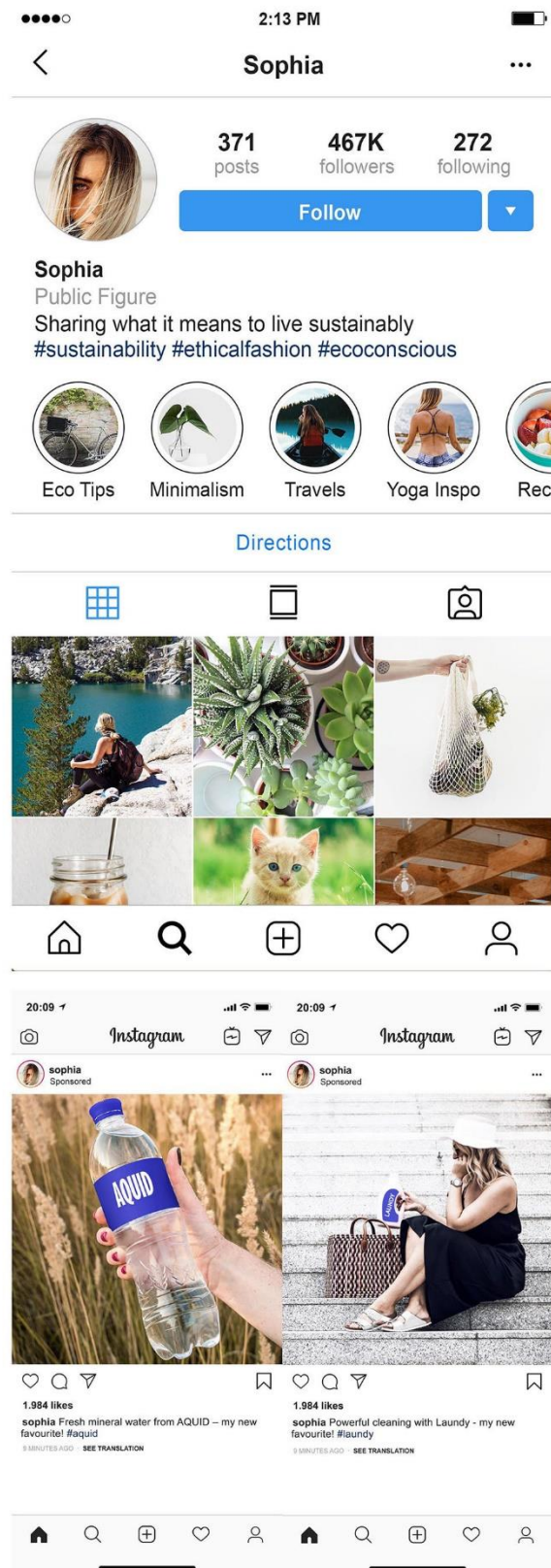
- Matthes, J., & Wonneberger, A. (2014). The Skeptical Green Consumer Revisited: Testing the Relationship Between Green Consumerism and Skepticism Toward Advertising. *Journal of Advertising*, 43(2), 115–127.
<https://doi.org/10.1080/00913367.2013.834804>
- Mishra, A. S., Roy, S., & Bailey, A. A. (2015). Exploring Brand Personality–Celebrity Endorser Personality Congruence in Celebrity Endorsements in the Indian Context. *Psychology & Marketing*, 32(12), 1158–1174. <https://doi.org/10.1002/mar.20846>
- Misra, S., & Beatty, S. (1990). Celebrity spokesperson and brand congruence. An assessment of recall and affect. *Journal of Business Research*, 21, 159–173.
[https://doi.org/10.1016/0148-2963\(90\)90050-N](https://doi.org/10.1016/0148-2963(90)90050-N)
- Naderer, B., Schmuck, D., & Matthes, J. (2017). Greenwashing: Disinformation through green advertising. In *Commercial communication in the digital age – Information or disinformation?* (pp. 105–120). De Gruyter Mouton.
- Nguyen, T., Yang, Z., Nguyen, T. N., Johnson, L., & Cao, T. (2019). Greenwash and Green Purchase Intention: The Mediating Role of Green Skepticism. *Sustainability*, 11, 2653.
<https://doi.org/10.3390/su11092653>
- Nyilasy, G., Gangadharbatla, H., & Paladino, A. (2014). Perceived Greenwashing: The Interactive Effects of Green Advertising and Corporate Environmental Performance on Consumer Reactions. *Journal of Business Ethics*, 125(4), 693–707. eft.
- Ohanian, R. (1990). Construction and Validation of a Scale to Measure Celebrity Endorsers' Perceived Expertise, Trustworthiness, and Attractiveness. *Journal of Advertising*, 19, 52. <https://doi.org/10.1080/00913367.1990.10673191>
- Ohanian, R. (1991). The impact of celebrity spokespersons' perceived image on consumers' intention to purchase. *Journal of Advertising Research*, 31(1), 46–54.

