# Green lies and their effect on intention to invest

## Abstract

The article explores the consequences of greenwashing deceptions on intention to invest. It analyses whether the presence of a greenwashing lie to stakeholders is detrimental to intention to invest. When a company greenwashes, it deliberately deceives stakeholders about its environmental commitment. Our experimental results suggest that greenwashing has a greater negative impact on intention to invest than a corporate misbehaviour which is unrelated to a deceptive communication. In order to understand how different forms of greenwashing may affect intention to invest, we develop a typology of greenwashing deceptions, based on the variety of greenwashing cases that have emerged recently. The results show that individuals are less inclined to invest in a company that falsifies its claims (falsification) and which engages in manipulative business practices (deceptive manipulation), as compared to a company that instrumentally selects which information to disclose (information selection) or tries to obscure misbehaviours through publicizing its good business practices (attention diversion).

## 1. Introduction

Over recent decades, the instrumental use of green claims by companies has become a central topic in the public debate about corporate social responsibility (CSR) and green marketing (Lane, 2013). In this context, an increasing number of organizations has been accused of "not walking the talk", i.e. their CSR claims about environmental issues have not been followed up or supported by actual corporate activities (Walker and Wan, 2012). This divergence between responsible corporate communication and environmental practices is commonly known as greenwashing.

Following Guo et al. (2018), greenwashing combines two corporate behaviours: an environmental misbehaviour (or poor environmental performance) and a misleading communication about said environmental performance. Thus, the concept implies an inconsistency between environmental-related words and deeds. Therefore, a core element of greenwashing is the presence of a lie to stakeholders which seeks to achieve corporate benefits.

While it is clear that greenwashing has an impact on stakeholders' reactions (Aji and Sutikno, 2015; Chen and Chang, 2013; Chen et al., 2014; De Vries et al., 2015; Zhang et al., 2018), it is not clear *why* consumers' and other stakeholders are affected by greenwashing. This could be accounted for by either by the environmental misbehaviour itself, or by the presence of a lie. Therefore, in order to understand how stakeholders' intentions are affected by such an inconsistency in corporate communication, one of the aims of this study is to isolate the effects of a greenwashing lie, rather than the firm's environmental misbehaviour per se.

Notably, firms may lie to stakeholders in a variety of ways, as evidenced by the proliferation of different greenwashing scandals. Nowadays, companies may engage in

a number of complex strategies to shift attention away from critical environmental issues to criticize competitors, to create confusion, or to deceptively communicate the firm's goals and accomplishments (Lyon and Montgomery, 2015). The majority of research on greenwashing does not distinguish between different forms of greenwashing; rather, it analyses the factors that can generate the perception of greenwashing in consumers (Nyilasy et al., 2014; Parguel et al., 2011), or the effects that greenwashing can have on the company (Du, 2015). However, a number of studies have underlined the need to clarify the full range of greenwashing (De Jong et al., 2017; De Jong et al., 2020; Lyon and Montgomery, 2015). Thus, this study builds on extant literature and conceptualizes a new typology of greenwashing.

Our greenwashing typology combines the type of deception (active versus passive) and the level of greenwashing (action versus communication). The type of deception is active when false information is fabricated and delivered to stakeholders, and passive when companies manage to hide information. At the communication level, the greenwashing is performed through words. At this level, we can distinguish between *falsification* (active deception), when a company engages in the creation of a false communication content, and *information selection* (passive deception), which happens when the company's environmental communication content is strategically selected in order to omit negative information.

At the action level, the greenwashing is performed through business practices, and takes the active form through *deceptive manipulation:* the manipulation of business practices to support green claims. Conversely, *attention diversion* is the passive form, and refers to the practice of supporting eco-friendly initiatives to mask negative information. The proposed typology allows for a more nuanced understanding of the various forms of

greenwashing and their effects on stakeholders. Table 1 summarizes our proposed typology of greenwashing.

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Specifically, this study examines how these forms of greenwashing deception might affect the intentions of non-professional investors, such as individuals or small private investors. The majority of greenwashing literature has almost exclusively focused on consumers' reactions, thereby overlooking the effect of greenwashing on other stakeholder groups (see Table A.1 in Appendix A for a summary of the main articles that have investigated greenwashing-related phenomena, and the drivers of consumers' perception of greenwashing). By contrast, in this study we focus on intention to invest, as companies are becoming increasingly interested in finding new forms of finance (Aspara and Chakravarti, 2015), and also because of investors' growing desire for environmentally-friendly firms and socially-responsible investments (Elliot et al. 2014; Sandberg et al. 2009).

The article is structured as follows: in the next chapter, the relevant greenwashing literature is reviewed, and hypotheses proposed; subsequently, we present the empirical research and three experimental studies conducted to test the hypotheses and, finally, the results are discussed, and future research directions outlined.

## 2. Theoretical framework and hypotheses' development

### 2.1 Greenwashing: A corporate environmental lie

Greenwashing firms are viewed by stakeholders as manipulative, opportunistic and untrustworthy (King and Lenox, 2000). Such negative associations occur because, when a company engages in corporate communication, it generates an implicit contract with

its stakeholders, who expect the company to be honest (Clor-Proell, 2009). As a consequence, stakeholders are likely to form expectations regarding such companies' ability to deliver on their promises about their socially-responsible behaviour. It is paramount for companies to fulfil such promises; to intentionally break this implicit contract with stakeholders may have negative consequences in terms of stakeholders' perceptions, such as reduced attitudes and intentions (Bailey and Bonifield, 2010), as well as negative perceptions of such companies' credibility, reliability and attractiveness (Burgoon and Burgoon, 2001; Clor-Proell, 2009; Hodge et al., 2006).

Whilst the breaking of such a contract might be unintentional (for example, due to an uncontrollable accident by *force majeure,* such as an environmental disaster caused by a hurricane), in the realm of greenwashing this breaking occurs because an environmental communication with a manipulative and deceptive intent is released (Delmas and Cuerel Burbano, 2011; Lange and Washburn, 2012; Seele and Gatti, 2017; Siano et al., 2017). In fact, greenwashing is never caused by an accident, force majeure or an error; it always involves a strategic, intentional and voluntary corporate lie (Mitchell and Ramey, 2011; Roulet and Touboul, 2015) and the dissemination of disinformation (Oxford English Dictionary, 2010) aimed at "misleading consumers regarding the environmental practices of a company, or the environmental benefits of a product or service" (Delmas and Cuerel Burbano, 2011).

