The limited effects of green marketing on attitudes towards trademarks

Los efectos limitados del marketing verde en la actitud hacia las marcas comerciales

Álvaro Jiménez Sánchez
University of Valladolid. Spain.
alvarojs@uva.es
[CV] ⓘ ⒢ ℝ

Belinda de Frutos-Torres
University of Valladolid. Spain.
mariabelinda.frutos@uva.es
[CV] ⓘ ⒢ ℝ

Vasilica-Maria Margalina
University Center CESINE. Spain.
vasilicamaria.margalina@campuscesine.com
ⓘ ⒢ ℝ

ABSTRACT
Introduction: Green marketing is an inherent part of many companies, whose main objective is to make consumers aware of their commitment to the environment and also to improve the image and attitude towards their brands and products. At the same time, the attitude towards the environment of these consumers is of great relevance, as the effectiveness of green marketing or, on the contrary, its perception as greenwashing, will depend on it. Therefore, the aim of this research is to test how different green marketing strategies influence attitudes towards certain brands/products in terms of beliefs and attitudes towards ecology and the environment. **Methodology:** A questionnaire was given to 342 university students about different brands and with different types of presentations (without image, with normal or classic advertising, with green advertising), as well as a series of items on environmental attitudes. **Results:** green marketing does not influence attitudes in most of the products presented, and the importance that people attach to ecological and environmental issues does not affect the relationship between green marketing and attitudes towards the brand/product in most cases. **Discussion:** companies should be aware that their green marketing practices may not be effective and that consumers may detect greenwashing. **Conclusions:** the statistical model presented here proves to be effective and can serve as a reference for future similar research that wishes to broaden the object of study.

RESUMEN

Introducción: El marketing verde es parte inherente de muchas empresas, cuyo objetivo principal es dar a conocer a los consumidores su compromiso con el medio ambiente y, también, para mejorar la imagen y actitud hacia sus marcas y productos. A su vez, es de gran relevancia la actitud hacia el medio ambiente que tienen estos consumidores, pues de ella dependerá la efectividad del marketing verde o que, por el contrario, se perciba como *greenwashing*. Por tanto, el propósito de esta investigación es comprobar cómo influyen las diversas estrategias de marketing verde en las actitudes hacia ciertas marcas/productos en función de las creencias y actitudes hacia la ecología y el medio ambiente. **Metodología:** Se suministró un cuestionario a 342 universitarios sobre diferentes marcas y con diversos tipos de presentaciones (sin imagen, con publicidad normal o clásica, con publicidad verde), así como una serie de ítems sobre actitudes medioambientales. **Resultados:** en la mayoría de productos presentados no influye el marketing verde en las actitudes, además, la importancia que las personas dan a lo ecológico y a lo medioambiental no afecta en la mayoría de casos a la relación entre marketing verde y actitudes hacia la marca/producto. **Discusión:** las empresas deben tener en cuenta que tal vez sus prácticas de marketing verde no sean efectivas y que los consumidores pueden detectar *greenwashing*. **Conclusiones:** el modelo estadístico planteado se muestra eficaz y puede servir de referencia para futuras investigaciones similares que deseen ampliar el objeto de estudio.

Palabras clave: Marketing verde; Publicidad; Medio ambiente; *Greenwashing*; Modelo estadístico; Ecología.

1.   Introduction

This research examines how green marketing (GM) influences attitudes towards various brands, based on individuals' pre-existing attitudes towards the environment and environmentalism.

GM is a concept that has evolved over the last decades and has become a fundamental part of the marketing strategy of many companies. The definition of GM is broad and diverse, but generally refers to the promotion of sustainable products and services, as well as the implementation of environmentally-friendly practices (Amoako *et al*., 2022; Mahmoud, 2018) in the manufacturing, packaging, and distribution of products (Schiochet, 2018). Its objectives are many and varied, but generally focus on promoting sustainability, improving the company's image, increasing consumer trust in its sustainable practices, reducing the negative environmental impact of business activities, and contributing to a more sustainable future for all (Alamsyah *et al*., 2020).

Its history begins in the 1960s and 1970s when the environmental movement gained strength and concerns about pollution and depletion of natural resources became significant concerns for many people. During this period, the first "green products" emerged, and initial attempts were made to promote and sell them with a sustainable approach. However, it was not until the 1990s and 2000s that GM began to take shape and evolve into a formalized strategy. During this period, consumers began to demand more sustainable products, and companies responded to this demand by incorporating sustainable practices into their marketing strategies and increasingly focusing on transparency, social and environmental responsibility, and integrating sustainable practices in all areas of their business, from manufacturing to promotion and sale of their products (Groening *et al*., 2018; Mendivelso-Carrillo and Lobos-Robles, 2019).

Environmental protection is becoming increasingly important due to the environmental challenges facing the planet, such as climate change, ecosystem degradation, and biodiversity loss. In this sense, companies play a fundamental role in environmental protection and can contribute to it by promoting sustainable practices, products, and services (Aguilar, 2016; Monteiro *et al*., 2015).

Consumer perception is a crucial factor in the success of GM, as they are the target audience for companies that adopt sustainable practices. Consumer perception and attitudes towards eco-friendly products and services can influence their purchasing decisions and thus have a significant impact on the adoption and success of GM (Liao *et al*., 2020). In general, consumers are becoming increasingly aware of environmental challenges and are willing to support companies that adopt environmentally-friendly practices. They are also more willing to pay a premium for eco-friendly products and services, as long as clear and transparent information is provided about their environmental impact (Haller et al., 2020). However, consumer perception and attitudes towards these types of products can also be influenced by external factors such as lack of transparency, perception of eco-friendly products as more expensive and of lower quality, or lack of access to such products, among others (Al -Ghaswyneh, 2019).

