



RESEARCH ARTICLE

The Impact of Environmental Advertising on Consumer Skepticism: The Moderating Role of Environmental Involvement

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ARTICLE INFO	ABSTRACT
Received: Sep 24, 2024 Accepted: Oct 28 2024	The aim of this research is to study the impact of environmental advertising elements on consumer skepticism. The moderating role of the degree of environmental involvement is also studied. An experimental field study was carried out, using a full factorial design and face-to-face surveys. A total of 480 questionnaires were completed, and the ANOVA method was used to test moderating effect. The results show that skepticism varies according to color (green vs. gray), evocative semantics (durably vs. simply), guilt (with vs. without) and exaggeration (with vs. without). Advertisers need to be aware of the extent of skepticism surrounding environmental advertising. It is essential to use the color green in a relevant way, associating it with concrete, tangible evidence of the company's environmental involvement. Companies need to adopt a more positive and encouraging approach, focusing on environmental benefits and concrete actions.
Keywords Environmental advertising Color Semantics used Guilt-tripping claims Exaggerated claims Skepticism Environmental involvement	
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INTRODUCTION

In the current context, concern for the environment has become a priority for both companies and consumers (Lopes et al., 2024). Many companies have integrated environmental marketing practices to address these concerns (Mahmoud et al., 2024). At the same time, consumers are attaching increasing importance to the ecological implications of corporate actions. In this context, environmental communication plays a crucial role in reassuring consumers that companies' production processes respect the environment.

Environmental advertising is therefore essential for promoting environmentally friendly practices, informing consumers about companies' green initiatives, and encouraging the adoption of sustainable products and eco-responsible behavior. However, it can also generate skepticism when consumers doubt the authenticity of advertising messages and the real motivations of companies. It is therefore imperative for the latter to design credible environmental advertising (Nguyen et al., 2019).

Marketing professionals strive to persuade consumers to buy their products and services through advertising (Tee et al., 2022). However, despite growing demand for eco-friendly products, consumer skepticism about companies' environmental claims is growing (Goh & Balaji, 2016 ; Adil et al., 2024). Some companies have been accused of making false claims about the environmental impact of their activities or the ecological quality of their products. This practice, known as "greenwashing" (Schmuck et al., 2018), has led to increased consumer distrust of environmental advertising, perceived as misleading and unclear. This phenomenon has led to widespread distrust of environmental claims, creating what is known as green or environmental skepticism (Adil et al., 2024).

In this context, the present research focuses on understanding consumer skepticism towards environmental advertising, seeking to clarify this concept which is still relatively ambiguous in the literature. Few studies have focused on this specific topic, despite the abundance of research on environmental advertising in general. Some research has explored this skepticism with varying aims (Leonidou & Skarmeas, 2017; Nguyen et al., 2019; Farooq & Wicaksono, 2021). However, the majority of these studies have focused either exclusively on examining the visual elements of advertising creatives (Benoit-Moreau et al., 2011; Lim et al., 2020; Boncinelli et al., 2023), or on analyzing the characteristics of advertising claims (Carlson et al., 1993) to assess their impact on consumer skepticism towards environmental ads. This article seeks to fill this gap by examining the combined effects of these elements on consumer skepticism in Tunisia, in line with the studies of Burton and Lichtenstein (1988), who suggest that consumer perception of an advertising campaign should be assessed by considering all creative elements in a specific context, rather than each element in isolation. The resulting research questions are :

- What advertising elements generate skepticism about environmental advertising?
- What is the effect of advertising elements on consumer skepticism of environmental advertising?
- Does the degree of environmental involvement moderate the relationship between environmental advertising and skepticism?

We therefore seek to investigate which elements of environmental advertising, such as color, semantics used, guilt-tripping and exaggerated claims, are identified as significant triggers of skepticism among consumers exposed to these messages. We also attempt to test the moderating effect of the degree of environmental involvement in the relationship between advertising elements and skepticism.

By operationalizing the results of this study, business leaders will have the tools to improve the communication of their environmental actions. This approach aims to optimize advertisers' messages and boost consumer confidence in environmental communications, especially with the rise of greenwashing, a phenomenon that is having an increasingly negative impact on consumer perceptions, attitudes and purchasing (Furrow, 2010).

With this in mind and in order to consolidate our analysis, the present work will be structured around three points. In the first part, we will propose a delimitation of the theoretical framework within which our research falls. In the second part, we will also outline and justify the methodological choices adopted for this study, detailing the experimentation, the stimulus selection process, as well as the sampling and data collection methods. Our results will be developed in a third section. The main theoretical and managerial interests, as well as the limits and perspectives of our work, will be discussed in conclusion.

1. THEORETICAL FRAMEWORK

1.1. Environmental advertising

Environmental advertising emerged in the 1970s in response to growing awareness of environmental issues, stimulated by the economic recession (Bergquist & Näsman, 2023; Lopes et al., 2024). Companies are deploying a variety of strategies to demonstrate their involvement to the environment, including environmental advertising, which incorporates environmental claims and seeks to integrate ecological, social and economic considerations into all components of the marketing mix, including advertising (Kemper and Ballantine, 2023). This type of communication is disseminated through a variety of media and plays a central role in raising public awareness of environmental issues. It also helps stimulate market demand for environmentally-friendly products. The term “environmental advertising” encompasses the promotion of products manufactured in an environmentally-friendly manner, notably from recycled or recyclable materials, as well as the communication of the company's overall involvement to the sustainability of certain brands. For their part, Santa & Drews(2023) specify that environmental advertising is intended to promote the pro-environmental dimensions of products in order to increase their sales.