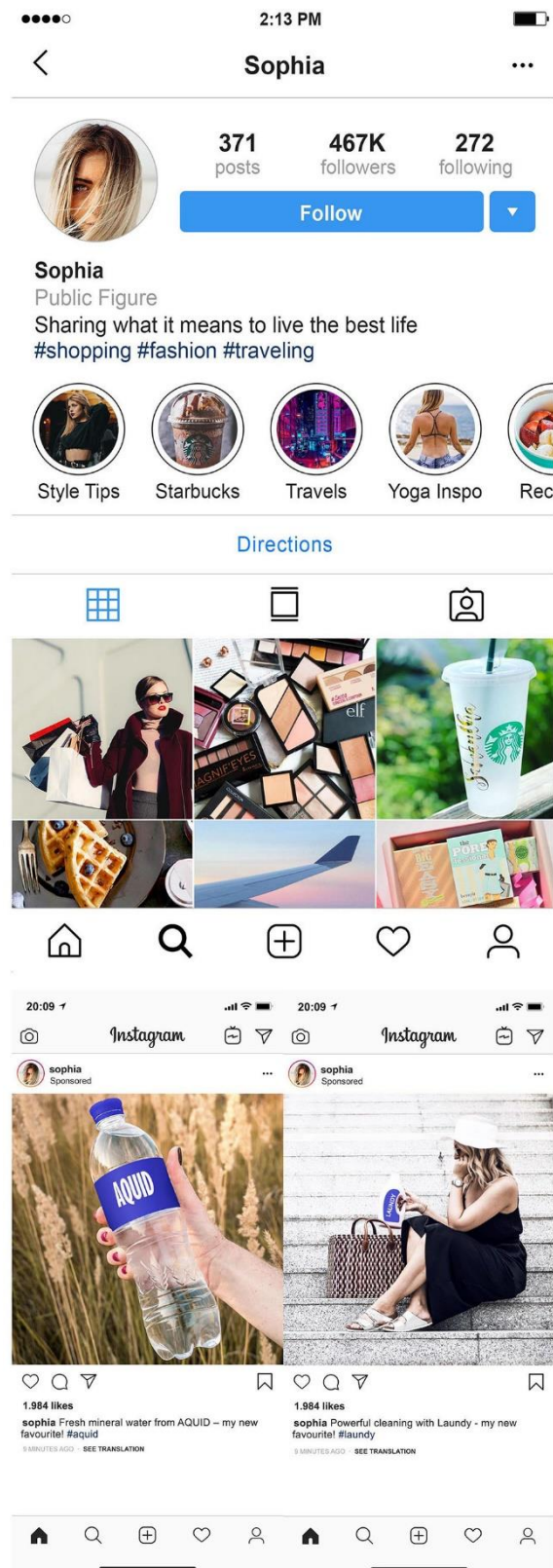
- Olson, J. C., & Dover, P. A. (1978). Cognitive Effects of Deceptive Advertising. *Journal of Marketing Research*, 15(1), 29–38. <https://doi.org/10.1177/002224377801500105>
- Ottman, J., Stafford, E., & Hartman, C. (2006). Avoiding Green Marketing Myopia: Ways to Improve Consumer Appeal for Environmentally Preferable Products. *Environment*, 48, 22–36. <https://doi.org/10.3200/ENVT.48.5.22-36>
- Parguel, B., Benoît-Moreau, F., & Larceneux, F. (2011). How Sustainability Ratings Might Deter ‘Greenwashing’: A Closer Look at Ethical Corporate Communication. *Journal of Business Ethics*, 102, 28. <https://doi.org/10.1007/s10551-011-0901-2>
- Parguel, B., Benoit-Moreau, F., & Russell, C. A. (2015). Can evoking nature in advertising mislead consumers? The power of ‘executional greenwashing’. *International Journal of Advertising*, 34(1), 107–134. <https://doi.org/10.1080/02650487.2014.996116>
- Roberts, J. A. (1996). Green consumers in the 1990s: Profile and implications for advertising. *Journal of Business Research*, 36, 231. [https://doi.org/10.1016/0148-2963\(95\)00150-6](https://doi.org/10.1016/0148-2963(95)00150-6)
- Schmuck, D., Matthes, J., & Naderer, B. (2018). Misleading Consumers with Green Advertising? An Affect–Reason–Involvement Account of Greenwashing Effects in Environmental Advertising. *Journal of Advertising*, 47(2), 127–145. <https://doi.org/10.1080/00913367.2018.1452652>
- Schmuck, D., Matthes, J., Naderer, B., & Beaufort, M. (2018). The Effects of Environmental Brand Attributes and Nature Imagery in Green Advertising. *Environmental Communication*, 12(3), 414–429. <https://doi.org/10.1080/17524032.2017.1308401>
- Segev, S., Fernandes, J., & Hong, C. (2016). Is Your Product Really Green? A Content Analysis to Reassess Green Advertising. *Journal of Advertising*, 45(1), 85–93. <https://doi.org/10.1080/00913367.2015.1083918>