Therefore, it is important for companies to take measures to improve consumer perception and attitudes towards eco-friendly products and services. Strategies are primarily developed through communication and advertising, and organizations must be careful when promoting their green products and services to ensure that the information is accurate and not misleading. Transparency is crucial in maintaining customer trust in green products and services (Lückemeyer-Gregorio, 2021; Veliz and Carpio, 2019).

There are numerous and varied strategies of GM that can be adapted to the needs and goals of each business, but all of them would have the ultimate objective of promoting responsible and sustainable consumption by consumers.

One of the most commonly used strategies is brand communication. This is a marketing technique in which the company communicates to consumers its commitment to sustainability and its contribution to environmental protection. This communication can include, for example, the use of green logos or symbols on product packaging, the creation of advertising campaigns that promote the company's ecological values, or the integration of these values on its website and social media platforms (Aguilar, 2016).

Another GM strategy is the promotion of eco-friendly products. This involves highlighting the products and services of the company that have a reduced impact on the environment, such as products made from recycled materials or renewable energy sources. The company can showcase these products in its advertising communication and at its points of sale, as well as offer incentives to buyers who choose these eco-friendly products (Nekmahmud and Fekete-Farkas, 2020).

There is also corporate social responsibility (CSR), which involves integrating sustainability and environmental protection into the culture and strategy of the company. This includes, for example, implementing sustainable practices in product production, reducing energy and resource consumption, or collaborating with organizations that work towards environmental protection. The company can communicate these initiatives to customers through its website, social media, or events and advertising campaigns (Papadas *et al*., 2019; Sana, 2020). In addition, companies can implement sustainable practices in their daily operations to demonstrate their commitment in this area. This includes actions such as reducing greenhouse gas emissions, efficient management of natural resources, or adopting responsible production practices. These actions can help improve the brand image and attract consumers who value sustainability (Agyabeng-Mensah *et al*., 2020).

Engaging in campaigns and projects that promote environmental protection is another way to demonstrate a company's commitment to sustainability. Companies can sponsor or participate in initiatives that address important issues such as biodiversity conservation or climate change mitigation. This can help improve the brand image and strengthen its position as a leader in the context of Green Marketing (Papadas *et al*., 2019; Schmuck *et al*., 2018; Szabo & Webster, 2021).

Another measure is eco-labeling, a marketing tool that allows consumers to identify products and services that are environmentally friendly. There are different eco-labels at national and international levels, each with its own criteria and requirements. Additionally, environmental certification is also available, which is a process in which an independent entity evaluates the environmental sustainability of a product or service and grants certification if it meets certain standards (Khan *et al*., 2020; Sharma and Kushwaha, 2019).

Another relevant strategy is sustainable communication, which includes communicating the brand and sustainability message through various channels such as advertising, public relations, and online messaging. Developing sustainable products is also a significant process that involves identifying and creating environmentally-friendly and sustainable products, as well as evaluating their environmental and social impact. Changes in the supply chain can also be part of the GM strategy, including implementing sustainable practices in the supply chain such as optimizing transportation and reducing waste, as well as strategic partnerships with sustainable organizations that can help strengthen the brand image and improve environmental reputation. Additionally, engagement in social responsibility, an important component of Green Marketing, where companies can participate in social responsibility projects that align with their sustainable mission and values (Aguilar, 2016; Gali, 2013; Giraldo-Patiño *et al*., 2021; Szabo and Webster, 2021).

On the other hand, GM and advertising strategies are closely related, as the main objective of both is to improve the brand image and promote products or services. However, in some cases, companies may use deceptive tactics to make their products appear more environmentally-friendly than they actually are, known as greenwashing.

Greenwashing is a fraudulent practice that involves misleading or exaggerated advertising about the environmental characteristics of a product or service with the intention of attracting environmentally-conscious consumers (de-Freitas-Netto *et al*., 2020). For example, a company may claim that their product is completely biodegradable, when in reality it is only partially biodegradable. This tactic can be detrimental to the brand, as it can erode consumer trust and long-term loyalty, as well as commit genuine industry efforts to make a positive impact on the environment (de-Jong *et al*., 2020; Yang *et al*., 2020). For this reason, it is important for companies to implement honest and authentic Green Marketing strategies and avoid falling into greenwashing. To do this, it is relevant for companies to thoroughly study the environmental characteristics of their products and services and communicate them clearly and accurately. Additionally, there are tools and organizations that can help companies assess and improve their environmental impact, such as life cycle assessment, eco-labeling, or environmental certification. These can be useful in ensuring that products and services are genuinely environmentally-friendly and enhancing the credibility of a company's Green Marketing claims (Salas-Canales, 2018).

There are several common tactics or strategies of greenwashing (Fernandes *et al*., 2020; Jog and Singhal, 2019; Ruiz-Blanco *et al*., 2022; Seele and Gatti, 2017), including:

- Focusing on a single green aspect of the product, such as recyclable packaging, while ignoring other more significant aspects such as carbon footprint or energy efficiency.

- Making vague and unsubstantiated claims about the sustainability of their products, such as using terms like "eco-friendly" without providing specific information or evidence to support their claims or how they meet environmental standards.

- Displaying meaningless environmental certifications, such as labels that can be purchased without rigorous verification processes and with the intention to deceive consumers.

- Making deceptive comparisons with non-sustainable products, such as claiming that their product is "more sustainable than the competition" without providing any specific information or comparison.

- Using misleading images and symbols, such as green leaves or trees, to suggest a commitment to sustainability, without actually having truly sustainable products.

- Exaggerating the environmental nature of the product or service, such as claiming that they are fully biodegradable when they are not.

- Using green logos or labels with no real meaning. These can be confusing for consumers and lead them to believe they are buying a more sustainable product than it actually is.