There are several dimensions to the evaluation of the characteristics of environmental advertising messages. Firstly, it looks at the nature of the environmental advertising appeals used. Secondly, it analyzes the structure of these messages, encompassing aspects such as message formulation,

integration of environmental claims, message clarity and inclusion of an eco-label (Liu & Liu, 2020). Finally, the evaluation also looks at the execution elements of these advertising messages, encompassing both verbal and non-verbal signals (Wagener, 2024).

1.2. Skepticism

Many companies show a sincere interest in environmental issues (Zhang et al., 2021). Yet, alongside this involvement, a growing distrust is spreading among the public, who often perceive these approaches as mere profit and propaganda strategies. This distrust is rooted in the way some companies disclose unclear, ambiguous or evasive information about their products via their environmental advertising (Leonidou & Skarmeas, 2017), which has an impact on the overall credibility of these ads, keeping it at a relatively low level (Lima et al., 2024). The concept of “greenwashing” also plays a role in increasing consumer skepticism. This practice, which involves an insincere demonstration of environmental involvement, raises doubts about the credibility of companies, which can translate into widespread skepticism towards all environmental claims. At the same time, brands that are genuinely invested in preserving the environment face major challenges in communicating with an increasingly skeptical public: a situation that risks hampering the development and production of genuinely environmentally-friendly products (Qayyum et al., 2023). Thus, skepticism, manifested as distrust and doubt towards an assertion or proposition, occupies a central place in marketing research due to its impact on advertising effectiveness and consumer trust in brands. Environmental claims, which are often difficult to verify, tend to generate mistrust and disbelief among consumers towards the actions of environmental marketers. These claims are thus frequently greeted with skepticism and are susceptible to misinterpretation (Carlson et al., 1993; Lee & Cheong, 2024).

The literature suggests that consumers are generally skeptical about the credibility of environmental claims made by advertisers. Thus, skepticism constitutes a form of disbelief on the part of consumers in environmental claims that are difficult to verify, and raises doubts about the sincerity of marketers and the true environmental responsibility of companies (Adil et al., 2024).

Several researchers have highlighted different characteristics of advertising creative that can trigger skepticism among consumers depending on the contexts studied (Benoit-Moreau et al., 2011). These features are of crucial importance to advertisers, as they can have a negative impact on consumer perceptions.

1.3. The triggering factors of skepticism

Color manipulation and environmental advertising skepticism

In recent decades, the consumption of eco-friendly products has often been encouraged by advertising that makes environmental claims using the color green to signal reduced environmental impact. Indeed, consumers often associate the color green with a reduced environmental impact of products (Lim et al., 2020; Boncinelli et al., 2023). In contrast, Benoit-Moreau et al, (2010) have shown that the use of green, as opposed to grey, in environmental advertising generates a higher level of skepticism. The color green is commonly associated with the environment, ecology and sustainability, which is frequently used in environmental advertising. However, this association can lead consumers to be more critical and skeptical, as they may perceive an attempt at manipulation or “greenwashing” on the part of advertisers (Benoit-Moreau et al., 2010). On the other hand, the color gray is generally associated with industrial concepts and robustness, which doesn't arouse as much skepticism in the context of environmental advertising.

Elhajjar & Dekhili (2018) have also highlighted the negative effects of using green color in an environmental advertising poster (compared to a poster without green color), showing that advertising including green color generates a higher level of doubt and skepticism than that which does not use it. Other research has also shown that the environmental communication efforts of companies that make excessive use of the color green generate skepticism among consumers (Benoit-Moreau et al., 2011; Lim et al., 2020; Boncinelli et al., 2023). Furthermore, the abuse of the color green in environmental advertising is often perceived as suspicious behavior associated with greenwashing, fueling consumer skepticism (Tee et al., 2022). Excessive use of this color in advertising can reinforce perceptions of

greenwashing and engender erroneous ecological projections, thus arousing consumer skepticism (Lim et al., 2020; Boncinelli et al., 2023).

Furthermore, other research has shown that the excessive use of the color green can have a negative impact on consumer perception, making environmental advertising manipulative in their eyes, thus reinforcing their skepticism (Benoit-Moreau et al., 2011; Elhajjar & Dekhili, 2018). This overuse of the color green is also likely to create artificial ecological representations, feeding skepticism (Lim et al., 2020; Boncinelli et al., 2023). This misuse of the color green is also likely to create artificial ecological representations, thus feeding skepticism (Lim et al., 2020; Boncinelli et al., 2023). Based on the above, we propose that the color green has a positive impact on consumer skepticism. Accordingly, we propose to test the following hypothesis:

H1: *Environmental ads that show dominance of the color green elicit a higher level of skepticism than those that use the color gray.*

The sustainable mobilization of semantics and skepticism about environmental advertising

The semantics used in environmental advertising are varied and include different terms that consumers associate with environmental issues such as “biodegradable”, “ecological”, “green”, “natural”, “organic”, “recycled” and “sustainable” (Benoît-Moreau et al., 2010). While some of these terms are technical (e.g. biodegradable and organic), others are ambiguous (e.g. ecological and green) and subject to many different interpretations, and often used in a generic context (Santa & Drews, 2023). Most consumers are unable to identify the difference between more or less technical terms and, as a result, misinterpret the actual environmental impact of associated products (Schmuck et al., 2018; Santa & Drews, 2023). However, it is important to note that the use of these qualifiers in advertising messages can create ambiguity and potentially disrupt the way consumers perceive advertisers and their products.