Lies generate distrust (Darke and Ritchie, 2007) and avoidance of the deceiver (Wang et al., 2009). What is more, marketing deceptions decrease shareholder value (Myslinski Tipton et al., 2009). In the realm of CSR, the strategic use of deceptive communications gives stakeholders the impression that the greenwashing is the result of a company's corrupt culture (Lin-Hi and Blumberg, 2018), and that it is the result of a highly-intentional corporate misbehaviour (Lange and Washburn, 2012). This intentionality

aggravates the judgments about such misbehaviour (Pizzetti et al., 2020; Zhou and Ki, 2018) and leads to even more severe consequences (Gillespie et al., 2016).

We might, then, expect that individuals will be less willing to invest in a company accused of greenwashing than in a company criticized for an environmental misbehaviour because of the effect of a green lie (i.e. greenwashing). Greenwashing has a negative effect on stock exchange returns (Du, 2015; Price and Sun, 2017), because individual investors might negatively forecast a company's future cash flows, and then adjust their investment behaviour accordingly (Cleeren et al., 2017). Non-professional investors tend to take CSR particularly seriously when making investments (Elliot et al., 2014), and tend to avoid investing in companies that they consider to be environmentally harmful (Lewis and Mackenzie, 2000). The investment choices of non-professional investors are not always rational, and may be influenced by affective factors (Aspara and Tikkanen, 2010). The difference between greenwashing, which intentionally and strategically violates expectations (Li-Hin and Blumberg, 2018), and an environmental misbehaviour, might therefore be central in shaping non-professional investments. A misbehaviour that is not associated with an environmental communication does not imply a contract violation, because there are no CSR promises to be fulfilled. Thus, the misbehaviour may be less detrimental to investment intentions than greenwashing. Conversely, green communications raise stakeholders' expectations about a company's future behaviour and performance. Therefore, when a company is embroiled in greenwashing, it is perceived as blameworthy, and the damage caused to the environment is viewed as being intentional (Pizzetti et al., 2020). In such circumstances, stakeholders will perceive a greater magnitude of contract violation (Li-Hin and Blumberg, 2018) and dishonesty, as compared to a company that does not claim to be environmentally-committed (Parguel et al., 2011). We thus hypothesize that

greenwashing affects intention to invest more negatively than an environmental

misbehaviour that is not preceded by a misleading CSR communication. More formally:

$H_1$: *Greenwashing negatively affects intention to invest to a greater extent than an environmental misbehaviour.*

### 2.2 Active greenwashing versus passive greenwashing

Greenwashing is not enacted in the same way by all companies (De Jong et al., 2020).

Indeed, companies may greenwash in a variety of ways. What is more, the way in which

greenwashing occurs may also affect stakeholders' reactions.

Given that greenwashing constitutes a form of deceptive communication (Bazillier and

Vauday, 2014; Lane, 2010; 2013), the way in which companies perform the deception

can increase or decrease the effects of greenwashing. In the field of communication

psychology, deceptive communication can be categorized as either active or passive.

The deception is *active* when individuals misrepresent or substitute a reality by

fabricating false information; it is *passive* when individuals obscure, omit or selectively

disclose information (O'Connor and Carnevale, 1997; Olekalns et al., 2014; Schweitzer

and Croson, 1999; Spranca et al., 1991). Passive deception does not imply an alteration

of a specific reality, but involves the strategic selection of information to

advantageously withhold critical information (Van Swol and Braun, 2014).

With reference to greenwashing literature, scholars have identified both active and

passive deceptions as forms of greenwashing (Bazillier and Vauday, 2014; Lane, 2010;

2013). Active greenwashing consists of making false claims about the environmental

attributes and benefits of a product or the procedures used by a company. Active

greenwashing corresponds to false environmental communications (Lane, 2010; 2013;

Mills, 2009), such as when a company makes claims about its environmental features,

activities or performances that are not true, performed or achieved. For example, in January 2013 Amazon was accused of having made false environmental communications, and had to pay more than $1,000,000 in fines. Amazon had advertised some textile products as being made of bamboo, but they were actually made of rayon. While bamboo textiles are considered to be environmentally-friendly products, the process for manufacturing rayon is far from being "green" (Dumortier, 2014).

Passive greenwashing relates to a corporate communication characterized by a selective disclosure of positive information about a company, and which simultaneously withholds some negative information regarding environmental issues (Kim and Lyon, 2011; Lyon and Maxwell, 2006; 2011; Marquis and Toffel, 2011; Mitchell and Ramey, 2011). Although passive greenwashing does not imply the fabrication of false content, it is considered a form of deception because of the intentional and strategic use of some (positive) information in order to obscure critical issues (Du et al., 2016). Passive greenwashing occurs when a company presents itself as having a good environmental profile and promotes its positive activities, while strategically omitting to discuss its negative environmental issues (Lyon and Maxwell, 2006). Passive greenwashing does not mean that the communication is vague, ambiguous or irrelevant. An environmental message can be clear and detailed, yet strategically designed to focus only on certain positive information. It may avoid any mention of any negative environmentally-critical aspects of corporate behaviour. Passive greenwashing differs from half-lies, which are a socially-responsible behaviour that is only partially performed (De Jong et al., 2020). In passive greenwashing, the allegations are unrelated to any previous CSR communication, and they have opposite valence to the communication. Indeed, greenwashing in different domains is common, and frequently attracts media attention (Vanhamme et al., 2015). For example, H&M is committed to producing products by

using recyclable and sustainable materials (35% of such materials used in 2018, aiming at 100% by 2030), but failed to communicate that it burns unsold but usable clothes (Farmbrough, 2018). The corporate's green communication, whilst detailed, was strategically selective in omitting to mention the negative side of its environmental engagement. Such an omission can be considered an example of passive greenwashing.