- Failing to provide sufficient information or omitting important information about the environmental impact and labeling products as "green" without providing enough information.

- Using deceptive green terms, such as "natural" or "organic", which do not have legal definitions and can be interpreted differently by buyers.

As a consequence, it is important for customers to be informed and do their research before making purchasing decisions. They should investigate the environmental claims and certifications of products and services, and seek trusted organizations that can help verify the accuracy of these claims. By choosing truly eco-friendly products and services, these consumers can support companies that are making genuine efforts to protect the environment and promote a more sustainable future for everyone.

It is important to consider the attitudinal triad towards the environment. Cognitive components include perception and understanding of environmental issues and the available information about them. Affective components encompass the emotions and feelings a person experiences in relation to the environment and its protection, as well as a person's beliefs and values on this topic. Conative-behavioral components include tendencies, dispositions, or intentions towards the environment, as well as concrete actions a person takes to protect it (Chou *et al*., 2020; Grimmer and Woolley, 2014; Testa *et al*., 2019; Zsóka *et al*., 2013). It is important to note that these components are not necessarily disconnected from each other and can mutually influence a person's environmental behavior. For example, a positive attitude towards the environment can motivate a person to seek information about environmental issues and take concrete actions to protect nature. Similarly, responsible environmental behavior can strengthen a person's positive beliefs and values about the natural environment and its protection (Chou *et al*., 2020; Grimmer and Woolley, 2014). However, cognitive dissonance (Festinger, 1957) can also occur, where the consumer experiences psychologically unpleasant feelings due to inconsistency, for example, thinking that recycling is necessary to improve the environment but engaging in inconsistent behavior. Based on the desire for consistency, the person is unlikely to recognize their inconsistency from her, but rather try to justify it to others and themselves.

Furthermore, it is important to differentiate between the concepts of environment and ecology for the purpose of this study. The former refers to the set of circumstances or external conditions to a living being that influence its development and activities (RAE, n.d., Medioambiente / Environment), while the latter refers to the science that studies the relationships of living beings with each other and with their environment (RAE, n.d., Ecología / Ecology), so that the concept of environment (surroundings) would be encompassed within the definition of ecology.

In a broader sense, environmentalism constitutes a social movement that seeks to protect the environment and promote a sustainable way of life. This movement is based on the idea that society needs a profound change in its relationship with the natural environment to ensure a sustainable future. The cognitive, affective, and behavioral triad also plays an important role in the adoption and participation in environmentalism. People who identify as environmentalists often have positive beliefs and values about the environment and its protection, and are motivated by positive emotions and feelings towards it. These beliefs and emotions can influence their purchasing decisions, environmental behavior, and participation in movements and campaigns related to the topic (Haq and Paul, 2013; Panizzut et al., 2021).

Some research on the measurement of ecological and environmental behavior has found or has been based on various factors in this regard (Amérigo et al., 2007; Fraj-Andrés and Martínez-Salinas, 2005; López-Miguens et al., 2015; Matas -Terrón et al., 2004; Musitu-Ferrer et al., 2020; Vázquez and Manassero, 2005), among which motivational aspects, environmental knowledge, affective and verbal commitment to the environment, social participation, social desirability, social, environmental, personal, and educational responsibility, environmental pollution, sustainable resource use, planetary atmospheric impact, eco-social behavior, total conservation (intent to support, resource care, and enjoyment of nature), total utilization (alteration of nature and domination), ecocentrism, ecopathy, eco pessimism, naturalism and scientism, degree of ego biocentrism, biodiversity and anthropocentrism, or proximal and distal attitude, etc., stand out. Among all of them, given the wide variety, for this research and in relation to the concepts defined above, components related to concern for the environment and personal behavior towards it (environmentalism) have been taken into consideration.

After the environmental variables, advertising, and the GM, the final variable in this study is brand attitude. This refers to the positive or negative evaluations and opinions that consumers have towards a particular brand. These attitudes are formed through previous experiences, information received about the brand, and the social and cultural impact in which it is situated, among others. They are an important component in purchase decision-making, as they influence customers' perception of brand quality, value, and credibility. Furthermore, they can also affect loyalty and repeat purchase intention of buyers (Ferrell et al., 2019; Zarantonello and Schmitt, 2013). In the context of the GM strategy, it is of interest for companies to generate positive brand attitudes among consumers towards their eco-friendly products and services. This is achieved through a combination of techniques and actions, such as brand communication, promotion of eco-friendly products, and corporate social responsibility. By fostering positive attitudes towards the brand and its eco-friendly products, companies can increase the likelihood that consumers will consider and purchase them (Dangelico and Vocalelli, 2017; Groening et al., 2018; Liao et al., 2020).

2. Objectives

Therefore, given that GM and advertising aim to improve attitudes towards a brand while avoiding greenwashing, the following objectives and hypotheses are established:

- The first objective is to experimentally verify the degree of influence that some of these techniques have on attitudes towards the brand or product within graphic advertising and packaging. Hypothesis 1: The application of GM techniques in graphic advertising and packaging positively affects attitudes towards the brand.

- The second objective is to determine if personal valuation of environmental and ecological issues influences the possible relationship between GM and attitudes. Hypothesis 2: The relationship between the use of GM techniques and attitudes towards such brands will be moderated by attitudes and involvement towards the environment and environmentalism. It is expected that the more positive attitudes and behaviors towards the environment, the more influence the use of GM will have on attitudes towards the brand. Conversely, the more negative attitudes and actions towards environmental issues, the less influence the use of GM strategies will have on attitudes towards a brand or product.

As will be detailed later, in order to try to address these hypotheses, a model is proposed with the aforementioned variables (see Figure 1), which also incorporates covariates such as brand/product use and knowledge. Therefore, the final objective will be to analyze the effectiveness of this model.