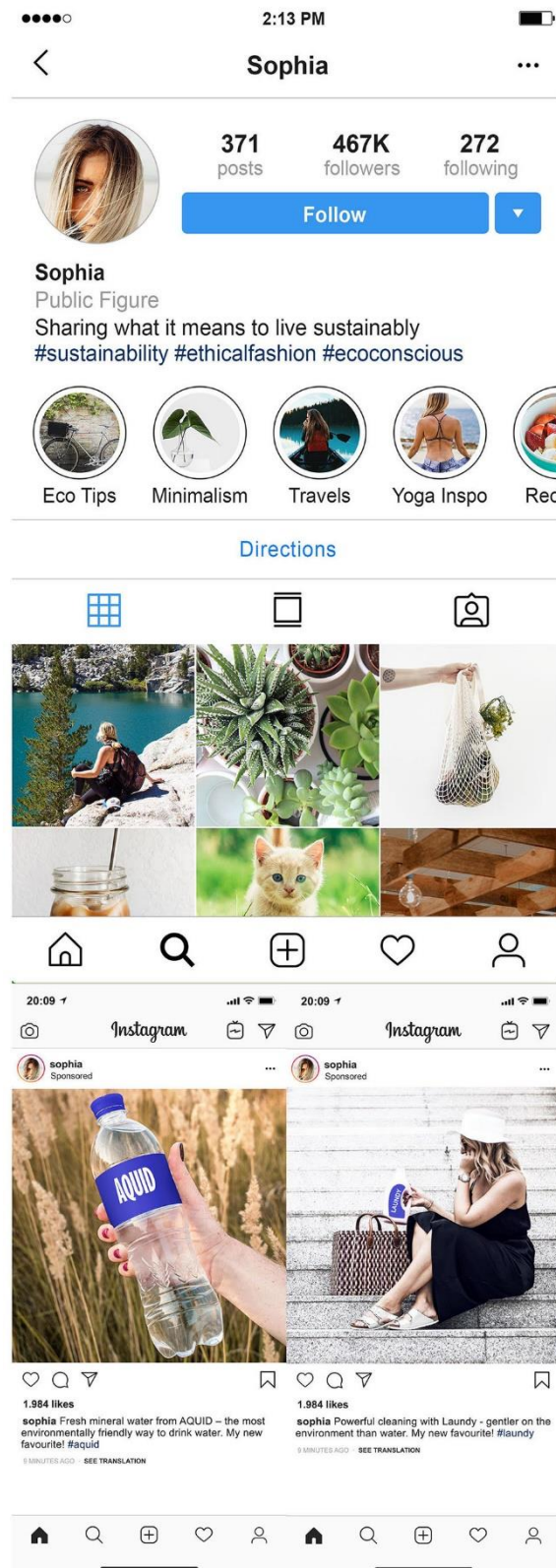
- Shrum, L. J., McCarty, J. A., & Lowrey, T. M. (1995). Buyer Characteristics of the Green Consumer and Their Implications for Advertising Strategy. *Journal of Advertising*, 24(2), 71–82. <https://doi.org/10.1080/00913367.1995.10673477>
- Smith, K. T., & Brower, T. R. (2012). Longitudinal study of green marketing strategies that influence Millennials. *Journal of Strategic Marketing*, 20(6), 535–551. <https://doi.org/10.1080/0965254X.2012.711345>
- Szabo, S., & Webster, J. (2020). Perceived Greenwashing: The Effects of Green Marketing on Environmental and Product Perceptions. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-020-04461-0>
- Till, B. D., & Busler, M. (2000). The Match-Up Hypothesis: Physical Attractiveness, Expertise, and the Role of Fit on Brand Attitude, Purchase Intent and Brand Beliefs. *Journal of Advertising*, 29(3), 1–13. <https://doi.org/10.1080/00913367.2000.10673613>

