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Title:

*Greenwashing*: origins, how it takes place and the effect it has on  
Aragonese citizens

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## **ABSTRACT**

The worsening of the environment is a present concern for our society. As a consequence, corporations have been held accountable for the negative impact their activity has on the environment. However, corporations have seen this as an opportunity to make deliberate misleading claims with regard to the impact of their product and business activity with the purpose of attracting concerned consumers and, consequently, improving their revenues and image. This phenomenon is also known as “greenwashing”.

In this study, we are going to analyse the origins and drivers of greenwashing as well as its presence in society from a consumer perspective. More specifically, we are going to analyse the effect greenwashing has on a sample of the Aragonese population and how different demographic variables influence the perceptions of respondents on environmentalism, green marketing and greenwashing. The data was collected via an online survey. This study concludes that age, field of expertise and employment are the most significant variables when analysing the levels of analysis.

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## **RESUMEN**

El deterioro del medio ambiente es una de las principales inquietudes de nuestra sociedad. A consecuencia de ello, se ha exigido a las empresas una reducción del impacto de su actividad sobre nuestro planeta. Sin embargo, estas han visto una oportunidad para incrementar sus beneficios y mejorar su imagen a través de publicitar información engañosa en cuanto a los impactos medioambientales de sus productos y actividades. Este fenómeno es también conocido como “*greenwashing*” o lavado verde.

En este trabajo, analizaremos los orígenes y motivaciones del *greenwashing* y el impacto que esta práctica tiene en la sociedad desde el punto de vista de los ciudadanos. Más específicamente, analizaremos el efecto que tiene el "*greenwashing*" en la población aragonesa y cómo diferentes variables demográficas influyen en el nivel de concienciación medioambiental del consumidor, así como en la percepción del marketing verde y el "*greenwashing*". Los resultados permiten concluir que aspectos como la edad, rama de especialización, y situación laboral son los aspectos diferenciadores en las percepciones de los ciudadanos sobre el "*greenwashing*".

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# 1. INTRODUCTION

## 1.1 Motivation

As a society, we are every day more aware of the environmental and societal consequences of our actions. It is undeniable the impact globalisation and our presence on the planet has had on the environment and it is every day more noticeable. The list of the negative impacts global warming has and will have on our planet is extensive and we cannot deny it. Our current situation has stimulated citizens all around the world to pressure governments and corporations to take action and help reduce the impact the human race has on the environment.

This increasing concern resulted with the emergence of Corporate Social Responsibility (CSR), which centres around the compensation and reduction of the environmental impact of business activity. However, there are corporations that have seen this trend as an opportunity to obtain monetary benefits at the cost of environmental concern. This practice is known as “greenwashing”. Through misleading advertisements and claims, greenwashing firms take advantage of market agents' concerns making it seem as if they are truly attempting to reduce and compensate for their impact on the environment. (Porter and Kramer, 2006; Furlow, N.E., 2010).

Regardless of the benefits companies obtain, research has shown that greenwashing has negatively affected consumers' trust on environmentally friendly products as they are more sceptical towards green products and advertisements which consequently translates as a cost for companies. (Farooq & Wicaksono, 2021).

This study was motivated by the need to comprehend what drives greenwashing, what are the preventive measures for it and, most importantly, what is the awareness and concern of consumers towards this practice. More specifically, to analyse this behaviour on the Aragonese population sample (Spanish region).

## **1.2 Purpose of the study**

In order to accomplish our motivation, an online survey was distributed to the Aragonese population. The study analysed the level of environmentalism, consumer scepticism and the effect and awareness of greenwashing of the participants. In addition, it collected the following demographic information: age, sex, field of expertise/study, education level and employment situation.

With the results obtained from the survey, our objective was to:

- Observe the level of environmentalism of a sample of the Aragonese population.
- Study the different behaviours towards the topic of sustainability among the different demographic groups.
- Learn more about greenwashing awareness by interviewing a sample of Aragonese people.

## **1.3 Structure**

Firstly, a revision of the present literature will be conducted. In it, we will start by developing the connection from corporate social responsibility to greenwashing followed by a revision of the concept of greenwashing, its origin and evolution, what drives this practice and how it materialises. In addition, we will observe the social awareness of greenwashing and the present certification and standards that attempt to prevent this practice. Having understood the concept of greenwashing, we will present real cases of both greenwashing firms and real green firms.

Secondly, we will describe and present in more detail the objectives of our research, its results and the analysis that can be taken out from it. To do so, we conducted an analysis of variance in the demographic variables of the survey. This section will study each variable individually to find the most significant differences and similarities between the demographic groups.

Thirdly, the discussion and reflections drawn from the analysis of results will be presented where we will develop the main conclusions from this study.

## **2. THEORETICAL FRAMEWORK**

### **2.1 Corporate Social Responsibility**

Since the last century, the deterioration of our environment and societies are two of the most persistent global concerns. Individuals, governments, activists and media are constantly raising awareness to reduce the impact humanity has on our planet. Said concerns come from the desire to leave future generations a habitable environment and structured and functional societies (Soni, M., 2022; Yadav, S.K., et al., 2022).

Society came to the conclusion that behaviours had to change and action had to be taken, focusing on those that were most impactful on our planet and on the quality of societies: businesses. Consequently, the extent of perceived responsibility organisations increased and, as a result, the concept of Corporate Social Responsibility (CSR) emerged (Bastons, M. et al. 2021).