According to Carlson et al (1993), the more ambiguous and unclear a company's environmental advertising messages are, the more skeptical consumers are and the higher the risk of perceived greenwashing. Other research has also explored the use of ambiguous, or double-meaning, semantics, in particular, the term “sustainably” in environmental advertising (Benoît-Moreau et al., 2011 ; Kim et al., 2016). The results of their studies highlighted tensions and contradictions in consumer perceptions, highlighting the frequent ambiguity and variability of interpretations surrounding this semantics associated with sustainability. Indeed, the term “sustainably” in environmental advertising can have a double meaning. On the one hand, it can be used to mean that the product or service is designed to last a long time (material durability). On the other hand, it can also be used to connote environmental sustainability, indicating that the product or service is manufactured to have minimal long-term environmental impact (Kim et al., 2016). What's more, according to Benoît-Moreau et al.(2011), consumers show a higher level of skepticism towards environmental advertising that uses the term “sustainably”, questioning both its real meaning and the company's true commitment to sustainability, as opposed to those that use the term “simply”. So we propose the following hypothesis:

H2: *Environmental ads using the semantic “sustainably” elicit higher values of skepticism, than those using the semantic “simply”.*

The use of guilt in advertising claims and skepticism about environmental advertising

Guilt is considered to be a complex emotional reaction characterized by a combination of negative emotions expressed by individuals, including feelings of regret, remorse and personal guilt (Chédotal et al., 2017). Environmental advertisers often use guilt-based strategies to encourage consumers to adopt environmentally-friendly behaviors (McCarthy, 2024). While this strategy can capture consumers' attention, it also carries the risk of provoking negative reactions and emotions such as anger, annoyance and irritation (Niehoff et al., 2023). Moreover, it has been shown that appeals to guilt have a negative influence on the perceived credibility of advertisements (Kao & Du, 2020). Jimenez (2008) has also shown that guilt-tripping claims has a negative influence on consumer perceptions by generating skepticism. In line with this, other studies have shown that the use of guilt in environmental claims can generate negative reactions from consumers, provoking their skepticism and thus compromising the effectiveness of the message (Chédotal et al., 2017; Kim et al., 2021; Haj-Salem et al., 2022; van Breda, 2023). For Pelozza et al. (2013), guilt-tripping messages are perceived as exaggerating individual

responsibility for protecting the environment, which leads to a rejection of these messages. Coleman et al, (2020) add that such claims generates skepticism among consumers, which can have a negative impact on their perception of environmental advertising. Therefore, appeals to guilt can mitigate the efforts of environmental communication, as an overly guilt-inducing message can damage the perception of this communication and generate skepticism among consumers (Peloza et al., 2013; Coleman et al., 2020; Sailer et al., 2022; Niehoff et al., 2023; van Breda, 2023). We propose to test the following hypothesis:

H3: *Guilt-inducing environmental advertisements elicit higher values of skepticism than non-guilt-inducing ones.*

The use of exaggeration in advertising and skepticism about environmental advertising

Exaggeration is a technique commonly used in advertising to attract public attention and generate interest in a product. In the field of marketing communication, the majority of authors recognize that exaggeration must absolutely be banned as it is associated with lying, whether it is exaggeration by metaphor or by perfecting reality (Yu, 2020). Some companies exaggerate their green credentials when in fact they are not. This tendency to exaggerate often distorts the truth and creates expectations that may exceed actual product performance (Basso et al., 2023 Seberíni et al., 2024). Furthermore, exaggerated environmental claims are perceived as manipulative by consumers, as they form part of a commercial strategy supported by marketing techniques. Furthermore, using ecology to exaggerate the environmental qualities of a product creates an impression of manipulation, leading to skepticism and a negative perception of advertising (Furlow, 2010). As a result, this leads to a crisis of confidence that poses a challenge for marketers, advertisers and manufacturers as consumers lose confidence in environmental advertising and become more skeptical of it. In short, most authors agree that the growing skepticism of consumers towards environmental advertising is mainly attributable to the tendency of certain companies to disseminate misleading and exaggerated environmental claims (Carlson et al., 1993; Seberíni et al., 2024). Our hypothesis to be tested is as follows:

H4: *Exaggerated environmental advertisements elicit higher values of skepticism than non-exaggerated ones.*

1.3.5. The degree of environmental involvement and skepticism towards environmental advertising

Environmental involvement refers to the interest, concern and involvement of individuals in protecting nature. Minton & Rose (1997) define it as 'the intensity of personal interest in and involvement to the natural and human environment'. In the field of environmental advertising, the impact of advertisements on consumer skepticism can be modulated by various factors, including their involvement (Abd Rahim et al., 2012; Krstić et al., 2021). In this regard, several studies have explored the moderating role of this involvement in consumers' response to environmental advertisements (Lima et al., 2024).

Research has provided significant empirical evidence on the effect of consumers' environmental involvement on their skepticism towards environmental advertising (Shin et al., 2017; Schmuck et al., 2018 ; Grebmer & Diefenbach, 2020; Krstić et al., 2021; Mahmoud et al., 2024). These studies show that consumers who are deeply involved and well-informed about ecological issues are more likely to assess the credibility of environmental claims and, as a result, are generally more sceptical than those with less involvement. The results of Schuhwerk & Lefkoff-Hagius (1995) indicate that highly involved consumers pay more attention to environmental claims than less involved ones. Patel & Chugan (2015) found that consumers who are highly involved in environmental issues have a greater ability and interest in assessing the credibility of environmental claims, making them more skeptical than those with less involvement. Shin et al. (2017) also argue that consumers are more receptive to environmental advertising when they are highly involved in environmental issues. Thus, in-depth knowledge of environmental issues makes it easier for consumers to detect false advertising claims, which reinforces their skepticism (Schmuck et al., 2018).