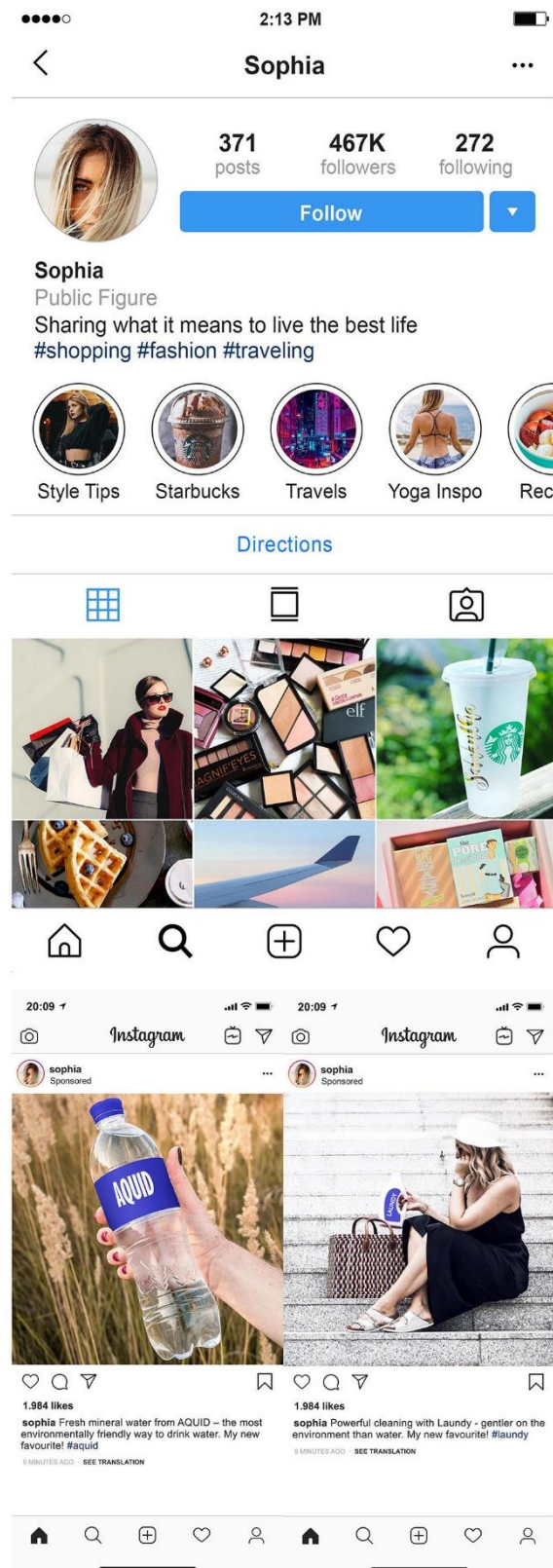
Appendix A

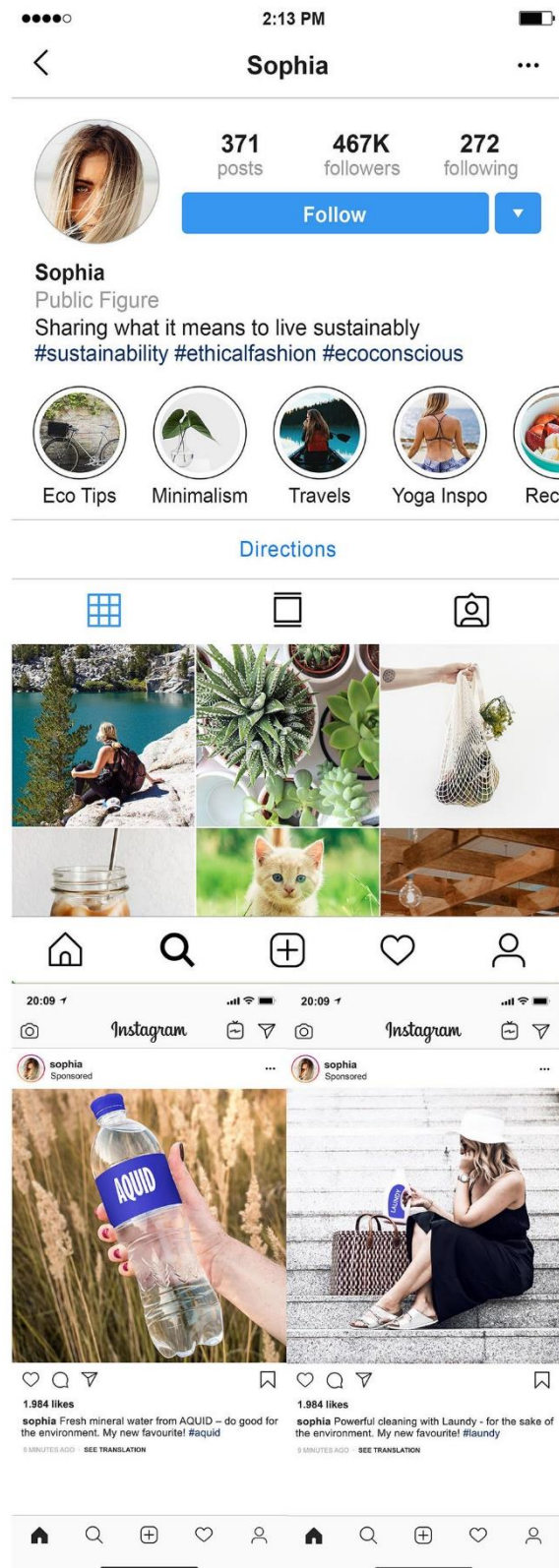
Condition 1: Nondeceptive claims from green influencer