This study understands CSR as actions taken by an organisation to improve and compensate for the negative social welfare impact their practices have on the environment and on society (Perez Calle et al., 2020; Du et al., 2010). Meaning that an additional responsibility has been added to corporations, no longer they have to produce and sell goods and services but they are also responsible for creating positive value to society, as a compensation for their negative externalities.

The main criticism against CSR claims that instead of making corporations responsible for their impact on society we should be focusing on the impact consumer's decisions have. As Milton Friedman developed in his New York Times article, we cannot make corporations responsible as only humans are able to act responsibly on their actions while a business is simply an "artificial person" and therefore it cannot take fault for the negative consequences of its activity (Friedman, 1970).

### ***2.1.1 Sustainable Corporate Social Responsibility***

As mentioned, there are various types of negative externalities caused by a corporation activity and thus, there are multiple different ways in which corporations undertake CSR, nevertheless, this study focuses on those actions centred on compensating the negative environmental impact.

The WCED defines sustainable development as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987: 41). Applying this definition to a corporate level, sustainability in CSR means that business should behave in a way that is, on one hand, positive for society and the environment in the short term and, on the other hand, guarantees long-term economic development (Porter and Kramer, 2006).

Corporations from all industries are trying to meet the increase of sustainable demand at both firm and product level (Gutierrez-Aragón et al., 2021) Nevertheless, it is most common to find goals focused on the latter. We find products being promoted as “green”, “conscious” or “eco-friendly” in an attempt to appear more sustainable. This strategy of promoting a product based on their positive environmental impact is defined as green marketing (Ioannou et al., 2022; Szabo & Webster, 2021).



## 2.2 Greenwashing

### 2.2.1 Origin and evolution of greenwashing

It is now clear that corporate social responsibility and sustainability are two concepts that should be taken into account when evaluating the strategic decisions of a company. In addition, consumers are more mindful of the environmental impact of their individual actions by being more conscious of their purchasing decisions. This has caused an increase in the attractiveness of environmental and sustainable products (Chen & Chang, 2013).

However, the constant pressure on companies to act more “*sustainable*” and “*be more conscious*” has, in some cases, translated into the practice of “greenwashing”. In this study, greenwashing is understood as the practice of deliberately making misleading or false claims in regards to the environmental impact of the activity, goods or services of a company (Gutierrez-Aragón et al., 2021; Yu et al., 2020; Delmas & Burbano, 2011).

Greenwashing was first presented by Jay Westerveld in 1986 when, in an essay, he explained that organisations spend more resources on advertising and claiming their green practices than on actually executing said environmentally friendly actions (Orange & Cohen, 2010). Nowadays, we can find structured definitions of the concept in dictionaries such as Webster’s New Millennium Dictionary of English or the Concise Oxford Dictionary.

This concept is very present in the conversations of sustainability and ethics, in fact, when searching for the word “*greenwashing*” on Google, 24.700.000 results come out. However, when revising the literature, we find that, in practice, greenwashing is an ambiguous and complex concept. While the main idea is generally agreed upon, there is a lack of specification in the details of what can and cannot be considered greenwashing. In other words, there is no specific guideline that helps us to identify this practice.

### *2.2.2 Drivers and sins of greenwashing*

We now have a better understanding of how greenwashing came to be. Nevertheless, in order to understand the significance of the concept it is necessary to understand what drives it and how it takes place in the real world.

Delmas and Burbano (2011) created a framework that explored the drivers of greenwashing. Their study classified greenwashing firms as those that, while their environmental performance was negative, they actively communicated about it. From this framework we take away the following ideas:

- Pressure from both external and internal market agents to improve a firm's environmental impact. If consumers and investors are willing to alter their behaviour based on the sustainable responsibility of a company, firms will see a benefit in claiming that they are more environmentally responsible than they really are.
- The size, market position, margin and profitability also influence the potential greenwashing behaviour. A “brown firm”, that is, highly profitable firms with a secured position in the market, will be able to communicate more about their (misleading) environmental impact as they will be able to compensate for the potential consequences for their actions.
- The ambiguity of regulations also influence greenwashing behaviour as firms are able to go around legal vagueness to avoid retribution.
- Corporation structure and culture can also drive greenwashing actions. The willingness a manager has to act unethically in order to increase the monetary benefits of the firm is determinant to the likelihood of a firm becoming a “greenwashing firm”.

These drivers are what facilitates companies to conduct the commonly known as “sins of greenwashing”. These were developed by TerraChoice Environmental Marketing in 2009 and revised in 2010 and have been extensively used in the literature. Noteworthy, the sins of greenwashing are focused on product-level actions rather than firm level.