Generally, passive deceptions are considered as being less blameworthy than active deceptions. Studies have demonstrated that people using passive deceptions feel less guilt, and perceive their lie as less deceptive than deceiving by fabricating false content (DeScioli et al., 2011). When fabricating the truth, individuals are less liked, less recommended and make a worse impression than when they are omitting something (Rycyna et al., 2009). From the perspective of moral responsibility, an active deception is more morally questionable than a passive one (Wettstein, 2012). This morality implies that companies are considered more accountable for what they incorrectly state (i.e. active deception), than for what they omit to say (i.e. passive deception) (Folkes and Kamins, 1999). Given that companies are held more accountable for active deception than passive deception (Folkes and Kamins, 1999), individuals might perceive passive greenwashing as a relatively minor sin compared to active greenwashing, with a correspondingly reduced impact on the intention to invest. Therefore, we hypothesize:

H$_2$: *Active deception greenwashing affects intention to invest more negatively than passive deception greenwashing.*

### 2.3  Action-level greenwashing versus communication-level greenwashing

Recent scandals and advancements in the literature (Siano et al., 2017) suggest that greenwashing is not limited to communication; some companies also engage in actions

aimed at masking their non-sustainable practices. By analysing the Volkswagen emissions scandal, Siano and colleagues (2017) conceptualized a new type of greenwashing, that of *deceptive manipulation.* This "consists of deceptive conduct, in which sustainability communication engenders a deliberate manipulation of business practices aimed at making tangible statements regarding corporate sustainability" (p. 33). In the context of our investigation, this new type of greenwashing can be categorized as a form of action-level falsification, since the deception to the stakeholder resides in the "walk", and not only the "talk". Therefore, *deceptive manipulation* refers to the manipulation of business practices to support green claims (for example, Volkswagen's development of a device to manipulate $CO_2$ emissions) (Siano et al., 2017).

Notably, not only active deceptions may be performed at the action level; passive deceptions too can be performed through actions. Greenwashing can also take the form of attention diversion, which refers to the practice of supporting initiatives (such as spending money to support certain environmentally-friendly initiatives, or a company linking their products to costly and dubious certifications) to shift stakeholders' attention from unsustainable procedures or performance (Siano et al., 2017). When companies engage in passive deception at the action level, they greenwash by engaging in actions that deliberately eclipse actual environmental performance (Matejek and Gössling, 2014).

When companies greenwash at the action level, this might have a greater negative impact on intention to invest than communication-level greenwashing. Indeed, companies are held more accountable for actions than communications (Folkes and Kamins, 1999). What is more, actions are more costly and difficult to perform than communications, so actions are seen as a strong signal (Berrone et al., 2017) of a

company's high involvement in greenwashing. When a company is faced with a scandal

such as greenwashing, investors adjust their investment behaviours to the forecasted

cash flow. If a scandal per se generates concerns about future earnings (Chen et al.,

2009; Gao et al., 2015), then investors might perceive as being particularly risky any

investment in a company that: has to face regulatory actions, has lower sales because of

the scandal or has already spent money because of its deceptive intent. Thus, we expect

that action-level greenwashing further decreases intention to invest. This effect might be

particularly relevant in cases of passive greenwashing. Studies on deceptive

communications found that shifting attention is perceived as a more dishonest and

blameworthy behaviour than the strategic omission of certain information (Peterson,

1996). Moreover, the receiver of the deception perceives the proactive communication

of truthful actions in order to mislead them as morally equivalent to the company

fabricating false claims (Rogers et al., 2017). Thus, we expect that the action level

affects intention to invest more negatively than the communication level, especially

when the greenwashing is passive. More formally,

   $H_3$: *Action-level  greenwashing affects intention to invest more negatively compared
to communication-level greenwashing ($H_{3a}$), especially when the action-level deception
is passive, compared to a passive greenwashing deception at the communication level
($H_{3b}$).*

   **3. Overview of the empirical research**

We conducted three experimental designs to test our hypotheses. We applied the same

procedures, developed according to the literature, to all three studies (Parguel et al.,

2011; Vanhamme et al., 2015). First, we introduced an investment scenario. We

described a situation in which a fictitious character wants to invest a small amount of

money in a company suggested by a friend, due to the good level of profits the friend

had gained from investing in this company. Building on the literature on investment

decisions, we used a fictitious character to reduce any desirability bias (Fisher, 1993).

We described the fictitious character as a careful investor who searches for information before investing, and who prefers domestic companies (Oberecker and Diamantopoulos, 2011). The investment advisor was described as a friend, since peers' behaviour fosters imitation (Delfino at al., 2016). As regards the company in which the character was thinking of investing, we used a fictitious name to avoid recall bias and differences in attitude towards the company between participants. The company was described as a food company (breakfast items), operating worldwide. Following the procedures employed by previous studies on greenwashing (De Jong et al., 2020; Vanhamme et al., 2015), the description of the company was followed by a reproduction of a recent news item regarding the company. This story varied according to the experimental conditions. We used a news item for manipulative purposes, because the media has a central role in greenwashing, since greenwashing has no consequences until an accusation is reported by the media (Seele and Gatti, 2017; Stabler and Fischer, 2020). Indeed, regardless of the type and level of deception, the presence of greenwashing can be detected only when a communication or an action is blamed by the media, NGOs or other stakeholders (Seele and Gatti, 2017). Therefore, we used a news item to manipulate greenwashing, because in real cases greenwashing requires visibility and an accusation from a third party.

We ensured the same volume of text across experimental conditions in order to avoid biases related to cognitive load or reading-time differences. After these manipulations, participants filled out questions regarding their intention to invest (3 items from Elliott et al., 2017), and scenario credibility (4 items from Dahlen and Lange, 2006). This was used as a control variable to guarantee that conditions were perceived to be equally credible, irrespective of any manipulations. All the measures used a 7-point Likert scale, (items are reported in Appendix B). The questionnaires also included attention and

manipulation checks. Those participants who failed the attention checks were automatically excluded from the sample. The manipulation checks are described in the procedure section of each study. At the end of the questionnaires, demographic data were collected, and the participants were thanked. The scenario for the investment situation (which was the same for all the studies) and the scenarios manipulating the independent variables are available in Appendix C.

In all the experiments, we recruited participants from the Amazon Mechanical Turk (MTurk) sample. Following recommendations in the literature (Cheung et al. 2017; Sharpe Wessling et al. 2017), we avoided the possibility of multiple participation in the same experiment[1]. We deemed MTurk samples to be suitable for the aim of our investigation because they are appropriate for investigating a variety of contexts, such as greenwashing (Nyilasy et al., 2014), and investment, given the variety of MTurkers' characteristics (including investment prowess and sophistication). Prior research has used MTurkers as proxies for non-professional investors (Rennekamp, 2012), because they are similar to the general population in terms of financial literacy (Krische, 2018), and constitute a valid source of non-professional investor participants (Owens and Hawkins, 2019; Rapley et al., 2018).