In addition, environmental involvement influences consumers' reaction to environmental advertising. Abd Rahim et al. (2012) have shown that highly involved consumers are more likely to perceive

'greenwashing' practices and to consider such advertising as misleading, thus developing greater skepticism. Conversely, low-involvement consumers are generally less sensitive and less inclined to develop strong skepticism. Grebmer & Diefenbach (2020) stress the importance of taking consumers' environmental involvement into account when designing advertising messages for ecological or sustainable products. Different responses to environmental advertising may emerge depending on the different levels of environmental involvement (Lee & Cho, 2022). It is therefore essential to examine the impact of the degree of environmental involvement and its relationship with the elements of environmental advertising and skepticism, and to study its moderating role in this relationship (Tee et al., 2022). Accordingly, the following hypotheses are proposed:

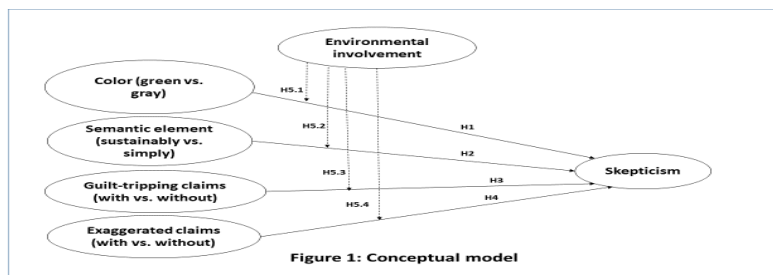
H5: *The consumer's degree of environmental involvement moderates the relationship between advertising elements and skepticism about environmental advertising.*

H5.1: *The degree of environmental involvement moderates the relationship between color and skepticism about environmental advertising.*

H5.2: *The degree of environmental involvement moderates the relationship between the semantic element and skepticism towards environmental advertising.*

H5.3: *The degree of environmental involvement moderates the relationship between guilt-tripping and skepticism about environmental advertising.*

H5.4: *The degree of environmental involvement moderates the relationship between exaggerated claims and skepticism about environmental advertising.*



2. METHODOLOGY

In order to study the effects of advertising poster elements (color, semantics, guilt in claims and exaggeration in claims) on skepticism, an experimental field study with a full factorial design was considered the most appropriate and sensible.

2.1. Experimental design

Choice of product and brand name

To carry out our study, we constructed advertising stimuli. Two main motivations guided the selection of a category of products to be retained for the study of skepticism towards environmental advertising : the type of product concerned should be a product capable of arousing the interest of the general public and demonstrating a significant presence in environmental advertising, and be capable of being exploited as a stimulus with respondents (Elhajjar & Dekhili, 2018). The work was carried out through a face-to-face questionnaire and involved 45 participants (25 women and 20 men). Respondents were approached on different days of the week at different times. Two main questions were asked of each respondent: 1) Which of the products do you prefer to appear most often in environmental advertisements, and 2) Please list the products that you feel are most suitable for environmental advertisements?

Each type of product mentioned by a respondent was entered into the frequency analysis. Of all the product categories mentioned, the most frequently mentioned was 'Ecological air conditioners' (28.1%), followed by other product categories such as : 0% CO2 deodorants (16.5%), Reusable plastic water bottles on a par with ecological cars (12.5%), Organic food products (8.5%), Ecological detergents (7.8%), Reusable bags (5.5%), Ecological washing machines (4.6%) and Biodegradable fabric clothing.

In view of these results, we thought it wise to adopt the air-conditioning product category as the subject of experimentation, since it received the highest frequency of response from respondents (28.1%). What's more, the majority of manufacturers have incorporated environmental issues into their communication strategy to promote energy-efficient models (Aykut, 2020). However, many of the environmental advertisements for these products have met with strong skepticism among consumers, due to numerous greenwashing advertising practices (Erden & Erkartal, 2019).

Then, after the air conditioner has been selected, the same participants (25 women and 20 men) were asked to suggest a fictitious brand name to make up a list of unknown brands for 'air conditioners'. From their suggestions, four names were selected : Climazur, Brise Verte, De Bon Air and Inovair. A face-to-face survey was then conducted with 125 respondents (69 women and 56 men) to select a fictitious brand name from these four options. The majority of participants chose the name 'Brise Verte', which we therefore considered to be the most appropriate and relevant.

The creation of advertisements

In order to study how the elements of environmental advertising affects consumer skepticism about this advertising, the experimental treatment of the poster was to vary according to different criteria. The ad design was carried out by a professional designer who created sixteen advertising posters, which varied according to two levels of color (green vs. gray), two levels of semantics (sustainably vs. simply), two levels of exaggerated content (with vs. without) and two levels of guilt-inducing content (with vs. without). These sixteen versions of the site display the same content but vary in terms of color, semantics and content. According to previous studies (Pelet & Papadopoulou, 2012) color was manipulated at two levels (colored vs. non-colored) using green as the most important color for the colored poster version, and prevalence of grey for the low color visual appeal poster version. Similarly, the semantics relating to sustainable development were manipulated at two levels (sustainably vs. simply) using a version of the poster with 'sustainably' textual information or a version with 'simply' textual information (Parguel & Johnson, 2021). In terms of advertising content, the experimental poster was also manipulated: 1) two levels in relation to guilt-inducing content (with vs. without) (Haj-Salem et al., 2022; Kim et al., 2021) , 2) two levels in relation to exaggerating content (with vs. without) (Nguyen et al., 2019; Yu, 2020). A 'between-subjects' design was used, in which each respondent is exposed to a single advertising poster (Seggie et al., 2013).