The sins of greenwashing allow us to understand the different ways in which this practice materialises and what are the patterns that permit us to identify it. They state as follows (TerraChoice, 2010; De Freitas Netto et al., 2020; Halverson, 2018):

1. *Sin of the hidden trade off*: claiming a product is “green” based only on a few characteristics of its life cycle. Some examples are: paper, energy and gasoline. In order to produce these goods, there is a negative impact on the environment. It was found that this is the most common sin.
2. *Sin of vagueness*: the purpose of this sin is to mislead consumers due to broad or undefined claims. It occurs when a brand indicates a product is “green”, “all natural”, “eco-friendly” ... but does not develop the statement with proof and when looking into the details it is hard to find the information that supports it.
3. *Sin of no proof*: when a claim or statement does not offer additional information that demonstrates its veracity. It is similar to the sin of vagueness, however, in this case the sin focuses on data statements. A recurrent example found was lights that advertised high energy efficiency but did not offer proof to support the statement.
4. *Sin of irrelevance*: rewarding a product's quality that does not affect the environmental qualities of a product. TerraChoice exemplifies the claims made of the no use of chlorofluorocarbon (CFCs), a chemical that is extremely harmful for the environment but which has been banned in the US for decades, therefore the statement is not relevant to the environmental impact.
5. *Sin of lesser of two evils*: claiming a quality that while it might be environmentally friendly, it distracts the consumer from a bigger negative impact that is not compensated. These truthful claims should however not influence the purchasing decision of consumers if the turning point is sustainability.
6. *Sin of fibbing*: Claims or statements that are not true. In other words, publishing false information, which is a cooperative malpractice. Nevertheless, this sin is the most uncommon one.
7. *Sin of worshipping false labels*: including in the product a label-like image or statement that is not corroborated by an official institution or certification agency. TerraChoice discovered the facility to acquire useless labels.

### ***2.2.3 Social awareness***

Observing the awareness of greenwashing in society is necessary to comprehend the real impact of this practice. In order to do so, we should focus on what impulses the environmental concern of individuals and their level of awareness of the current corporate practices.

The ever growing concern on the environment influences an individual's perceived responsibility. In the same way corporations expand their responsibility through CSR, individuals expand theirs by altering their behaviour and being more aware of how their actions can affect the environment (Bastons et al., 2021). Research shows that consumers worldwide feel a higher environmental responsibility (Szabo & Webster, 2021) and are willing to alter their purchasing behaviours with the purpose of reducing the environmental impact of their actions (Krafft, 2014; Halverson, 2018). However, greenwashing negatively affects the expansion of responsibility of individuals as their purchasing intentions are being affected by a loss of trust.

It is known that consumers count on advertising and other corporate messages to influence their purchasing decisions (Hamann & Kapelus, 2004). Nevertheless, with the increase of greenwashing cases being revealed, consumer trust is being affected. Individuals no longer know what green claims to believe when deciding towards a green product as past greenwashing experiences have affected their purchasing intentions (Nyilasy et al., 2014; Chen & Chang, 2013).

These changes in consumer's perspective regarding green advertisement can be seen as a consequence of an increase in awareness of this malpractice. Research has shown that the public is more demanding towards the veracity of green marketing in comparison to other types of advertisement (Nyilasy et al., 2014).

#### ***2.2.4 Green certifications and standards***

Following the rule of cause and effect, the more people are familiar with “greenwashing”, the more pressure we, as a society, can inflict on companies to “do the right thing”. A visible effect of said increase has been the creation of different regulations, certifications and guidelines that have been put into place in recent years to avoid greenwashed performances.

As we have already established, greenwashing does not have a precise definition, which complicates the real productivity of the present regulations. While greenwashing englobes both a corporation’s environmental behaviour and the misleading advertisement of goods and services, most present legislations refer only to the latter (Delmas & Burbano, 2011).

In addition, while there are some international regulations, usually, each country has its own specific laws, making it easier for multinational corporations to move around the different legal loopholes, making it easier to create uncertainty on their behaviours and facilitating greenwashing practices (Delmas & Burbano, 2011; Aggarwal, 2011; Yu et al., 2020).

Our main focus in this study is those that apply in international and European context, as they could potentially have a higher success at preventing greenwashing practices.

- ISO 14201 is a certifiable standard that “Specifies requirements for self-declared environmental claims, including statements, symbols and graphics, regarding products” (ISO 14021:2016). In addition, we can find detailed descriptions and qualifications required for the utilisation of said environmental claims (Delmas & Burbano, 2011; Aggarwal, 2011).
- ISO 26000 while this standard cannot be certified, it can be used as a guide to assess the commitment and performance of an organisation in a sustainability context. In addition, it provides help for corporations to translate their sustainable goals into actions (ISO 26000).
- EU Ecolabel is a voluntary label offered by the European Union. It certifies “products with a guaranteed, independently-verified low environmental impact” (European Commission). In order to be certified by the EU Ecolabel, the product must meet all the required standards during the entire life cycle.

- EcoCert is an organisation that provides certifications, consulting and training to stakeholders. In order to obtain a EcoCert certification, the product, service or system in question will go through an assessment process made by independent and impartial experts that will confirm that all requirements and standards are met.
- Article 9 of the Sustainable Finance Disclosure Regulation (SFDR), also known as the “Dark Green Funds”. Contrary to the aforementioned certifications that are mainly focused on the product provided, Article 9 explores that a specific fund has as their objective to make sustainable investments and/or reduce the carbon emissions of their activities.
- Sustainability Accounting Standards Board (SASB) and the Global Reporting Initiative (GRI) are non-profit and standardised organisations respectively that also focus on encouraging sustainable practices on the accounting standards (Yu et al., 2020).