We recruited participants only from the U.S. MTurk panel, and we then developed our stimuli in accordance with American investors' preferences. The scenarios we used presented a company founded in the U.S., since the factor of country of origin affects financial evaluations and decisions (Carlsson Hauff and Nilsson, 2017). Participants

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[1] Although we did everything we could to avoid repeated cross-experiment participation, we found that 9 participants (out of 353) participated in two studies. However, we decided to keep such participants in our sample, considering the low risk of cross-contamination (Cheung et al., 2017) between studies, given that the data collection occurred over several months (from April 2018 to March 2019)

were randomly assigned to experimental conditions, and were rewarded with a small financial compensation.

### 3.1 Study 1: Greenwashing versus environmental misbehaviour

In Study 1, we investigated the effect of greenwashing on intention to invest, comparing it to an environmental misbehaviour, that is a case that cannot be recognized as greenwashing, since the company does not communicate its environmental commitment. The aim of this experiment was to provide support to our intuition that it is the presence of a lie that is of most significance when stakeholders encounter greenwashing (testing $H_1$).

141 participants ($M_{age}$ = 38.5; 67.4% male) took part in 2 (Environmental communication: present or absent) x 2 (Misbehaviour: present or absent) between-subjects design. Table 2 summarizes the experimental conditions. Besides the two conditions where the misbehaviour was present (greenwashing and environmental misbehaviour), the experimental design also included two conditions in which the company was not accused of environmental misbehaviour. These two conditions functioned as a baseline with which we could compare the effect of the allegation, be it greenwashing or environmental misbehaviour. We included the two conditions to show that: i) environmental misconduct is detrimental to intention to invest; ii) but this conduct is more detrimental when associated with a misleading communication (greenwashing) (testing H1).

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### 3.1.1 Procedures

When the corporate environmental communication was present (greenwashing and environmental communication), the scenarios featured a communication from the company regarding the removal of palm oil from all its products, aimed at improving the sustainability profile of its products. Conversely, in the other two conditions (i.e. environmental misbehaviour and the control group), we provided a description unrelated to environmental activities. We developed the scenarios in this experiment, and in the following, according to the literature (Vanhamme et al., 2015), and they were also inspired by companies' own websites (Nestlé, Ferrero, etc.).

We manipulated the misbehaviour factor by showing a news item about the company; the company was accused of using palm oil, the production of which causes deforestation, habitat degradation and threats to wildlife (versus a news item regarding a production plan). Both the greenwashing and the environmental misbehaviour conditions involved the same accusations, but the greenwashing case emphasized the discrepancy between the company's behaviour and its communications. We adopted palm oil as a misbehaviour because its cultivation causes deforestation and contributes to the risk of the extinction of animals (such as orangutans) and plants (WWF, 2018). Moreover, palm oil cultivation has caused major environmental scandals (Ionescu-Somers and Enders, 2012; Vanhamme et al. 2015) and has been widely debated in the media (Fernando et al., 2014). Therefore, stakeholders are able to evaluate it because they are familiar and largely aware of the environmental threats that its cultivation causes (Aguiar et al., 2018). After the manipulations, the participants filled out questions regarding their intention to invest (Cronbach $\alpha$ = .922) and the credibility of the scenario (Cronbach $\alpha$ = .795).

### 3.1.2 Manipulation checks

To control for the effectiveness of our manipulation, we included a multiple-choice question, and asked participants to indicate the correct options according to what they had read about the following items: "The company uses palm oil"; "Palm oil cultivation occurs at the expense of the natural environment" and "The company released the advertising campaign 'Good for you, good for the planet'".

The first two answers of the manipulation check question discriminated the condition according to the misbehaviour factor. We anticipated that those exposed to the misbehaviour would be more likely to select these two items. The data suggested that the factor was effectively manipulated. On average, 84.8% of participants selected the right option. In addition, Chi-square tests conducted on both items revealed a significant difference between conditions (Item 1: Chi-square = 58.992, $p < .001$; Item 2: Chi-square = 75.949, $p < .001$). The last answer was expected to be selected by those participants exposed to the presence of an environment-related communication. The results showed a significant difference between the conditions (Chi-square = 67.299, $p < .001$), with 87.4% of participants selecting the right option. To avoid any bias in the results related to the participants paying poor attention, we eliminated those who failed at the manipulation check. The final sample on which the analyses were conducted was then composed of 116 participants.

### 3.1.3 Preliminary Analyses

A preliminary analysis on scenario credibility revealed that the scenarios were perceived as equally credible among conditions (Environmental-related communication: $F = .447$, $p > .05$; Misbehaviour: $F = .083$, $p > .05$; Interaction: $F = .233$, $p > .05$; $M_{greenwashing} = 5.21(1.09)$ or $M_{env\_misbehaviour} = 5.44(.92)$ or $M_{fair\_communication} = 5.25(1.04)$ or $M_{control\_group} = 5.29(1.16)$).

### 3.1.4 Findings

The ANOVA on intention to invest revealed a significant main effect of the misbehaviour factor (F = 60.373, p < .001); when the misbehaviour was present, participants were less willing to invest in the company ($M_{present}$ = 3.78(1.60) or $M_{absent}$ = 5.44(.92))[2]. Further analysis showed that participants in the *greenwashing* condition were less willing to invest compared to participants in the *environmental misbehaviour* condition (t = 4.082, p < .001). Table 3 shows the means and standard deviations for all the conditions in all the experiments.