The experimental factorial design

In our experiment, we manipulated four elements of advertising and examined their impact on skepticism. Each element was manipulated at two levels. A full factorial design of $2 \times 2 \times 2 \times 2 = 16$ variations of advertising posters was therefore employed, as it represents the most appropriate design for studying the effects of two or more independent variables simultaneously (Field, 2013). Consequently, the present research aims to study the effect of the four advertising elements in sixteen different modalities encompassing all conceivable associations between the different levels of each factor, while keeping the rest of the ad identical.

Verification of the experimental manipulation

A pre-test was carried out with 80 individuals, to ensure that the ads were properly understood and that the elements manipulated were correctly mobilized. Data collection was carried out using a face-to-face questionnaire in the street during September 2023 in the Tunis capital region. The perceived relevance of the colors was measured using a 7-point differential semantic scale composed of four items (Till & Busler, 2000): 'not compatible/compatible'; 'bad choice/good choice'; 'bad combination/good combination'; 'not relevant/relevant'. Semantic manipulation (sustainably vs. simply) was checked using two items adopted from Schmuck et al. (2018): 'This statement is vague and unverifiable'; 'This statement is practically wrong'. The level of guilt was measured using the scale developed by Chédotal et al. (2017), which consists of 3 items: 'This advertisement makes me feel guilty'; 'This advertisement makes me feel very remorseful'; 'This advertisement makes me feel that I deserve to be blamed'. The degree of exaggeration was measured using the Pope et al (2004) scale, which consists of a single item: 'This ad seems exaggerated to me'.

Independent sample t-test analyses were carried out to verify the manipulation of the four advertising elements. The results obtained showed that participants perceived the manipulation of the advertising elements to be significantly different. For example, the results showed that participants who saw the green - coloured advertisement (\bar{X} green= 2.20; Standard deviation= 1.075) perceived less relevance of the color, in contrast to those who saw the grey advertisement (\bar{X} grey=3.40; Standard deviation=.632). The results also revealed that participants who were exposed to an advertisement with 'sustainably' semantics (\bar{X} sustainably= 3.90; Standard deviation= .876) rated the advertisement as vague, unverifiable and wrong to a higher degree than the advertisement with 'simply' semantics (\bar{X} simply= 2.30; Standard deviation= 1.059). In addition, participants who were exposed to an advertisement with a 'With guilt' claims (\bar{X} with guilt= 4.20; Standard deviation= 1.054) rated the advertisement as guilt-inducing to a higher degree than the advertisement with a 'Without guilt' claims (\bar{X} without guilt=2.00; Standard deviation= 1.476). Similarly, participants who were exposed to an advertisement with a 'With exaggeration' claims rated the advertisement as exaggerated (\bar{X} with exaggeration=4.40; Standard deviation=.516) to a higher degree than the advertisement with a 'Without exaggeration' claims (\bar{X} without exaggeration=2.60; Standard deviation=1.578).

Participants

The target population could be all Tunisian consumers likely to be exposed to environmental advertising posters. The choice of sample size was made in accordance with the recommendations of Peter (1981). The number of items used in the study was 21, while the manipulation of advertising elements generating skepticism generated sixteen experimental conditions (sixteen groups of subjects). We therefore need at least 480 completed questionnaires ($30 * 16 = 480$). The face-to-face survey seemed a natural and appropriate choice, dictated by the nature of our experiment and given that it offers the possibility of presenting visual elements such as advertising posters and of directly observing the respondent in his or her environment.

2.2. Measurement

Four items were used to measure skepticism towards environmental advertising, referring to the scale validated by several authors (Goh & Balaji, 2016). The measures of environmental involvement were adapted from previous empirical work by Tee et al, (2022).

Table 1: Environmental advertising skepticism scale and Environmental involvement scale

Item coding	Item
Environmental advertising skepticism scale	
Skep1	Most environmental claims on packaging labels and in advertising are true
Skep2	Because environmental claims are exaggerated, consumers would be better served if these declarations on labels and advertising were eliminated.
Skep3	Most environmental claims on packaging labels or in advertising are intended to mislead rather than to inform consumers.
Skep4	I don't believe most of the environmental claims made on packaging labels or in advertising.
Environmental involvement scale	
Imp1	Environmental issues are important to me
Imp2	I'm concerned about environmental issues.
Imp3	Environmental issues mean a lot to me.
Imp4	I'm interested in environmental issues.
Imp5	Environmental issues are significant for me

Given that the advertising items are the independent variables being manipulated and that the moderating variable environmental involvement is categorical in nature and based on a median distribution, the respondents will be divided into two groups (degree of environmental involvement: low vs. high). These allow us to use the analysis of variance (ANOVA) method to test the moderating effects of the degree of environmental involvement in the relationship between advertising elements and skepticism.