While the mere existence of the presented certifications and regulations is already a step forwards on preventing greenwashed and unsustainable practices, there is still a long way to go. Focusing on corporate-level regulations would increase the consequences of behaving unethically and, therefore, preventing the use of untruthful environmental claims. Nevertheless, as mentioned, since greenwashing is not an easily measurable concept, creating these regulations is a great challenge (Delmas & Burbano, 2011).

### **2.3 Green communication**

Now that the drives of greenwashing are understood, it will be studied how it takes form and its presence in society. According to TerraChoice (2010) out of the 5,296 “green” products analysed, over only 4.5% were “sin-free”. The data from this report is more alarming when we observe that between 2009 and 2010 there was an increase of more than 70%. In addition, it was also found that out of the 75% of S&P 500 companies that release their environmental practice, almost all commit at least one of the seven greenwashing sins (Zhang et al., 2018). It is clear that regardless of the unethical perspective of this practice, companies continue committing greenwashing of some sort.

#### ***2.3.1 Greenwashing firms***

There are uncountable cases of greenwashing, whether they have been publicly reported or not. However, some have caused a bigger impact due to the size of the company, the degree of greenwashing or simply the importance it was given at the moment.

Even though greenwashing has been around decades, the Shell scandal in 2007 increased the attention this topic received from the public (Utami et al., 2022). The energy and petrochemical global group published an environmental campaign with the slogan “Don't throw anything away. There is no away.” (Shell, 2007). The advertisement claimed that the group used their waste (more specifically carbon dioxide) for sowing. Activists and media quickly highlighted that Shell greenhouse gas emissions were outstandingly high (Krafft, 2014). After analysing the campaign, the Advertising Standards Authority (ASA) concluded that the wording of the statement was misleading and could be wrongly interpreted (Tryhorn, 2007).

Another major scandal was Volkswagen's (VW) “low-emission” case in 2015. It was discovered by the Environmental Protection Agency (EPA) that the German car manufacturer had been falsifying the CO<sub>2</sub> emissions of their diesel cars. This was accomplished via a “default device” that altered the performance information when being tested. When dismantled, the company admitted their mistake and made managerial changes to hold individuals accountable of the company's malpractice (BBC News, 2015). The company experienced significant backlash from the public all around the world, especially in America, and set as a goal to repair the damages and gain the

confidence back. A noteworthy consequence is that the stock price from car manufacturers was affected by the scandal (Du et al., 2010).

### **2.3.2 Green firm**

Regardless of the drivers of greenwashing and the potential monetary benefits a firm could gain, there are companies that are sustainably responsible and are vocal about it. These are what Delmas and Burbano (2011) classified as “Vocal Green Firms”.

A great example of a “Vocal Green Firm” is the case of outdoor clothing brand Patagonia. The American brand allows their customers to observe in detail the impact of their products in their “Footprint Chronicles” website<sup>1</sup>. In it, they not only demonstrate their “good actions” but hold themselves accountable for their mistakes and show purpose to improve (Delmas and Burbano, 2011). What makes Patagonia’s statement reliable is their transparency and the inclusion of sustainability in product, advertising but also corporate, mission and vision statements.

Nevertheless, it can also be found that while they have good environmental firms, they are not actively communicative about it, these are “Silent Green Firms”. Some examples are Ikea<sup>2</sup> and Lego<sup>3</sup>. When looking into their sustainability reports, we find detailed and supported information regarding their efforts to reduce the negative environmental impact of their activity and products. However, they are not actively communicative about it. Scholars argue that firms follow “silent sustainability” as a preventive method towards greenwashing accusations and its effect on green scepticism (Zhang et al., 2018; Delmas & Burbano, 2011).

## **2.4 Green scepticism**

Greenwashing potentially influences market agents' behaviours and perceptions on sustainability. However, that is not the only negative impact of this practice. Social welfare is negatively affected by greenwashing. On the one hand, firms' benefits and reputation are negatively affected (Walker & Wan, 2012). On the other hand, customers and investors lose trust regarding environmental claims (Zhang et al., 2018).

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<sup>1</sup> <https://www.patagonia.com/our-footprint/>

<sup>2</sup> <https://bit.ly/3nAFGtQ>

<sup>3</sup> <https://bit.ly/3nE7TA6>



In literature, one greenwashing outcome stands out. That is the phenomenon of “green scepticism”. Cambridge dictionary defines scepticism as “an attitude that shows you doubts whether something is true or useful”. Bringing it to our present study, we understand green scepticism as the feeling of distrust and confusion greenwashing creates on consumers. It has been studied that this phenomenon can harm corporations in the long run as it affects customer loyalty (Gutierrez-Aragón et al., 2021).

As it was explored, present regulations are limited and do not cover the broad extent of greenwashing, which can create suspicion on the veracity of a labelled product or certification that claims the environmentalism of it. Thus, a sceptical consumer could perceive green labels as a firm's strategy to attract clients rather than as proof of the sustainable elements of the product (Correira et al., 2023; Delmas & Burbano, 2011).

The consumer perception that firms only use environmental claims as a strategy to increase their profits can be explained through Heider's “Attribution Theory” where he claimed that individuals search for a cause to justify others actions. This theory is based around the idea that, in order to find a justification for events occurring in the environment, individuals seek for internal or external explanations that materialise the occurrence of such (Martinko, M.J., et al., 2019; Harvey, P., et al., 2014) From a sceptical green consumer's perspective, this would make the individual associate environmental claims mainly to the purpose of increasing benefits (Farooq & Wicaksono, 2021).