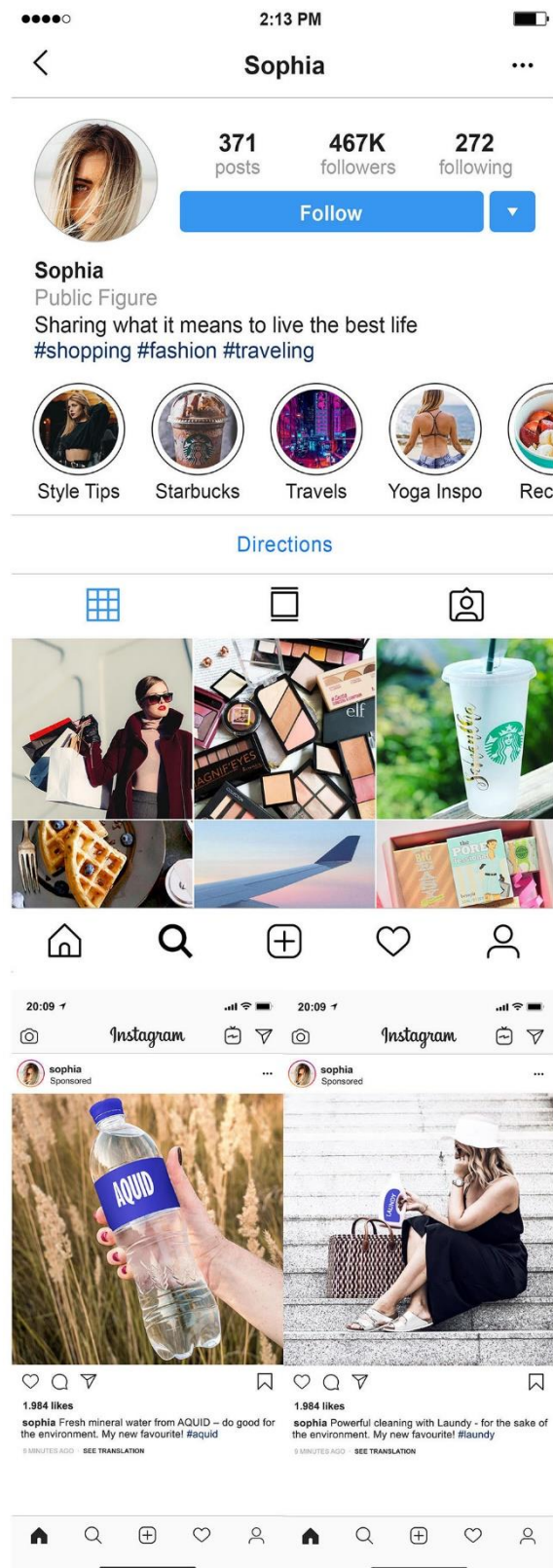


Condition 2: Nondeceptive claims from non-green influencer

Conditions 3: False claims from green influencer

Condition 4: False claims from non-green influencer

Condition 5: Vague claims from green influencer

Condition 6: Vague claims from non-green influencer

Appendix B

Measured items

Influencer credibility

Trustworthiness: dependable, honest, reliable, sincere, trustworthy. Expertise: expert, experiences, knowledgeable, qualified, skilled.

Influencer-brand congruence

As an endorser, I think Sophia is appropriate; As an endorser, I think Sophia matches the brands; I think the combination of Sophia and the brands doesn't fit together.

Attitude toward the brand

I think the brand is good; My opinion on the brand is positive; I find the brand not likable; I find the brand recommendable.

Purchase intention

I would purchase the products of the brand; I am interested in buying from the brand; When presented with the opportunity, I would certainly choose the products of the brand.

Perceived Greenwashing

The Instagram posts... were misleading about the environmental features of the products; Possessed green claims that were vague; Exaggerated what the product's green functionality actually is; Masked important information, which makes the green claims sound better than they are; Used information about environmental features that are false; Did not tell the truth about the product's green functionality.

Environmental Involvement

I like green products; I am willing to make sacrifices to protect the environment; I am not concerned about the environment; I am willing to switch products for ecological reasons; I will not buy a product if the company that sells is ecologically irresponsible; The condition of the environment affects the quality of my life.

Manipulation check

How similar were the Instagram pictures to ones you would normally see on your Feed?,
Would you consider Sophia a green Instagram influencer?

Appendix C

Table 3.

Results of the analysis of simple slopes and conditional indirect effects, using bootstrapping with 90% Confidence Intervals

	<i>b</i>	LLCI	ULCI