2.3. Conduct of the experiment

First of all, the researcher went out into the field so that the participants could answer the questionnaire in a natural environment without having to go to the laboratory. In addition, in order to obtain more accurate and honest answers, anonymity was ensured from the start of the survey. All experimental sessions were conducted by the researcher and all respondents were given identical instructions. Respondents were randomly assigned to one of the experimental conditions according to a well-established experimental protocol in which the researcher changed the questionnaire containing an advertising poster for another questionnaire with a different advertising poster after each completed questionnaire. In addition, in order to have a varied sample for the purposes of our experiment, it was agreed to proceed as follows: 1) spread the survey over the length of the day; 2) move from one area to another each day; 3) complete the questionnaire each day during the week and 4) change the streets every three hours.

3. RESULTS AND DISCUSSION

3.1. Testing the direct effect of advertising elements on skepticism

In order to test the effect of advertising elements, a four-factor ANOVA analysis was carried out. The results showed that skepticism varied according to color (green vs. grey), evocative semantics (lasting vs. simple), guilt (with vs. without) and exaggeration (with vs. without). Appendix 1 presents the respondents' degree of skepticism regarding each of the experimental conditions.

The results obtained reveal the presence of a significant impact of color on skepticism ($F=46.279$; $p=0.000 < 0.05$, $\text{Eta}^2=0.088$). Specifically, the results show that environmental advertisements using green color (\bar{X} Green color = 4.23) elicit higher values of skepticism than environmental advertisements using grey color (\bar{X} Grey color = 3.20). Consequently, *H1 is confirmed*. No significant interaction effects were found between color and other advertising elements.

The results obtained prove the presence of a significant impact of the semantic element on skepticism ($F=8.997$; $p=0.003 < 0.05$, $\text{Eta}^2=0.018$). Specifically, the results show that environmental advertisements using the semantic 'sustainably' (\bar{X} Semantic sustainably = 3.95) elicit higher values of skepticism than environmental advertisements using the semantic 'simply' (\bar{X} Semantic simply = 3.48). Therefore, *H2 is confirmed*. No significant interaction effect was found between the semantic element and the other elements of the advertisement.

Our results show that guilt-tripping has a significant impact on skepticism ($F=351.097$; $p=0.000 < 0.05$, $\text{Eta}^2=0.423$). Specifically, the results show that guilt-inducing environmental ads (\bar{X} The guilt-tripping claims = 4.84) elicit higher values of skepticism than non-guilt-inducing environmental ads (\bar{X} Non-guilt-based claims = 2.59). Consequently, *H3 is confirmed*.

The results also prove the presence of a significant interaction effect between guilt-inducing claims and exaggerated claims ($F=5.091$; $p=0.025 < 0.05$; $\text{Eta}^2=0.011$). Guilt-inducing and exaggerated environmental ads elicit the highest values of skepticism (\bar{X} The guilt-tripping claims+exaggerated claims = 5.92), followed by guilt-inducing and non-exaggerated environmental ads (\bar{X} The guilt-tripping claims+Non-exaggerated claims = 3.77), non-guilty and exaggerated environmental ads (\bar{X} guilt-free claims+exaggerated claims = 3.48), while non-guilty, non-exaggerated environmental ads elicit the lowest values of skepticism (\bar{X} guilt-free claims+Non-exaggerated claims = 1.69).

Table 2: Result of the effect of guilt-tripping on skepticism

	Dependent variable: Skepticism							
	F	P	Eta ²			Mean	Standard deviation	N
Guilt-ridden claims	351.097	0.000	0.423	With guilt-tripping claims	With exaggerated claims	5.92	0.719	120
Guilt-ridden claims *	5.091	0.025	0.011		Without exaggerated claims	3.77	0.917	120

Exaggerated claims				Total	4.84	1.217	240
			Without guilt-tripping claims	With exaggerated claims	3.48	0.905	120
				Without exaggerated claims	1.69	0.922	120
				Total	2.59	1.411	240

The results confirm the presence of a significant impact of exaggerated claims on skepticism ($F=228.792$; $p=0.000 < 0.05$, $Eta^2=0.324$). Specifically, the results show that exaggerated environmental ads ($\bar{X}_{\text{Exaggerated claims}} = 4.70$) elicit higher values of skepticism than non-exaggerated environmental ads ($\bar{X}_{\text{Non-exaggerated claims}} = 2.73$). Consequently, *H4 is confirmed*.

Table 3: Results of the effect of direct effect of advertising elements on skepticism

		Dependent variable: Skepticism					
		Mean	Standard deviation	N	F	F	Eta ²
Semantics	Sustainably	3.95	1.687	240	8.997	0.003	0.018
	Simply	3.48	1.752	240			
Color	Green	4.23	1.558	240	46.279	0.000	0.088
	Grey	3.20	1.751	240			
Exaggerated claims	With	4.70	1.322	240	228.792	0.000	0.324
	Without	2.73	1.526	240			

3.2. Testing the moderating effect of environmental involvement between advertising items and skepticism

In order to test the moderating effect of environmental involvement in the relationship between advertising items and skepticism, the moderator variable was recoded on the basis of a median distribution according to two modalities: high degree of environmental involvement vs. low degree of environmental involvement. In addition, analyses of variance (ANOVA) were performed in which the moderator variable was inserted as a fixed factor. Moderation is accepted if the interaction effect between the independent variable (advertising item) and the moderator variable (degree of environmental involvement) on the dependent variable (skepticism) is significant (Sharma et al., 1981).

The results of the moderation analysis showed no significant interaction between the color of environmental advertising and the degree of environmental involvement ($F= 0.006$; $p=0.936 > 0.05$; $Eta^2=0.000$). Hence, *H5.1 is invalidated*.