3.   Metthodology

3.1. Sample and instrument

The sample consists of 342 young people between the ages of 18 and 29, of whom 26.6% identified as male and 73.4% as female. The study is based on a correlational methodology aimed at understanding the relationship between the variables collected in the model, and it does not intend to make population inferences about the evaluated parameters. Therefore, a convenience sample is used from students of the Bachelor's Degree in Advertising and Public Relations at the University of Valladolid, Spain.

The questionnaire used consists of the following sections (see Appendices):

-Demographic variables: gender (male / female / other), age (18-23 / 24-29 / 30-39, etc.).

-Variables about the product/brand: In each of the 16 images presented, the following questions had to be answered:

-What is your attitude towards this product/brand? (1=Very unfavorable / 7=Very favorable).

-What is your degree of knowledge about the product/brand? 1=No knowledge / 5=A lot of knowledge).

-Do you usually use/consume that product/brand? (0=Never / 5=Very much).

There were three types of presentations for each product/brand: without image / with normal or classic image / with GM image.

- Variables on environment and ecology: a test on environmental attitudes and behaviors (Amérigo *et al*., 2007; Fraj-Andrés and Martínez-Salinas, 2005; López *et al*., 2015; Matas-Terrón *et al*., 2004; Musitu-Ferrer *et al*., 2020; Vázquez and Manassero, 2005). The scale consists of 16 items with response options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Additionally, a final item with the same response options as the previous items was added to assess perception towards

greenwashing: "I have a very negative attitude towards greenwashing (attempt by a company to make its products seem environmentally friendly when they are not)".

3.2. Procedure

For the development of this non-randomized controlled trial design, all the groups from the four courses that make up the university degree were conveniently selected. Participants completed the questionnaire during the last quarter of 2022, virtually through the *Google Forms* platform, on a regular class day with the appropriate permissions from the teachers of the subjects to do it in the classroom. During the process, instructions were explained, any questions about the items were clarified, and the study objective was discussed at the end.

All participants took part voluntarily, anonymously, and without any profit motive. The ethical code of the university to which this research belongs was taken into consideration at all times, respecting aspects such as privacy and confidentiality.

Similarly, following the proposal of Hartmann *et al.* (2004) to evaluate the influence of green positioning on brand attitude, the sample was divided into three groups. One group was the "control" group, which was asked about brands/products without showing them any images (n=74). To avoid response biases, the other two groups were presented with images of classic or normal packaging/logos intercalated with those that had green advertising (see Table 1 and questionnaires in Appendices).

For the selection of brands and products, three criteria were followed. Firstly, brands and products that were sufficiently well-known to the participants were chosen, as confirmed by the results (see Table 3). Secondly, campaigns from various sectors of activity were sought, specifically, brands/products related to food, beverages, beauty and hygiene, textiles, and goods/services. Thirdly, different types of green marketing strategies were included, such as logo color change, recycling appeal, reduction of plastic use, organic and *bio*-related claims, etc.

It should be noted that it has not been deemed appropriate to classify these brands and products as engaging in green marketing or greenwashing, as the line between these practices is often thin and subjective, as mentioned in the introduction. In fact, one of the purposes of this research is precisely to propose a model to approach the distinction between green marketing carried out by companies and potential greenwashing perceived by consumers.

Tabla 1. *Distribution of campaigns by sector and experimental condition.*

Group 2	Condition	Group 3	Condition	Sector
McDonald's (red logo)	Classic	McDonald's (green logo)	Experimental	Food
Font Vella water bottle (label "100% recycled plastic")	Experimental	Font Vella water bottle (without label, normal)	Classic	Beverages
Pescanova hake (classic packaging),	Classic	Pescanova hake (labeled "New more sustainable packaging, 92% less plastic")	Experimental	Food
Puma footwear ("Vegan" seal),	Experimental	Puma footwear (without seal, normal)	Classic	Textile

Original Pringles Crisps (Red Pack),	Classic	Original Pringles Potatoes (red, brown and green packaging, recyclable carton)	Experimental	Food
Iberdrola (green logo)	Experimental	Iberdrola (old red logo)	Classic	Consumer goods/services
Zara shirt (no stamp, normal)	Classic	Zara shirt (recycled fashion label)	Experimental	Textile
Organic Nescafé Gold (green packaging),	Experimental	Nescafé Gold regular (classic packaging)	Classic	Beverages
Coca Cola can (classic red container)	Classic	Can of Coca Cola Life (green container)	Experimental	Beverages
Suchard chocolate bar (package with BIO seal)	Experimental	Suchard chocolate bar (package without BIO seal)	Classic	Food
BIC pens (classic yellow and blue packaging)	Classic	BIC pens (yellow and green packaging "74% recycled, ECOlutions")	Experimental	Consumer goods/services
LG home appliances poster (energy efficiency seal A)	Experimental	LG home appliances poster (no energy efficiency seal, normal)	Classic	Consumer goods/services
Pantene Pro-V shampoo (classic packaging),	Classic	Pantene Pro-V shampoo (classic container plus "60% less plastic" *Refill*)	Experimental	Beauty and hygiene
H&M (green logo)	Experimental	H&M (red logo)	Classic	Textile
Fructis Garnier shampoo (classic packaging)	Clásico	Fructis Garnier shampoo (classic packaging plus "Cruelty Free International" rabbit seal)	Experimental	Beauty and hygiene
lNivea Sun lotion (packaging with "Ocean Friendly" seal)	Experimental	Nivea Sun lotion (classic packaging)	Classic	Beauty and hygiene

Source: Author's own work.