False Claim from Green Influencer			
Simple Slope at low (mean-1sd) point of the moderator	.040	-.277	.353
Simple Slope at medium (mean) point of the moderator	.067	-.164	.304
Simple Slope at high (mean+1sd) point of the moderator	.023	-.416	.433
Conditional Indirect Effect at low point of the moderator	.009	-.067	.086
Conditional Indirect Effect at medium point of the moderator	.015	-.039	.074
Conditional Indirect Effect at high point of the moderator	.005	-.096	.105
<i>Index of Moderator Mediation</i>	.006	-.039	.054
False Claim from Non-Green Influencer			
Simple Slope at low (mean-1sd) point of the moderator	-.218	-.521	.096
Simple Slope at medium (mean) point of the moderator	-.140	-.338	.078
Simple Slope at high (mean+1sd) point of the moderator	-.269	-.683	.173
Conditional Indirect Effect at low point of the moderator	-.049	-.130	.024
Conditional Indirect Effect at medium point of the moderator	-.031	-.088	.015
Conditional Indirect Effect at high point of the moderator	-.061	-.167	.039
<i>Index of Moderator Mediation</i>	.017	-.033	.065
Vague Claim from Green Influencer			
Simple Slope at low (mean-1sd) point of the moderator	.291	.001	.577
Simple Slope at medium (mean) point of the moderator	.276*	.065	.482

Simple Slope at high (mean+1sd) point of the moderator	.301	-.086	.683
Conditional Indirect Effect at low point of the moderator	.065	.000	.157
Conditional Indirect Effect at medium point of the moderator	.062*	.010	.131
Conditional Indirect Effect at high point of the moderator	.068	-.015	.184
<i>Index of Moderator Mediation</i>	-.003	-.047	.039
Vague Claim from Non-Green Influencer			
Simple Slope at low (mean-1sd) point of the moderator	-.112	-.397	.174
Simple Slope at medium (mean) point of the moderator	-.133	-.334	.087
Simple Slope at high (mean+1sd) point of the moderator	-.098	-.500	.289
Conditional Indirect Effect at low point of the moderator	-.025	-.097	.041
Conditional Indirect Effect at medium point of the moderator	-.030	-.088	.020
Conditional Indirect Effect at high point of the moderator	-.022	-.122	.067
<i>Index of Moderator Mediation</i>	-.005	-.053	.044
Notes. *** $p < .001$; ** $p < .01$; * $p < .05$.			