Green scepticism not only alters consumer behaviour but can also have a negative effect on society as it can affect the awareness that has been raised on the present environmental crisis. If consumers no longer believe green claims, their sense of responsibility to be more conscious of the negative impact of their actions could lose relevance. In fact, research has found that greenwashing can negatively influence the likeability of green products (Sun & Shi, 2022; Chen & Chang, 2013).

### **3. METHODOLOGY**

We now understand that greenwashing could be explained as a corporate strategy that aims to obtain benefits from misleading information regarding the environmental impact of a product or a business' activity. By revising existing literature, we understand the importance of social awareness and the impact greenwashing has on consumers. Regardless, corporations continue conducting greenwashing and, at least in the present future, will continue doing so.

It has been explored what drives corporations to greenwash and which are some of the present regulations and standards that attempt to avoid this practice. There are many factors that influence consumer behaviour such as age, country, profession, income level... For that reason, in this study we will explore how certain demographic factors affect the behaviour of consumers with regards to environmental consciousness, green consumer scepticism and, finally, greenwashing awareness. More specifically, we will study how these demographic characteristics influence the consumer perceptions of a sample of the Aragonese population. The purpose will be to draw conclusions and create profiles that will allow us to comprehend Aragón's residents' consumer behaviours.

#### **3.1 Objectives**

To be able to meet our research goals, the questionnaire contained four levels of analysis:

1. Level of environmentalism: to measure an individual's self-perception of their concern regarding the present environmental situation (Halverson, 2018; Zhang et al., 2018).
2. Consumer scepticism: to observe the participants' feelings towards green marketing, its trust towards it (Hendy & Bayu, 2015; Farooq et al., 2021).
3. Impact of greenwashing: to analyse if past negative green marketing experiences (greenwashing) have affected their purchasing behaviour or consciousness (Gutiérrez Aragón et al., 2022; Farooq et al., 2021).

4. Greenwashing awareness: learn about the overall knowledge of the concept of greenwashing and the importance the participants give to this practice (Halverson, 2018).

In addition, the following demographic information will be collected: age, sex, field of study/expertise, education level and employment. These will allow us not only to cross-analyse the results with respect to the levels of analysis but also to create different profiles regarding the Aragonese population sample.

### **3.4 Survey structure**

The survey was divided into four sections: sustainability, green marketing, greenwashing and demographic data and contained a total of 16 questions. With the exception of one yes/no question, all the others will follow a Likert scale from 0 to 10. In addition, those in the demographic section had multiple choices.

With one exception, all research questions were based on past research on the topic of greenwashing and scepticism. While the survey was conducted in Spanish, some of the original questions were in English and therefore, there are slight differences due to translation purposes. The distributed survey structure with the reference of each question can be found in Appendix 1.

### **3.3 Sample collection**

The study was conducted through a Google Form questionnaire distributed to residents of Aragón. Prior distribution, a pre-test was conducted to 10 participants that provided feedback on the clarity of the questions and the length and topic of the survey. No significant changes were made regarding the structure and content of the questionnaire.

In order to collect responses, the survey was distributed through social media platforms such as LinkedIn, Instagram, Twitter and WhatsApp. The collection period lasted two weeks and a total of 338 responses were obtained.

### **3.4 Descriptive data analysis**

Before entering into the detailed description of the results, it is important to highlight the most significant frequencies of each demographic group as in some cases, these might have influenced the results.

In the variables of age and field of study there is a higher representation of participants between 30 and 54 years (43.2%) and in participants whose field of expertise in Social Sciences and Law (30.2%). These frequencies could affect the representation of the participants from these groups and therefore, we must take it into consideration when analysing the results obtained.

When it comes to the sex of the participant, the responses are fairly distributed with only 12.72% more female participants. Therefore, we can state that there is no bias on this variable.

It is worth noting that a total of 288 participants have a University Degree of which 118 have obtained further qualifications such as Masters and/or PhD. In addition, all respondents have received, at least, the degree of Compulsory Education (or equivalent).

Finally, observing the employment situation of participants, 40.5% are employed by third parties and only 22.2% of the total respondents are students.

## 4. ANALYSIS AND FINDINGS

The total number of responses was 338. Taking into account that the population in Aragón is 1,326,261 in 2021 (INE, 2023), the present study has a confidence interval of 95% and a margin error of 5.33. In order to analyse the results and be able to draw conclusions, first, we will analyse the participants familiarity with the term greenwashing, then, we will analyse the variance in the demographic variables (age, sex, field of expertise, education level and employment) with respect to the presented levels of analysis. The purpose of the analysis is to find the most significant profiles that allow us to understand the Aragonese behaviour towards sustainability and greenwashing.

### 4.1 Descriptive analysis of greenwashing awareness

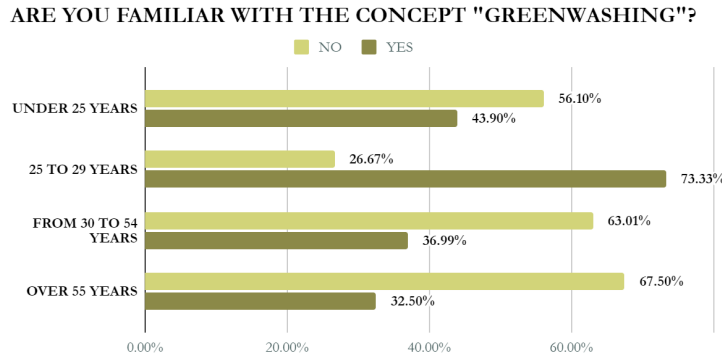
As presented, one of the levels of analysis of this study is to know how aware is this sample of the Aragonese population with direct and indirect greenwashing practices. In order to achieve this, we asked participants if they were familiar with the term “greenwashing.” After answering the question, we presented all participants with a definition of the concept and proceeded to ask about their opinion on the frequency and importance of greenwashing in present society.