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Insert Table 3 about here
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The results of Study 1 provide preliminary support to H1, showing that participants in our experiment reported a lower intention to invest when greenwashing was present than when the company was involved in an environmental misbehaviour. The results therefore suggest that, because of the presence of a lie to stakeholders, greenwashing can be particularly detrimental to intention to invest. When the company misbehaved, participants tended to be less keen to invest in the company, as compared to a company not involved in such a misbehaviour. This suggests that the misbehaviour per se has a negative effect on intention to invest. The significant interaction effect enabled us to clarify the effect of greenwashing in shaping intentions related to investing. The contrasts tests clarified that the most detrimental of the conditions is greenwashing. Indeed, not only were stakeholders less willing to invest in such a company compared to a company that does not misbehave (i.e. environmental communication), but also less

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[2] The ANOVA also compared the effect of the second factor and the interaction effect. Specifically, we found that the environment-related communication factor was also significant (F = 9.721, p < .01.), with lower intention when the environmental factor was present (Mpresent =4.27(1.84) or Mabsent = 4.97(1.13)). The interaction effect was also significant (F = 15.494, p < .001). Given H1, we reported only relevant results in the text.

willing compared to the condition of an environmental misbehaviour. This result is in line with our expectation that it is the lie implicit in greenwashing that decreases intention to invest more than environmental misbehaviours (supporting H1).

The next studies sought to ascertain whether different types of greenwashing deception might influence intention to invest differently.

*3.2 Study 2: Active greenwashing versus passive greenwashing*

The aim of Study 2 was to investigate whether, and if so how, greenwashing affects intention to invest according to the different types of greenwashing deception. Specifically, we expected that an active deception affects intention to invest more negatively than passive greenwashing (H2).

### 3.2.1 Participants and Procedures

69 participants ($M_{age}$ = 37.07; 58% male) took part in a single-factor (greenwashing deception: active or passive), between-subjects design.

The experiment followed the same procedures as Study 1, and employed the same investment scenario. By varying the news items provided to participants, we manipulated the independent variable. For the active condition, the news item showed the inconsistency between the company's sustainability communication, which cites the company's commitment towards sourcing 100% of ingredients from sustainable plantations, and the actual production and use of palm oil by the company, which causes deforestation, habitat degradation and threats to wildlife.

For the passive condition, the company communicated a commitment to palm oil cultivation in terms of working conditions, which overlooked the issue of damage to the ecosystem. Then, the news item was about the deforestation caused by the company's

palm oil cultivation (the same as the other condition), and emphasized that the company had issued a non-transparent communication regarding the issue of deforestation.

Participants filled out questions regarding intention to invest (Cronbach $\alpha$ = .899), and the credibility of the scenario (Cronbach $\alpha$ = .850).

### 3.2.2 Manipulation check

The manipulation checks consisted of two items on a 7-point semantic differential scale ("How would you describe the company's sustainability claim?"; from 1= "It omits important information about palm oil" to 7= "It includes false information about palm oil"; from 1= "It is not transparent" to 7= "It is false") which were then averaged in a single index (Cronbach $\alpha$ = .845).

The analysis revealed that the scenarios effectively manipulated the independent variables (t = -6.299, p < .001; $M_{active}$ = 4.54(1.54) or $M_{passive}$ = 2.40(1.28)).

### 3.2.3 Preliminary Analyses

A preliminary analysis on scenario credibility revealed that the scenarios were perceived to be equally credible between conditions (t = -.835, p >.05; $M_{active}$ = 5.17(1.25) or $M_{passive}$= 4.90(1.40)).

### 3.2.4 Findings

The analysis revealed a significant difference between the two conditions (t = 2.529, p < .05); participants were less willing to invest in the company when it was accused of an active greenwashing deception ($M_{active}$ = 2.95(1.38)) compared to the passive greenwashing deception ($M_{passive}$ = 3.79(1.39)).

The result does not contradict H2, showing that active greenwashing affects intention to invest more negatively than passive greenwashing. The subsequent study further

examined how the level of the deception shapes intention to invest, analysing the four forms of deception proposed (see Table 1).

*3.3 Study 3: Action-level greenwashing versus communication-level greenwashing*

The aim of Study 3 was to further examine how deception affects intention to invest, by manipulating deception at the communication level and the action level. The research design was a 2 (greenwashing deception: active or passive) x 2 (level of greenwashing: communication or action) between-subjects design. The four types of greenwashing presented in Table 1 correspond to the four experimental conditions, namely: *falsification*, *information selection*, *deceptive manipulation* and *attention diversion* – which we investigated to understand how different forms of greenwashing deception affect investment intentions, specifically focusing on the action level (testing H3a and H3b).

Study 3 also included new variables, introduced to control that the four types do not diverge in terms of the main characteristics of greenwashing. According to our conceptualization, greenwashing features an inconsistency between claims and performance (Walker & Wan, 2012; Guo et al., 2018), an act that is intentional and deliberate. It also involves the strategic use of deception (Mitchell & Ramey, 2011; Nyilasy et al., 2012) to manipulate stakeholders' perceptions in order to achieve secondary goals (Seele and Gatti, 2017). Following this conceptualization, the questionnaire presented items to measure the perceived strategic and intentional use of CSR, as well as the discrepancy between claims and performance. We expected to find similar means between the four experimental conditions.

3.3.1 Participants and Procedures

143 participants ($M_{age}$ = 36.76; 63.6% male) participated in the experiment, and they were randomly assigned to experimental conditions.

We manipulated the active deception conditions by presenting the company as committed to using 100% ingredients from certified sustainable plantations, guaranteed by a traceability system. To manipulate the level of greenwashing, we presented two different news items. In the falsification condition, the news item stated that the company's communication was false, since the palm oil used by the company was derived from unsustainable plantations (causing deforestation, harm to wildlife and habitat degradation). In the deceptive manipulation condition, the news item revealed the company's use of a fallacious traceability system, which did not in fact detect non-sustainable plantations. The passive deception was achieved by providing strategically-selected information about the company's commitment to sustainability. The information selection condition specifically used the same scenarios of passive greenwashing adopted in Study 2, wherein the company pledged its commitment to using only exploitation-free palm oil cultivation. In the attention diversion case, the communication was about a donation to a program to support local farmers. In both cases, the news revealed the mendacious intent of obscuring the environmental consequences of their methods of palm oil cultivation.

After the manipulations, participants filled out questions regarding their intention to invest (Cronbach α = .908). As control variables, we measured: the credibility of the scenario (Cronbach α = .825); the perceived strategic use of CSR (one item from Romani et al., 2016); the perceived intentionality of deceiving the audience and the perceived discrepancy between the company's claim and its performance (one item each from Alicke et al., 2013).