The absence of a significant interaction effect between the semantic element of environmental advertising and the degree of environmental involvement was demonstrated ($F= 0.580$; $p=0.447 > 0.05$; $Eta^2=0.001$). Hence, hypothesis H5.2 is invalidated.

The results also confirmed the presence of a significant interaction effect between guilt-tripping claims and the degree of environmental involvement on skepticism ($F= 26.833$; $p=0.000 < 0.05$; $Eta^2=0.053$). Hence, *H5.3 is confirmed*.

To further investigate the moderating effect of the degree of environmental involvement in the relationship between guilt-tripping claims and skepticism, the means of skepticism were presented according to guilt-tripping claims and degree of involvement. The results show that in the guilt-inducing environmental advertising condition, high-involvement participants are more skeptical of environmental advertising than low-involvement participants. Whereas, in the non-guilty environmental advertising condition, high-involvement participants are less skeptical of environmental advertising than low-involvement participants.

Table 4: Average skepticism by degree of involvement

		Level of involvement		Mean
Skepticism	Guilt-ridden claims	With	Low	4.21
			High	5.49
	Without	Low	2.64	
		High	2.56	

The results confirm the presence of a significant interaction effect between exaggerated claims and the degree of environmental involvement on skepticism ($F= 16.667$; $p=0.000<0.05$; $Eta^2=0.034$). *Hypothesis H5.4 is therefore confirmed.*

To further investigate the moderating effect of the degree of environmental involvement in the relationship between exaggerated claims and skepticism, the means of skepticism were presented according to exaggerated claims and degree of involvement. The results show that in the exaggerated environmental advertising condition, high-involvement participants are more skeptical of environmental advertising than low-involvement participants. Whereas, in the non-exaggerated environmental advertising condition, high-involvement participants are less skeptical of environmental advertising than low-involvement participants.

Table 5: Results synthesis ANOVA of the moderating effect of the degree of environmental involvement between exaggerated claims and skepticism

	Dependent variable	F	Sig	Eta ²
Exaggerated claims	Skepticism	223.354	0.000	0.319
Degree of environmental involvement		24.830	0.000	0.050
Exaggerated claims * Degree of environmental involvement		16.667	0.000	0.034

3.3. DISCUSSION OF RESULTS

Our results reveal that environmental ads dominated by the color green elicit more skepticism than those using the color gray. These findings align with previous research (Benoit-Moreau et al., 2011 ; Lim et al., 2020; Boncinelli et al., 2023), which has shown that the excessive use of green in environmental advertising engenders increased skepticism compared to other colors, notably gray. On the other hand, it has been shown that, due to the lack of clarity and ambiguity of the semantics it uses, environmental advertising engenders consumer skepticism. Thus, according to our results, the use of the term “sustainably” elicits a higher level of skepticism among consumers than the use of the term “simply”. Previous studies (Benoit-Moreau et al., 2010 ; Qayyum et al., 2023) have also observed similar reactions among consumers, generating distrust of double-meaning terms such as “sustainable”, “eco-responsible”, “environmentally friendly” or “natural”.

As for guilt-tripping ads, our results showed that they generate higher levels of skepticism than non-guilt-tripping ads. Our results corroborate the findings of previous studies (Jiménez & Yang, 2008; Monnot & Renniou, 2013; Pelosa et al., 2013 ; Kim et al, 2021 ; Coleman et al., 2020; Kao & Du, 2020; Haj-Salem et al., 2022; Sailer et al., 2022: Kim et al., 2023) which indicate that guilt-inducing ads arouse consumer skepticism.

In our study, we observed that exaggerated environmental ads provoke high skepticism, while less exaggerated ones elicit less distrust. Baum (2012) and Plec and Pettenger (2012) consider this type of advertising to be greenwashing, thus reinforcing skepticism. These findings corroborate previous work (Carlson et al., 1993 ; Furlow, 2010 ; Yu, 2020). Iovino et al. (2024) also found a positive correlation between exaggeration in advertising and increased negative perception of environmental advertising.

The results of our research highlight the moderating role of the degree of environmental involvement in the relationship between guilt-tripping claims and skepticism towards environmental advertising.

These results align with studies that have also identified the moderating link of the degree of environmental involvement in the relationship between guilt-tripping claims and skepticism towards environmental advertising (Schuhwerk & Lefkoff-Hagius, 1995; Patel & Chugan, 2015; Shin et al. , 2017, Grebmer & Diefenbach, 2020 ; Tee et al., 2022). Furthermore, our results confirmed the moderating role of the degree of environmental involvement in the relationship between exaggerated claims and skepticism. These results are consistent with other studies that have shown that highly involved individuals were more critical of exaggerations and expressed a higher level of skepticism towards these exaggerated environmental advertisements (Schmuck et al., 2018 ; Krstić et al., 2021; Grebmer & Diefenbach, 2020 ; Lee & Cho, 2022). On the other hand, the results of our study show the absence of a moderating effect of environmental implication between color and skepticism towards environmental advertising, as well as between the semantic element and consumers' skepticism towards environmental advertising. The explanation of these results can be attributed to the specific cultural context of our study, which takes place in Tunisia, as well as to the particular characteristics of our sample. However, it would be relevant to examine, in future research, the moderating effect of other variables such as individual characteristics, including environmental sensitivity and environmental education (Alhamad et al., 2023; Muralidharan et al., 2024).