In this section of the analysis, we will focus on the response obtained in the first presented question. Our purpose is to be able to quantify how present the concept is in our sample. While it is likely that most customers have experienced direct or indirect greenwashing, not all might be aware of the existence of a concept that defines this practice. In order to analyse the collected data, we used SPSS IBM Statistics, where we crossed the frequencies between each demographic variable and the answer to the research question. The graphs used to describe the obtained results, show the percentage within each group of each of the variables.

Before entering into detail, it is worth highlighting that 40.83% of participants were familiar with the concept while the remaining 59.17% claimed not knowing what greenwashing is. These percentages show us that while awareness does not surpass the majority of this research, it is still fairly present in our sample.

### 4.1.1 Age

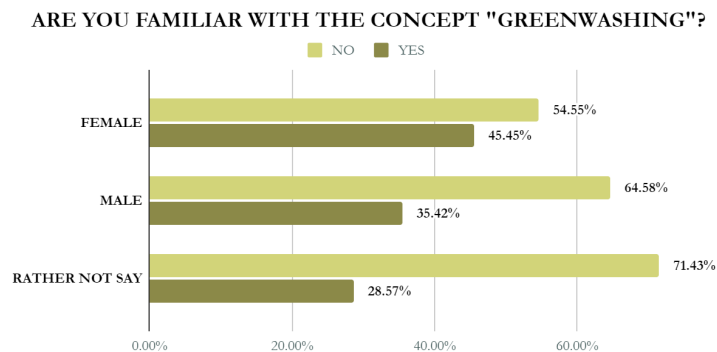
As observed in Graph 1 below, we found that the older participants are less familiar with the term greenwashing as out of the 80 individuals that age above 55 years, 67.5% are unfamiliar with the concept. Nevertheless, we can observe that participants between the ages of 25 and 29 years are more familiar with greenwashing, as 73.33% of individuals, within the age group, knew this concept. These results show that younger participants are more likely to know what greenwashing is.



Graph 1. Greenwashing concept awareness and age of participants

### 4.1.2 Sex

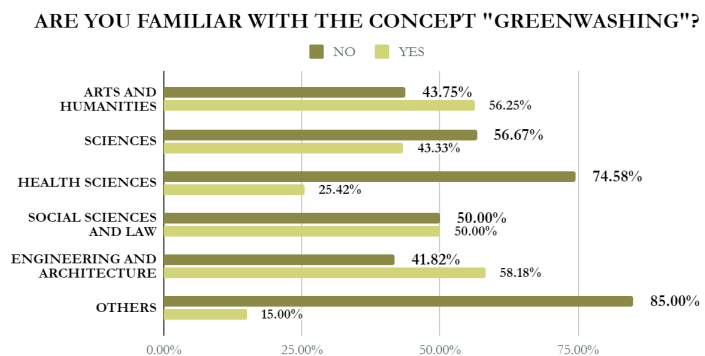
In terms of the sex of participants, we find that participants are more likely to not know the concept regardless of their sex. Nevertheless, as seen in Graph 2 below, female participants are slightly more familiar as 45.45% of female respondents claimed to know what greenwashing was.



Graph 2. Greenwashing concept awareness and sex of participants

### 4.1.3 Field of expertise

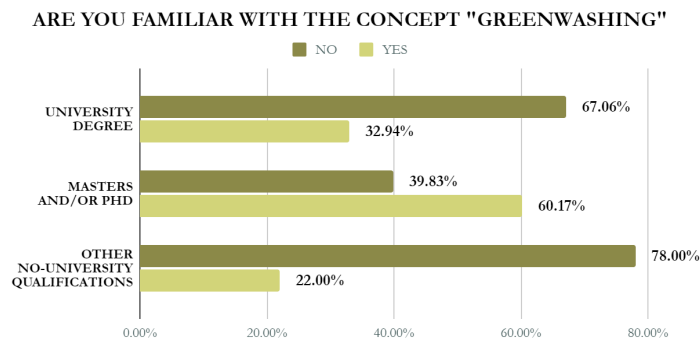
Graph 3 below shows the results regarding the field of expertise of participants. We find that participants within “other” fields are more unfamiliar with greenwashing followed by individuals in the field of health sciences. Opposed to these results, we find that participants within arts and humanities and engineering and architecture fields are more familiar with the concept with results of 56.26% and 58.18% respectively. Finally, it is worth noting that from the 102 participants from the field of social sciences and Law, the results show that there is the same number of individuals that are and are not aware of the concept.