### 3.3.2 Manipulation checks

To check the effectiveness of the greenwashing deception manipulation, we included the same manipulation check items as in Study 2 (Cronbach $\alpha$ = .776), which were averaged into one variable. A t-test revealed that the factor was effectively manipulated (F= -3.493, p < .01; $M_{active}$ = 4.88(1.76) or $M_{passive}$ = 3.78(2.00)).

Manipulation effectiveness of the greenwashing level was measured with a single item on a 7-point semantic differential scale ("How would you describe the company's misbehaviour regarding the environment?" from (1) manipulative action to (7) manipulative communication). The analysis conducted confirmed the effectiveness of the manipulation (t= 3.913, p <.001; $M_{communication}$ = 5.45(1.54) or $M_{action}$ = 4.44(1.54)).

### 3.3.3 Preliminary analysis

A preliminary analysis of scenario credibility revealed that the scenarios were perceived as equally credible across conditions (Greenwashing deception: F = .008, p >.05; Level of greenwashing: F= .360, p >.05; Interaction: F = .001, p >.05).

ANOVA analyses conducted on the new control variables revealed that the four greenwashing deceptions were perceived as equally used, strategically speaking, to achieve business objectives (Greenwashing deception: F = 1.339, p >.05; Level of greenwashing: F= 1.446, p >.05; Interaction: F = .322, p >.05), intentional (Greenwashing deception: F = 1.103, p >.05; Level of greenwashing: F= .058, p >.05; Interaction: F = 1.172, p >.05), and with the same degree of discrepancy between the claim and the performance (Greenwashing deception: F = .204, p >.05; Level of greenwashing: F= .000, p >.05; Interaction: F = .311, p >.05).

### 3.3.4 Findings

The analysis revealed two main effects and the interaction effect. In line with the results of Study 2, we found that the type of greenwashing deception significantly affected intention to invest (F= 6.715, p <.05). Specifically, participants were less willing to invest in the company when it was involved in active deceptions (i.e. *falsification* and *deceptive manipulation*), compared to passive deceptions (i.e. *info selection* and *attention diversion*) ($M_{active}$ =3.27(1.76) or $M_{passive}$ = 3.89(1.54)).

The level of greenwashing also influenced the intention to invest; when the greenwashing was at the action-level, intention to invest was significantly lower compared to greenwashing at the communication-level (F= 6.240, p <.05; $M_{communication}$ = 3.89(1.69) or $M_{action}$ = 3.28(1.62)).

We also found a significant interaction effect (F = 4.272, p <.05). Further analyses showed that *falsification* and *information selection* significantly differed (t = 3.339, p =.01), with lower intention to invest in the falsification condition (M= 3.32(1.83)) compared to information selection (M= 4.58(1.20)). This result is in line with the findings of Study 2, namely that when the greenwashing is at the communication level, active greenwashing deception has a greater negative impact on intention to invest compared to passive greenwashing deception. Moreover, a closer examination of the means of each condition revealed that active greenwashing at the action level (i.e. *deceptive manipulation*) was the most detrimental to investment (M= 3.21(1.69)). However, *deceptive manipulation* did not significantly differ from either *falsification* (M =3.32(1.83)) or *attention diversion* (M=3.35(1.59)). In addition, we found that the action level was especially detrimental when the greenwashing was passive, as the attention diversion condition obtained a significantly lower mean of intention to invest as compared to information selection (t = 3.646, p <.01; $M_{attention\_diversion}$ = 3.35(1.59) or $M_{info\_selection}$= 4. 58(1.20)).

The results of Study 3 provide additional support to the idea that greenwashing is particularly detrimental to intention to invest when the communication provides false information (i.e. falsification), as compared to an omission of information (i.e. info selection). We also found that, when the deception took the form of an action, it decreased intention to invest (supporting H3a). Moreover, the action level had a stronger effect on passive greenwashing deception; when the company diverted attention from environmental problems with actions, rather than with selected words, intention to invest was lower. These results are aligned with H3b.

### Discussion and contributions

A key assumption in CSR theorization is that firms gain value in the eye of stakeholders when they engage in environmentally responsible programs; furthermore, they can more easily recover from a crisis when stakeholders recognize their commitment to CSR (Klein and Dawar, 2004). Previous studies also show that, in some cases, CSR can be perilous, for example when companies engage in misconduct. Here, companies lose legitimacy and credibility when they are found to instrumentally use CSR, such as in the case of greenwashing (Pashupati et al., 2002; Vanhamme et al., 2015; Wagner et al., 2009). Our study clarifies the contrasting results obtained in the literature, suggesting that greenwashing is particularly risky for companies, and it can be punished by stakeholders because of the lie and the violation of the expectancy this implies. Moreover, the extant literature does not explicitly deal with which greenwashing cases are more detrimental to a firm's value. In this study, we have undertaken a systematic analysis of heterogeneous greenwashing cases, building on previous studies (De Jong et al., 2020; Siano et al., 2017; Vanhamme et al., 2015). These studies reveal that the various types of greenwashing deception may not be all equally detrimental to intention to invest. The present study contributes to a greenwashing typology with its

categorization of four types (i.e. *falsification, information selection, deceptive manipulation* and *attention diversion)*. We defined the types based on the form of the deception (active or passive), as well as the level of the deception (at the communication or the action level). By developing a greenwashing typology based on the form and the level of the deception, this study offers a new and more comprehensive understanding of the phenomenon.

*The effects of greenwashing.* First, we emphasize a key feature of greenwashing, one which makes its use dangerous for firms' value: the presence of a lie to stakeholders. Greenwashing consists of strategically deceiving stakeholders regarding environmental commitment and performance, because what the firm communicates is voluntarily incongruent with its actual behaviour. Thus, the first aim of our study was to empirically test the different effects of greenwashing and corporate environmental misbehaviour on stakeholders' intention to invest. By making this distinction explicit, this study isolates the stakeholders' negative reaction to the lie from the effects caused by the misbehaviour itself, rather than to a firm's misconduct per se. This facilitates a deeper understanding of stakeholders' reactions to greenwashing. The results of Study 1 are consistent with previous research, in that they indicate that poor environmental performance and misbehaviours are counterproductive to attracting investors. In other words, an environmental misbehaviour is detrimental to intention to invest (Long and Rao, 1995). By further building on these findings, Study 1 shows that greenwashing amplifies the negative effect of the misbehaviour, in that it might further decrease intention to invest. Our intuition is that greenwashing is punished more in terms of intention to invest because of the lie it implies, meaning that stakeholders are more likely to avoid greenwashing firms.