3.3. Data analysis

For the descriptive analysis, means and standard deviations were used. For the psychometric study of the items on environmentalism, items with low internal consistency or homogeneity were initially eliminated, resulting in a final set of nine items with a *Cronbach's alpha* of .832. Subsequently, principal component factor analysis with Varimax rotation was conducted, extracting factors with eigenvalues greater than one and factor loadings above .4. Each factor was saved as a regression variable, allowing for correlation with other aspects to be investigated. The factorial analysis (*KMO*= .843; *Bartlett, sig*= .000) explained 58.233% of the variance and converged on two components:

Table 2. *Factors, items, and loadings.*

Factors	Loadings
Personal ecological factor (43.659% variance; alpha=.828)	
Whenever I can I buy organic products	,831
I usually take eco-labels consider when buying	,810
I try to buy recyclable and recycled products	,768
Ecology is a very important value for me	,731
Socioeconomic environmental factor (14.574% variance; alpha=.733)	
Plants and animals have as much right to exist as human beings.	,744
I am concerned about the problems of scarcity of food and resources for human beings due to environmental deterioration	,709
I am concerned about the future generations for the environment that we will leave them	,643
Although it may entail economic losses, a company should invest in reducing its environmental impact	,607
I consider the environmental responsibility of companies fundamental in the products I buy	,577

Source: Author's own work.

To study the difference in attitudes based on the three typologies (no image / normal image / green advertisement), a one-way ANOVA was used (*Scheffe* assuming equal variances and Dunnett's *T3* for unequal variances). Additionally, for analyzing this relationship based on the obtained factors acting as moderating variables, the Hayes' Model 2 (2013) was used, with the statistical software SPSS (version 26 for Windows) and the PROCESS macro also for SPSS developed by Hayes (version 3.5). All of this resulted in the following proposal for a specific model.

Figure 1. *Proposed model.*
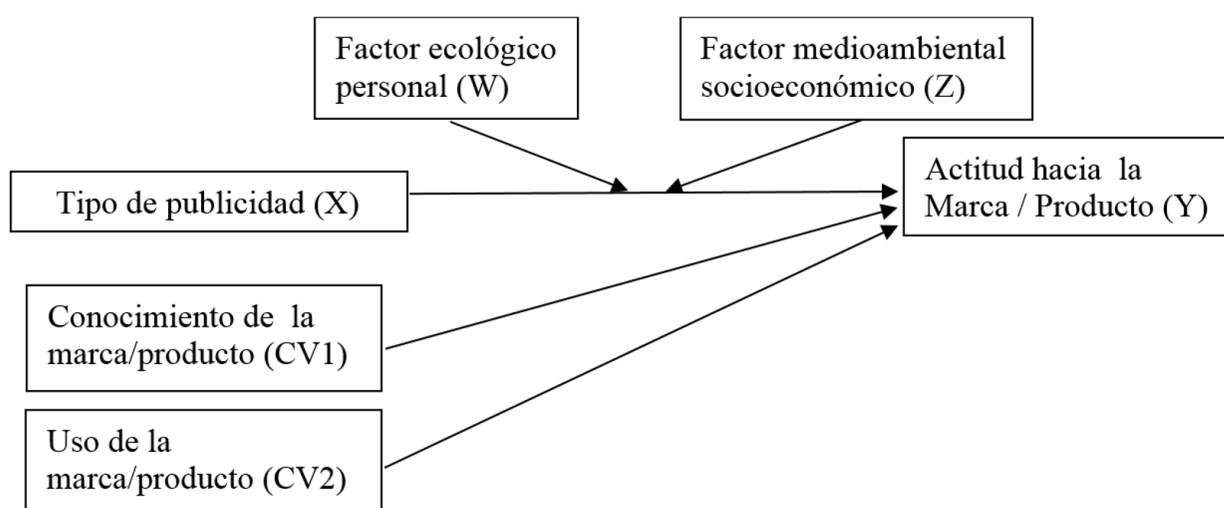
Source: Author's own work.

4. Results

The results obtained are shown below. It is worth noting that there is a positive correlation in all cases between attitude towards the brand/product, knowledge of it, and its use/consumption.

Table 3. *MC=Medium brand/product awareness; MU=Mean use or consumption of brand/product; A=No image; B=Normal or classic image; C=Image with GM.*

Brand-Product Mean LS Mean MU	Format and mean of attitude (standard deviation)	Anova	Model
Change of the logo color to green			
McDonald's MC=3,62 MU=2,81	A=4,68 (1,49) B=4,72 (1,4) C=4,84 (1,43)	F=,356 (p=,701)	F=,496 (p=,738)
Coca Cola MC=3,87 MU=2,96	A=4,75 (1,72) B=4,95 (1,66) C=4,88 (1,71)	F=,327 (p=,722)	F=,699 (p=,593)
Iberdrola MC=2,47 MU=2,55	A=3,35 (1,51) B=3,2 (1,33) C=3,87 (1,19)	F=8,556 (p<,000); A-B (p=,879) A-C (p=,037) B-C (p<,000)	F=,821 (p=,512)
H&M MC=3,14 MU=2,74	A=4,75 (1,39) B=4,93 (1,26) C=4,81 (1,33)	F=,486 (p=,615)	F=,114 (p=,977)
Appeal to recycling: cardboard - plastic - fabric			
Pringles MC=3,03 MU=1,02	A=4,6 (1,63) B=5,21 (1,4) C=5,52 (1,35)	F=9,665 (p<,000); A-B (p=,016) A-C (p<,000) B-C (p=,210)	F=,417 (p=,796)
Water Font Vella MC=2,58 MU=2,45	A=4,7 (1,19) B=4,97 (1,44) C=4,97 (1,34)	F=1,143 (p=,320)	F=,431 (p=,786)
Bic MC=3,38 MU=4,24	A=5,66 (1,13) B=6,12 (1,05) C=5,95 (1,21)	F=3,957 (p=,020); A-B (p=,020) A-C (p=,209) B-C (p=,469)	F=1,233 (p=,296)
Zara MC=3,98 MU=3,49	A=5,09 (1,52) B=5,36 (1,43) C=5,3 (1,46)	F=,842 (p=,432)	F=,416 (p=,796)
Appeal to use less plastic			
Hake Pescanova MC=2,07 MU=1,74	A=3,68 (1,51) B=3,68 (1,67) C=3,65 (1,59)	F=,015 (p=,986)	F=1,811 (p=,126) Factor 1: F=3,582 (p=,029); R^2 aj=,014
Pantene MC=3,11 MU=2,64	A=4,64 (1,37) B=4,51 (1,61) C=5,03 (1,48)	F=3,984 (p=,019); A-B (p=,840) A-C (p=,223) B-C (p=,024)	F=,743 (p=,563)
Appeal to respect for animals: vegan stamp - not tested on animals			
Shoes Puma MC=2,78 MU=1,93	A=4,52 (1,16) B=4,4 (1,23) C=4,58 (1,22)	F=,726 (p=,484)	F=1,532 (p=,192)