CONCLUSION

Although environmental advertising plays a crucial role in raising awareness of ecological issues and promoting responsible behavior (Schmuck et al., 2018), it is essential to take into account the phenomenon of “greenwashing”. The latter can mislead consumers as to the true environmental impacts of products. Questionable strategic choices in the design and execution of advertising, such as excessive emphasis on the color green, the use of fuzzy and ambiguous semantics, guilt-tripping of the consumer, or exaggeration in the environmental claims, often contribute to this phenomenon. Grebmer & Diefenbach (2020), Zhang et al. (2021) point out that these practices can mislead consumers and compromise their ability to make informed choices when purchasing green products. As a result, the discrepancy between environmental claims and companies' actual practices leads to a loss of trust and increases consumer skepticism towards environmental advertising (Goh & Balaji, 2016).

The main objective of this research was to examine the impact of creative advertising elements, such as color, semantics used, guilt-tripping and exaggerated claims, on consumer skepticism towards environmental advertising. Our results show that, in our study context, consumers show higher skepticism towards environmental ads using the color green compared to gray, as well as towards ambiguous semantics, such as the vocabulary “sustainably”. In addition, guilt-tripping and exaggeration in advertising claims generated greater skepticism among consumers than claims without these features in this study.

On the other hand, our results confirm the absence of a moderating effect of environmental involvement between color and skepticism towards environmental advertising, as well as between the semantic element and consumer skepticism. However, environmental involvement moderates the relationship between guilt-tripping claims and skepticism towards environmental advertising, as well as the relationship between exaggerated claims and consumer skepticism. The data collected is used as a basis for proposing significant implications, both theoretical and managerial, arising from this work.

Theoretical contributions

Our synthesis of the literature offers several significant theoretical implications. Firstly, our study contributes by proposing a theoretical framework for studying the elements of environmental advertising, engendering skepticism. While other authors have already supported links between environmental advertising and skepticism, our study confirms this relationship by extending previous research through an experimental approach including different manipulations of the elements of environmental advertising. In this way, we improve understanding of the effects of these elements and provide more robust results.

This paper also makes an important theoretical contribution by proposing an integrative conceptual model to study the effects of advertising elements on consumer skepticism. We take into account the

moderating role of the degree of environmental involvement. This approach enriches and enhances the results of previous studies, offering a more comprehensive and in-depth perspective.

Our experimental study aims to contribute to the debate on the relationship between environmental advertising and skepticism by highlighting the crucial role of creative advertising elements in enhancing the credibility of environmental advertising, in line with previous research (Kim et al., 2016). But, unlike the dichotomous approach (presence vs. absence), our experimental study examines in depth the impacts of advertising elements engendering environmental advertising skepticism, according to a multifactorial design comprising 16 experimental conditions. Thus, our research aims to complement those of other authors (Benoit-Moreau et al., 2011; Krstić et al., 2021) by delving deeper into the vital role of advertising creation in engendering skepticism towards environmental advertising.

Managerial contributions

The experiment led to recommendations addressed directly to marketing and communications managers. Advertisers need to be aware of the extent of skepticism surrounding environmental advertising. However, excessive or misleading use of the color green can generate skepticism among consumers. In this sense, in order to avoid inducing consumers to blindly believe the advertising claims, advertisers must adopt a transparent and truthful approach by judiciously integrating the color green into environmental ads, while providing clear and verifiable information about the company's actual sustainable practices. In addition, it is essential to use the color green in a relevant way, associating it with concrete, tangible evidence of the company's environmental involvement.

Our results show that the use of ambiguous semantics, where the terms used can have multiple or unclear meanings, can appear deliberate to mislead consumers. It is crucial, therefore, to use clear terms in advertising claims, avoiding any ambiguity or duality of meaning (Pedros-Perez et al., 2019). On the other hand, guilt-tripping in environmental advertising messages can also generate skepticism among consumers. Companies need to adopt a more positive and encouraging approach, focusing on environmental benefits and concrete actions rather than stigmatization or guilt-tripping. Exaggeration in environmental advertising messages can be perceived as an attempt to overemphasize the ecological aspects of a product or company. Companies should therefore be cautious and transparent in their communications, avoiding promises of unattainable results or disproportionate environmental benefits. Indeed, claims about these benefits must be backed up by reliable scientific evidence, independent certifications and detailed information about sustainable production methods (Farooq & Wicaksono, 2021).

Research limitations

Although this study reveals important results, it presents several limitations that open up avenues for future research. Firstly, the actual context of the study, while increasing external validity, complicates the control of external variables such as participant fatigue and mood, requiring further exploration to understand their impact on skepticism towards environmental advertising. Secondly, the findings are specific to "air conditioner" ads. Different results could emerge with other products, as shown by Tee et al. (2022), underscoring the need for studies on a variety of products and services. Finally, the generalizability of the results beyond the Tunisian population is limited by varied cultural factors, requiring further research in different cultural contexts to fully understand skepticism towards environmental advertising.

Future research avenues

These limitations open up avenues for future research. Certain characteristics of environmental ads could be explored further to better understand their relationship with skepticism. For example: 1) The effects of the use of celebrities or influencers on the credibility and reception of environmental messages; 2) The impact of visual elements such as graphics, images or videos on the effectiveness and perception of environmental ads; 3) The exploration of narrative and emotional strategies used in environmental ads and their influence on consumer skepticism. In addition, it would be relevant to incorporate other moderating variables between the elements of environmental ads and consumer skepticism, such as consumers' degree of environmental knowledge and Consumer Awareness of Green

Products, which may influence their reception and interpretation of advertising messages (Leonidou & Skarmeas, 2017; Lima et al., 2024).

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