While previous studies have mainly focused on intentions related to consumption, we have adopted a new and relevant perspective, investigating how greenwashing might affect the value of a firm in terms of attracting investment. We found that, when individuals are asked to think about possible investments, they tend to react more negatively to greenwashing than an environmental misconduct. This disconfirms the buffering effect of pre-allegation CSR communications found in the consumer domain (De Jong et al., 2017; Vanhamme et al. 2015). When investing, individuals might evaluate greenwashing in a different way compared to when they are buying or consuming products. Consumers, indeed, are persuaded that CSR communications are mere promotional tools with some degree of truthfulness, and they tend to punish environmental misbehaviour or poor environmental performance more than greenwashing (De Jong et al., 2017; Vanhamme et al., 2015). Prior results suggest that allegations of an environmental misbehaviour that follow an internal CSR communication have less of a negative impact on consumers' attitudes compared to the case of a company that does not proactively engaged in CSR (De Jong et al., 2017; Vanhamme et al., 2015). Conversely, when individuals consider investing in a company that is accused of greenwashing, they might feel a higher degree of contract violation, and may decide not to invest in such a company.

*The typology of greenwashing lies.* Previous studies have emphasized the need for a more nuanced understanding of the greenwashing phenomenon. For instance, De Jong et al. (2020) have emphasized the risk of analysing greenwashing in an overly simplistic way, for example by simply comparing companies that greenwash to those that do not. They found that greenwashing can take the form of half-lies; this is a phenomenon that occurs when the company does in fact partially achieve its CSR objectives, yet is vague in communicating any such achievements, thereby giving the impression that it has met

its objectives. Our study expands on this perspective, investigating, through an experimental design approach, how true and detailed green communications can mask unrelated poor environmental performance (i.e. passive deception). This result is particularly relevant, since poor environmental performance is often unrelated to green communications (Vanhamme et al., 2015). Although stakeholders appear to be more tolerant of the phenomenon of information selection, passive greenwashing deception at the action level (i.e. attention diversion) elicits the same reactions as active greenwashing deceptions; therefore, it might be particularly harmful to companies. In our experiment, we employed a communication regarding a donation to an environmental cause, a practice that is widely adopted by companies to demonstrate their commitment to the environment. However, this practice runs the risk of becoming counterproductive if it is not associated with good overall green performance, even when said performance is unrelated to the domain of the donation.

We also found that deceptive manipulation (Siano et al., 2017), can be even more dangerous. As exemplified by the Volkswagen Diesel scandal, business practices can be intentionally manipulated with the aim of making tangible statements regarding the sustainable attributes of a product. From this new type of greenwashing, a distinction has emerged: greenwashing at the action-level and at the communication-level. The results of our third experiment amplify our understanding of this recent form of greenwashing on a company's value, showing that when greenwashing occurs through actions, individuals tend to be firm-avoidant. Action-level passive greenwashing deceptions are not tolerated by stakeholders, who react to them in the same way as they react to active greenwashing deceptions. Even though, in the case of attention diversion, the company is not fabricating an untruth, individuals nevertheless avoid such firms.

The action level of our categorization highlights the shift of companies' focus from talk to walk, and amplifies the greenwashing domain from communication to business practice. Therefore, this new typology is particularly interesting, because it emphasizes how greenwashing is currently evolving into different and more sophisticated practices. Indeed, today's firms have developed a number of techniques to present "'a mask of virtue' to cover actual deceit, shallow CSR practices or minimal policy implementation" (Moratis, 2017, p. 241-242). The battle to appeal to customers and investors through environmental commitment occurs not only through misleading words, but also through misleading and costly actions devoted to persuading stakeholders.

Notably, each green 'mask' appears to have a distinct effect on stakeholders. Hence, there is no greenwashing as such in a generalized way, but variations of 'greenwashings', each one constituted by a specific mix of deception type and level, and with its own implications in terms of stakeholders' reactions. Our study constitutes an additional step, indicating the variety of greenwashing forms that are currently developing as a response to the increased scrutiny and pressure that firms are experiencing (Delmas and Cuerel Burbano, 2011).

*Greenwashing and intention to invest.* The present research also offers nuanced results on how greenwashing affects stakeholders in an investment setting. Previous studies have mainly focused on consumers (Nyilasy et al., 2014; Parguel et al., 2011; Vanhamme et al., 2015), but nowadays companies are actively seeking alternative forms of financing. Additionally, it is now easier for ordinary individuals to participate in the stock market thanks to new technologies (Aspara and Chakravarti, 2015). The participation of non-professional investors is growing fast (Elliot et al., 2014; Nilsson, 2008). What is more, these investors are particularly interested in companies' involvement in CSR, because they believe that CSR-engaged companies can offer long-

term returns (Jansson and Biel, 2011). For this reason, companies might run the risk of instrumentally utilizing green claims to project a certain image to attract these non-professional investors, rendering the CSR merely symbolic, and not factual. This tendency has traditionally been reinforced by the asymmetry of information between firms and stakeholders, the latter being mostly informed about corporate practices and performance by the firm itself. As a consequence, firms might be tempted to fabricate false green claims, rather than engaging in fair environmental management. However, the "temptation to greenwash" is nowadays under the scrutiny of the watchdog role of activists, NGOs and the media, who seek out and report corporate misbehaviours, especially if salient and strong brands are involved (Stäbler and Fischer, 2020). Activists' and NGOs' access to the public has increased through the use of internet-based platforms, which have significantly decreased the costs and time required to share and acquire information. Green activists and the media now possess an easy, inexpensive tool to spread information about greenwashing scandals. As investors become increasingly interested in environmental issues, activist groups and the media become more powerful, and can now exert more pressure on companies (Delmas and Cuerel Burbano, 2011). Notably, it has been estimated that a news item presented via only 4 U.S. high-reach media outlets can cause a negative market reaction (Stäbler and Fischer, 2020). Therefore, the media and NGOs offer a new threat of public exposure to companies that greenwash.