Garnier MC=3,04 MU=2,71	A=4,58 (1,27) B=4,93 (1,56) C=5,23 (1,4)	F=4,665 (p=,010); A-B (p=,259) A-C (p=,011) B-C (p=,261)	F=,170 (p=,953)
Appeal to organic farming: organic, bio			
Nescafé MC=3,03 MU=2,76	A=4,85 (1,18) B=5,18 (1,4) C=4,74 (1,45)	F=3,437 (p=,033); A-B (p=,208) A-C (p=,927) B-C (p=,043)	F=1,774 (p=,133) Factor 1: F=2,982 (p=,052); R^2 aj=,011
Suchard MC=2,84 MU=2,4	A=5,06 (1,5) B=5,13 (1,44) C=4,89 (1,36)	F=,937 (p=,393)	F=1,604 (p=,172)
Appeal to the marine environment			
Nivea MC=3,24 MU=3,31	A=5,01 (1,35) B=5,73 (1,31) C=5,42 (1,3)	F=6,999 (p=,001); A-B (p=,001) A-C (p=,101) B-C (p=,174)	F=1,956 (p=,100) Factor 2: F=3,677 (p=,026); R^2 aj=,014
Appeal to energy consumption: energy efficiency label			
LG MC=2,67 MU=2,7	A=4,6 (1,08) B=4,85 (1,21) C=4,86 (1,16)	F=1,367 (p=,256)	F=1,012 (p=,400)

Source: Author's own work.

The following figure shows the graph of those results with significant conditional effects or close to a *p* value of 05, whether due to factor 1, factor 2, or the interaction of both.

Figure 2. *Significant results or approaching significance at .05 level. Blue=No image / Red=Normal or classic advertising / Green=Green advertising. X-axis=Factor 1 or Factor 2 / Y-axis=Attitude.*
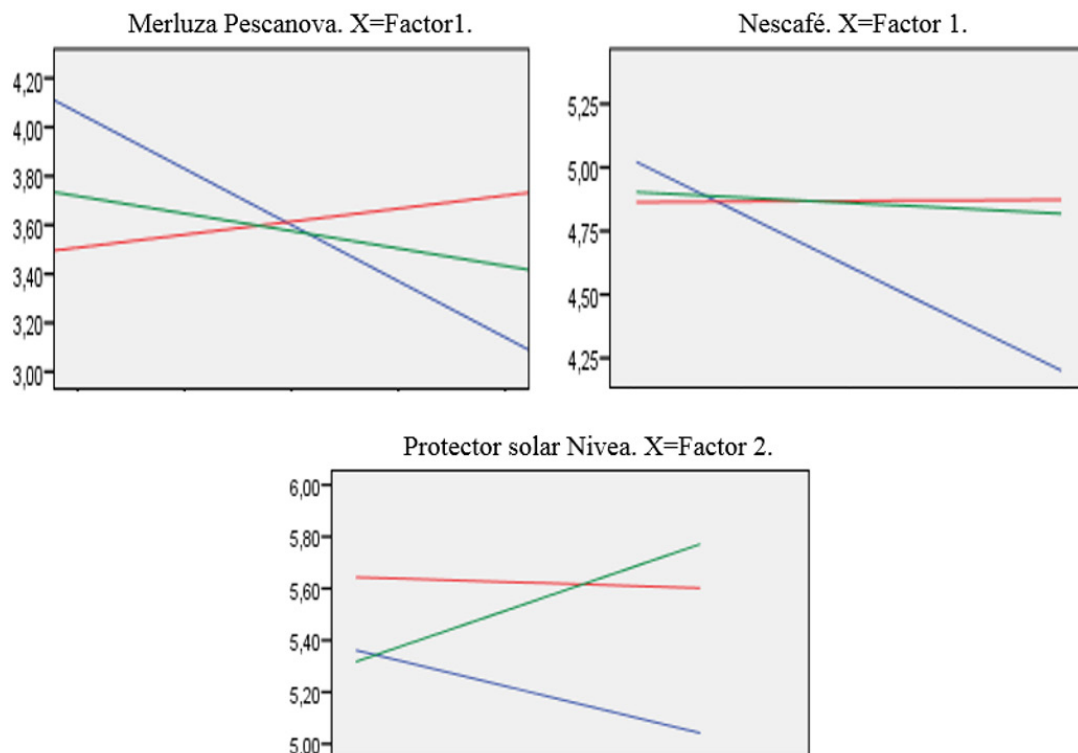
Source: Author's own work.