Graph 3. Greenwashing concept awareness and the field of expertise of participants

### 4.1.4 Education level

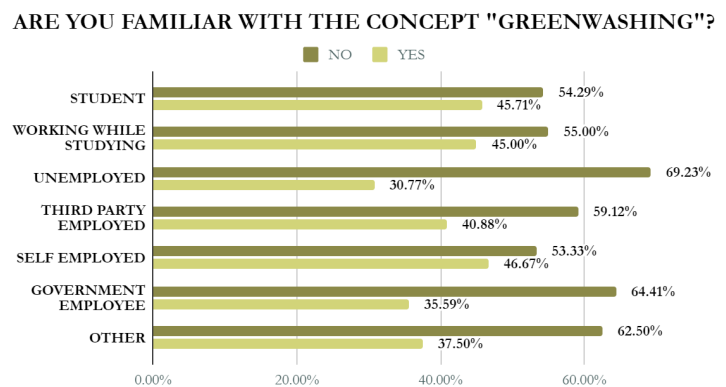
The education level of participants shows interesting results. As seen in Graph 4 below, the higher level of education achieved by participants the more familiar the participants within the group are with greenwashing. From the participants that have obtained a Master's degree and/or PhD, 60.17% know the concept, while from those that have no-university qualifications (compulsory education, vocational training...) only 22% know what greenwashing is.



Graph 4. Greenwashing concept awareness and the education level of participants

#### 4.1.5 Labour market situation

The last demographic variable to be observed is the labour situation of participants. Firstly, as it can be seen in Graph 5 below, when grouping the population based on this specific variable, it is more likely that the individual is unfamiliar with greenwashing. Secondly, from the unemployed participants, only 30.77% knew the concept followed by government employees where 64.41% did not know what greenwashing was. Finally, assuming that most students, both employed and unemployed, are younger than 25 years we observe similar results than what was observed in the variable of age as, overall, students have slightly higher percentages of familiarity than the other groups.



Graph 5. Greenwashing concept awareness and employment of participants

#### 4.2 Identifying the determinant differences in the perspectives on greenwashing

After having observed the awareness the Aragonese population has on the concept of greenwashing, we will continue by analysing the variance between each group of the demographic variables and this research's levels of analysis. We expect to find concordance with the results observed in the greenwashing awareness. The following results were also obtained using SPSS IBM Statistics. The results are measured based on the results from 0 to 10 Likert scale used. Unless stated otherwise, all results were calculated using the analysis of variance (ANOVA) post hoc contrast and the Duncan test at 0.05.



#### ***4.2.1 Age***

As it can be seen in Table 1 below, when we analyse based on the age of the respondent, there are significant differences in perceived environmentalism and the evaluation of greenwashing as a common practice. Results show that participants under 25 grade themselves lower regarding consciousness and worry for the environment than any other age group (6.87 and 7.17 points in the Likert scale respectively).

In addition, we find that participants older than 55 years consider themselves more conscious of environmentalism and sustainability issues (8.11 and 8.33 points respectively). This result coincides with the one found in Gutiérrez-Aragón et al. (2022) where it was concluded that the older Catalan population considered themselves more environmentally aware than the younger population. However, as it was previously analysed, participants over 55 years are less familiar with the concept of greenwashing. These results could suggest that while the older population considers themselves to be more environmentally conscious, their awareness of the technical concepts around the topic is lower.

Nevertheless, as the results show, younger participants feel considerably less attracted to “green” and “eco-friendly” products than the rest of participants. Other studies have also found a negative correlation on environmental responsibility and the attractiveness of green products of young individuals (Sun & Shi, 2022). Our results show that participants between the ages of 30 to 54 are more attracted to green labels which is in accordance with the results found in Halverson (2018).

When evaluating the level of consumer scepticism there were no significant differences between the groups. In addition, the majority of participants showed a neutral attitude on both their feelings towards green marketing claims and their distrust of these sorts of statements. While there were no significant differences either, the participants did show a slightly higher agreement with the statement “companies advertise sustainability because they are solely motivated by profits” with an average ranking of approximately 6 points in the Likert scale.

While no significant differences were found, regardless of the age group, all participants would alter their purchasing behaviour if they knew a company from which they are

clients had used misleading advertising to increase sales (greenwashing). However, overall, participants have not increased their cautiousness with regard to environmental claims.

It is worth highlighting that there is a significant difference (2.93 points) between participants under 25 and those between 25 and 29 years as the latest have increased their cautiousness regarding environmental claims the most. These results concur with the awareness of greenwashing as this section of the population showed a higher familiarity with the concept. A potential reasoning could be that, as a consequence from previous experiences, individuals from this age group would have researched information about misleading green marketing and discovered the concept of greenwashing.

Finally, as it was found in Halverson (2018), when evaluating greenwashing awareness, there is an agreement on evaluating this practice as a current issue. On average, participants have ranked this question around 8 points in the Likert scale. However, participants 30 and older find the practice of greenwashing less common than the younger participants which coincides with their lower familiarity with the term greenwashing.