The results of our study shine a light on the detrimental effect of green lies on intention to invest. This might deter some companies from making misleading claims about their environmental performance. Therefore, this article serves as a warning against the use of greenwashing, as it increases the severity of the contract violation, leading to damage in terms of shareholder value. Whilst it may be even more tempting for companies to

not even communicate poor environmental performance, this choice would nevertheless represent a risky and unrewarding solution for companies. From an ethical perspective, it is preferable to be transparent and to communicate both the company's environmental accomplishments and the critical issues, as well as any still-unresolved problems. The voluntary disclosure of negative information might, indeed, even be rewarded, because stakeholders might perceive the company as honest (Jahn and Brühl, 2019). For example, in its CSR report (Ferrero Group CSR report, 2017), the Ferrero Group discussed not only its achieved results and its goals on track to succeed, but also those sustainable objectives which were then not as yet achieved. Ferrero's dedication to transparency was also recognized by Greenpeace (Greenpeace report "The Final Countdown", Fiset, 2018).

## 5. Limitations and future research

Despite that fact that our results are in line with our expectations, and therefore the hypotheses cannot be rejected, the experimental method and the sampling procedures employed entail various limitations. Firstly, experimental designs are particularly suitable for testing causal relationships by controlling for extraneous variables, but they can nevertheless be artificial and possess limited generalizability (single case, limited documents, not actual behaviour). While we made great efforts to create stimuli that are realistic (developed according to real cases), the external validity of our experiments could be debated, as an individual's intention to invest may not be generalizable to a (professional) investor's intentions and decisions. To overcome the limitations of the experimental design approach, further investigations should be conducted on secondary data from stock exchanges, or by running field studies, in order to shed more light on if and how actual investors react to greenwashing in real contexts.

Secondly, the panel sample we employed from MTurk might not be fully representative of the private investor population. Although MTurk has been successfully used to investigate investors' behaviours, our lack of knowledge of the investment literacy, expertise and investment proneness of our sample limits the generalizability of our results to real active investors. It may be that participants make investment decisions differently and act in a more risk averse way than actual non-professional investors. Future studies might therefore usefully survey professional investors to complement this work.

Another relevant aspect to consider in future investigations of greenwashing is the centrality of the notion of scandals in relation to the core business of the company. In CSR research, the fit between the CSR activity and corporate business is considered to be one of the main factors influencing the success of CSR (Gupta and Pirsch, 2006). In greenwashing, the "centrality" of the scandal might be particularly severe, aggravating the negative effects of greenwashing. Future studies should investigate this aspect of centrality to provide a more comprehensive picture of this phenomenon.

Future research should also consider other stakeholders in order to establish how perceptions of greenwashing vary across stakeholders' groups, other than consumers. For example, another understudied but relevant perspective might involve employees, organizational customers or suppliers, and how they react to greenwashing. To our knowledge, currently no study addresses this topic in a B2B context. This lack of B2B-related studies is somewhat surprising, given the fact that the majority of greenwashing scandals are not directly related to a firm's own operations, but rather to its supply chain (for example, Apple and Foxconn, Mattel and its Chinese manufacturer, Hoyt et al., 2008). Future studies should therefore address this gap by applying a broader perspective on greenwashing.

Finally, the personal characteristics of stakeholders might also play a role in assessing greenwashing. Current literature on Socially Responsible Investments (SRI) depicts SRI as a heterogeneous movement (Sandberg et al., 2009), in which the profitability of an investment remains a strong driver (Nilsson, 2008). However, some investors' personal characteristics seem to affect the amount of money invested in responsible funds (Nilsson, 2008). Future research could examine whether an investor's own environmentalism increases their avoidance of companies involved in greenwashing, and whether this also applies when the company offers promising investment returns. It would also be interesting to ascertain whether an investor's prior experience in investing decreases or increases intention to invest. The literature suggests that non-professional investors (investors with low expertise) make investment choices in a different way compared to professional investors, because the former tend to overestimate the consequences of a scandal in the long run (Jain et al., 2015), and are more prone to affective bias when making investments (Aspara and Tikkanen, 2010). Therefore, for a better understanding of post-greenwashing private investment variations, further research is required.

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**Table 1: Proposed typology of deceptive forms of greenwashing**

| | | Type of Greenwashing deception | |
| --- | --- | --- | --- |
| | | *Active* | *Passive* |
| **Level of greenwashing** | *Communication level* <br><br> *(talk)* | Falsification <br><br><br> (The company produces **false environmental communication**s about its environmental efforts) | Information selection <br><br><br> (The company **selects its environmental communications** to obscure critical issues) |
| | *Action level* <br><br> *(walk)* | Deceptive manipulation <br><br><br> (The company **manipulates business practices** to support its environmental communications) | Attention diversion <br><br><br> (The company is engaged in **environmentally-friendly initiatives** to shift attention from critical issues) |

## Table 2: Experimental conditions of Study 1

**Environment-Related Communication**

| | | *Present* | *Absent* |
|---|---|---|---|
| **Misbehaviour** | *Present* | Greenwashing<br><br>(respondents are exposed to a **corporate environmental communication** and to a news item about an **environmental misbehaviour**) | Environmental Misbehaviour<br><br>(respondents are exposed to a **corporate communication –not environmental** – and to a news item about an **environmental misbehaviour**) |
| | *Absent* | Environmental Communication<br><br>(respondents are exposed to a **corporate environmental communication** and a news item about **company progress** – no environmental misbehaviour) | Control group<br><br>(respondents are exposed to a general **corporate communication –not environmental** – and a news item about **company progress** – no environmental misbehaviour) |

**Table 3. Main statistics for all experiments.**

**Study 1**

|  | Greenwashing | Environmental misbehaviour | Environmental communication | Control group |
|---|---|---|---|---|
| *Intention to invest* | 2.96(1.45) | 4.52(1.38) | 5.54(1.77) | 5.36(.67) |

**Study 2**

|  | Active greenwashing | Passive greenwashing |
|---|---|---|
| *Intention to invest* | 2.95(1.38) | 3.79(1.39) |

**Study 3**

|  | Active greenwashing | | Passive greenwashing | |
|---|---|---|---|---|
|  | Falsification | Deceptive manipulation | Information selection | Attention diversion |
| *Intention to invest* | 3.32(1.83) | 3.20(1.69) | 4.58(1.20) | 3.35(1.59) |