In summary, those logos and products offered under the GM approach only managed to change the attitude towards the brand in seven out of sixteen cases (hypothesis 1), and in those cases, three of them resulted in a decrease in attitude (Nescafé, Nivea, and Bic). Since these results may be influenced by external factors other than GM, such as simply the green version being aesthetically more pleasing or vice versa, it is enlightening to observe the influence of ecological and environmental attitudes (hypothesis 2). In this regard, only three products were affected by any of the extracted factors (Nivea, Nescafé, and Pescanova). It is worth noting that the item "I have a very negative attitude towards greenwashing" does not significantly correlate with factor 1 (r=.064; p=.247), but it does with factor 2 (r=.278; $p<$,000).

5. Discussion and conclusions

In response to the first objective set forth, as revealed by the results, GM (Green Marketing) does not necessarily lead to an increase in attitude towards the brand/product, in fact, sometimes the opposite occurs. The reasons for there being no significant changes in most cases can be diverse. It should be noted that after participants completed the questionnaire, the purpose of the research was explained to them, and a brief phase of debate and opinions was encouraged. Some participants stated that they preferred one version or another because it was more familiar to them. In other examples, some people argued that they had not noticed the various types of appeals (seals, labels, etc.), and lastly, another interesting reason unrelated to GM is that certain presentations seemed more attractive to them, such as in the case of Iberdrola, where the old red logo was unpleasant to them, or as one person literally mentioned, "it was more associated with a law firm than an energy company." This data is important because, in truth, this last case is the only one in which significant differences are found among the different visual presentations made, and in which both extracted factors do not act as moderators, so the underlying reason for these differences would be more related to aesthetic arguments rather than GM itself, which does seem to influence the example of Pantene (for the better in the *refill* version) and Nescafé (for the worse in the *organic* version).

It is also worth noting the fact that some participants argued that they had not noticed the different types of appeals. This could be due to reasons such as limited time or attention dedicated to observing the images, but it could also be due to desensitization to the exposed techniques or lack of knowledge about some of them, as several participants mentioned. In any case, this data is relevant enough for companies to be more concerned about understanding how consumers perceive their products, especially those on which they have invested efforts and resources to make them more sustainable and communicate that they are, but that such communication is not always perceived by potential buyers, leading to a decrease in the added value that the brand intended to convey with these actions. Some of the most affected are seals or labels, which may suffer from not being fully visible, recognizable, or understandable, but it could also be the case that consumers have normalized certain GM techniques and that, despite clearly perceiving, for example, the green color or the eco-labeling, it does not represent an added value in their purchasing decisions or, at least, these tactics are insufficient in increasing their attitude towards these products compared to others.

The results indicate that the use of green marketing (GM) does not necessarily lead to improved attitudes towards the brand/product, except in the cases of Iberdrola, Pringles, Bic pens, Garnier shampoo, and Nivea sunscreen, where the absence of visual images resulted in poorer outcomes. However, in the remaining eleven examples, the visual effects did not result in improved attitudes compared to not showing any images or symbols. These results do not necessarily imply a detriment to the power of images in advertising, corporate iconic marketing, or *packaging*, but they could encourage certain companies to reconsider their visual strategies, especially in the context of green marketing.

This leads to the second objective of the research, which hypothesized that these green marketing tactics would be more effective in changing attitudes among individuals with a higher predisposition towards environmentalism and environmental concerns. However, the results indicate that both extracted factors only acted as moderators in three products (Pescanova hake, Nescafé, and Nivea sunscreen). Therefore, it can be concluded that in the majority of the cases studied, GM not only does not influence attitudes towards the brand/product, but it also does not affect individuals who are already environmentally conscious any differently. These findings could be encouraging for companies to reconsider their communication strategies in this area, both in terms of improvement and avoiding greenwashing.

Furthermore, this unexpected finding is of great interest for better understanding the purchasing attitudes towards green products. In this sense, if high environmental knowledge and involvement do not result in improved attitudes towards products presented as green or sustainable, it raises questions not only about what companies may be doing wrong, but particularly about what is happening with these consumers whose pro-environmental attitudes are not reflected in their purchasing behavior.

This also leads to reflection on those three products in which some of the two factors act as moderating variables. As can be seen in Figure 2, the trend that is repeated in Pescanova, Nescafé, and Nivea is that as a person places higher importance on ecological and environmental issues, their attitude towards these brands/products worsens when no image is shown. In other words, these visual presentations are able to improve this attitude, which would demonstrate, in these cases, the power of advertising in individuals who are concerned about the environment. However, what differs in the three cases is the type of iconic presentation that increases attitude and the factor that moderates this relationship. In Pescanova and Nescafé, it is factor 1 (personal ecological) that acts as a moderator, while in Nivea, it is conditioned by factor 2 (socioeconomic environmental). This reveals that each factor acts differently and that depending on the type of brand/product and the type of appeal (reduced plastics, organic, or marine protection), attitude towards ecological and environmental issues will be influenced differently.

Regarding GM, it does not seem to improve attitudes towards Pescanova's hake compared to the classic or normal visual presentation, while in Nescafé it remains similar, and in Nivea it would actually surpass it, which aligns with the usage and knowledge that people have of these brands (less so in Pescanova and more so in Nivea). This would demonstrate the importance of the covariates used, as there is a positive correlation between attitudes towards a brand/product and its usage and knowledge. What is observed is that the GM techniques used in these three examples would have a greater effect the more these brands/products are used or consumed, meaning that GM could be a reinforcer of attitudes in products that are already habitually consumed (such as Nivea), while the effect would be smaller in less frequently used products (such as Pescanova). This could also explain the decrease in attitudes when no image is offered, as there is a decrease of almost one point in Pescanova, 0.75 in Nescafé, and 0.40 approximately in Nivea (see Figure 2), indicating that individuals have, *a priori* (without showing any advertising), an attitude towards a brand/product that worsens as the person is more environmentally conscious. However, this gap with less environmentally engaged individuals would be smaller the more that brand/product is consumed, at least in these three examples analyzed. In any case, for future similar research, it would be important to further investigate the type of knowledge and usage that subjects have in order to clarify the effects of these covariates.

Therefore, the second hypothesis is partially resolved, as environmental and ecological beliefs and attitudes would conditionally influence depending on the brand/product, the format in which it is presented, the type of appeal made, the way it is carried out, and the usage or consumption of the items for sale. However, as the analyzes have shown, in most cases, the balance between these elements

in favor of GM is not achieved, as GM is generally ineffective and sometimes counterproductive compared to traditional or classic advertising.

Therefore, if GM is not as effective, it is necessary to question whether the subjects perceived greenwashing. On this topic, it is interesting to note that only factor 2 was significantly correlated with the item "I have a very negative attitude towards greenwashing", which reveals that this concept is much more complex than it seems, and that, based on the results shown, it is difficult to conclude that the ineffectiveness of GM is due to subjects detecting or perceiving greenwashing, as this would not depend, as one might assume, on the level of environmental commitment, but only on certain aspects, in this case, partner -economic. Furthermore, the data suggests that socio-economic status does not influence attitudes towards a brand/product, even when the consumer has a positive attitude towards environmental protection and a negative attitude towards greenwashing. Therefore, the concept of greenwashing and its relationship with purchase decision-making would require further in-depth investigation.

Regarding the third objective, the proposed model has been shown to be effective for investigating GM in relation to environmental attitudes. However, it is important to note that the adjusted R-squared value with significant values is relatively low, indicating that there are many other factors that have a greater influence on attitudes and purchasing behavior towards a brand/product, which may have little or nothing. to do with GM or personal environmental values, such as price, quality, shopping experience, branding, etc. Despite this, these types of models are useful for studying GM and, especially, for detecting greenwashing. Therefore, to improve such models, it is recommended for future studies to include qualitative items in the questionnaire, expand the sample to other age ranges and cultural contexts, increase the number of brands/products analyzed and the heterogeneity among different GM strategies, include more environmental-related factors, and finally, expand the number of covariates and further explore them. This way, gradually more appropriate and accurate models can be established for measuring the effectiveness of GM on attitudes, so that these techniques do not remain merely as corporate greenwashing that has little or no influence on consumers.

As a result, it can be concluded that GM may have limited effects on attitudes towards commercial brands, to the point of being perceived as greenwashing by the public. This depends on various factors such as knowledge and awareness of the environment and sustainability, customers' prior research before purchasing, brand loyalty and usage, price and quality attractiveness, potential long-term influences, availability of information on companies' environmental behavior, increasing environmental awareness among consumers, and different and evolving government regulations, among others. As a result of these factors, consumers may become more critical and skeptical of companies' environmental claims, and as a consequence, GM may have a limited impact on attitudes towards commercial brands. However, this does not mean that it should not be a cause for concern; in fact, it is important for companies to ensure that their GM practices are transparent and genuine, rather than simply attempting to attract consumers with false or exaggerated claims about their environmental sustainability. Such strategies are not only detrimental to companies, but also to people's trust in eco-friendly products and, in general, to an environmentally responsible society.

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APPENDIX:

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AUTHOR/S:

Álvaro Jiménez Sánchez
Universidad de Valladolid. Spain.

Has a Degree in Psychology and PhD in Communication from the University of Salamanca. He is currently a Research Professor of the Department of Audiovisual Communication and Advertising at the University of Valladolid (Spain). He worked for five years at the Technical University of Ambato (Ecuador), in Communication and Social Work. There he directed several projects in edu-entertainment and taught classes in various master's degrees related to the cinematographic field. Later he was a professor at the University of Salamanca, in the degree of Psychology. Research lines: advertising, cultural studies, entertainment, communication and new technologies, gender studies and social psychology.
alvarojs@uva.es

Orcid ID: https://orcid.org/0000-0002-4249-8949
Google Scholar: https://scholar.google.com/citations?hl=es&user=aaAT6AwAAAAJ
ResearchGate: www.researchgate.net/profile/Alvaro-Jimenez-Sanchez

Belinda de Frutos Torres
Universidad de Valladolid. Spain.

Doctor in Psychology from the Autonomous University of Madrid in the Department of Social Psychology and Methodology. Associate Professor at the University of Valladolid, teaching in the Advertising and Public Relations undergraduate program. He previously worked at San Pablo CEU University and IE University. Specialized in mass media and their advertising use, her research is focused on digital competencies, interactive media: connectivity, and social networks.
mariabelinda.frutos@uva.es

Orcid ID: https://orcid.org/ 0000-0002-9391-8835
Google Scholar: https://scholar.google.es/citations?user=b_e3MaEAAAAJ&hl=es
ResearchGate: https://www.researchgate.net/profile/Frutos_Belinda

Vasilica-María Margalina
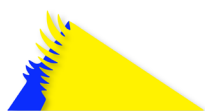Centro Universitario CESINE. Spain.

Graduated in Tourism, Master's in International Business Management, and PhD in Business Economics and Finance from Rey Juan Carlos University (Spain). Currently, she is a Research Professor at CESINE University Center in Spain. She worked for three years at the Technical University of Ambato (Ecuador), in the fields of Accounting and Auditing, and Financial Engineering, as well as coordinating two research projects on organizational organization and the application of digital technologies in companies. Additionally, she taught classes in master's programs in the areas of e-commerce, marketing, and statistics. Research areas include organizational behavior, e-commerce, communication and new technologies, and marketing.
vasilicamaria.margalina@campuscesine.com

Orcid ID: https://orcid.org/0000-0002-8479-8966
Google Scholar: https://scholar.google.es/citations?user=zqoHeTUAAAAJ&hl=es&oi=ao
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