#### ***4.2.2 Sex***

When studying the analysing the variance in sex, using Duncan at 5%, there were no appreciable differences. Nevertheless, as can be observed in Table 2 below were some slightly more significant differences found in the ANOVA using Duncan at 10% but none significantly appeared in the post hoc analysis. While some researchers concluded that women were more careful towards green marketing (Correira et al., 2023) our results showed the opposite. Nevertheless, other studies obtained similar results regarding the influence of this variable on greenwashing awareness (Gutiérrez-Aragón et al., 2022)

Table 1. Result of the test for significant differences between the levels of analysis and the age of the participants

LEVELS OF ANALYSIS	VARIABLES	Under 25 years (1)	25 to 29 years (2)	30 to 54 years (3)	Over 55 years (4)	F	Duncan test (5%)
Perceived environmentalism	I consider myself to be conscious on the topics of the environment and sustainability	6.87	7.70	8.03	8.11	8.66***	1-2,1-3,1-4
	I am worried about the worsening of the quality of the environment	7.17	8.10	8.58	8.33	9.34***	1-2,1-3,1-4
	When making a purchasing decision, I find "green" or "eco-friendly" products more appealing	4.65	6.23	6.45	6.15	8.98***	1-2,1-3,1-4
Consumer scepticism	"Green marketing" claims are intended to mislead rather than to inform customers	5.13	4.67	4.59	4.78	0.79	-
	I do not believe most green claims made in products and advertising	4.94	4.57	5.37	5.08	1.01	-
	Companies advertise sustainability because they are solely motivated by profits.	6.39	6.80	6.06	5.80	1.38	-
Greenwashing effect on consumer behaviour	If I knew that a company of which I am a consumer was using misleading environmental advertising to increase their sales, I would still buy the same product	3.12	2.80	2.47	3.09	1.11	-
	Previous incidents of companies lying to their customers have made me cautious about the environmental claims of companies	3.40	4.97	4.53	4.10	2.93**	1-2
Greenwashing awareness	"Greenwashing" is a common practice	6.60	7.30	5.80	5.50	6.95***	4-1,4-2,3-1,3-2
	"Greenwashing" is a current problem	8.18	8.97	8.45	8.15	1.11	-

Notes: \*\*\*p-value < 0.01; \*\*p-value < 0.05; \*p-value < 0.10

Table 2. Result of the test for significant differences between the levels of analysis and the sex of the participants

LEVELS OF ANALYSIS	VARIABLES	Female (1)	Male (2)	Rather not say (3)	F	Duncan test (10%)
Perceived environmentalism	I consider myself to be conscious on the topics of the environment and sustainability	7.68	7.76	8.57	0.78	-
	I am worried about the worsening of the quality of the environment	8.29	7.97	7.43	1.49	-
	When making a purchasing decision, I find "green" or "eco-friendly" products more appealing	6.40	5.35	4.71	7.20	-
Consumer scepticism	"Green marketing" claims are intended to mislead rather than to inform customers	4.46	5.17	5.00	3.08**	-
	I do not believe most green claims made in products and advertising	4.94	5.35	5.29	1.00	-
	Companies advertise sustainability because they are solely motivated by profits.	5.91	6.46	5.86	1.81	-
Greenwashing effect on consumer behaviour	If I knew that a company of which I am a consumer was using misleading environmental advertising to increase their sales, I would still buy the same product	2.41	3.35	2.14	4.21	-
	Previous incidents of companies lying to their customers have made me cautious about the environmental claims of companies	4.12	4.20	5.71	0.81	-
Greenwashing awareness	"Greenwashing" is a common practice	5.95	6.14	5.71	0.31	-
	"Greenwashing" is a current problem	8.50	8.21	7.86	0.77	-

Notes: \*\*\*p-value < 0.01; \*\*p-value < 0.05; \*p-value < 0.10

### *4.2.3 Field of expertise*

Next, we wanted to analyse if the study or knowledge field of participants had an impact on the levels of analysis. As it can be seen in the results in Table 3 below, we classified it into 6 groups: Arts and Humanities, Sciences, Health Sciences, Social Sciences and Law, Engineering and Architecture and Others. Results showed significant differences on perceived environmentalism and greenwashing awareness.

Firstly, participants that have studied pure sciences consider themselves to be more environmentally conscious (8.40 points) than those in the field of social science and law and others (7.45 points both). In addition, social science and law participants are also less worried about the quality of the environment than pure science participants (1.61 points difference). When observing the attractiveness of green labels there are more differences among groups. Participants in the fields of engineering and architecture, social science and law and “other” find less appealing green labels than those in arts and humanities. We can observe that, as it occurred in the variable of age, those with lower environmental concern are also less attracted to green labels. Social sciences and law participants (less concerned and lower trust) ranked 7.82 points in their concern about the environment and 5.82 points in their trust towards green labels while, the more preoccupied (sciences) ranked 8.80 and 6.77 respectively. In this variable we find that those with a higher self-perception for environmental awareness are not the most familiar with the concept of greenwashing as those were the participants in the field of engineering and architecture.

Secondly, regarding the levels of analysis of consumer scepticism and greenwashing effect on consumer behaviour, no significant differences were found when conducting the Duncan test. However, looking at the numeric averages, we could observe that Arts and Humanities participants are more doubtful towards the intentions of green marketing claims than those in engineering and architecture fields with averages of 4.03 and 5.42 respectively (lower average meaning higher level of mistrust).

Thirdly, while no significant differences were found, all participants regardless of their field of expertise ranked neutral regarding their mistrust towards green claims. This result is slightly higher when it comes to the behaviour of the corporations.

On the effect of greenwashing on consumer behaviour, we found that participants from all fields would alter their purchasing behaviour if they knew a company had conducted greenwashing and they would likely increase their cautiousness due to previous experiences.

Finally, when observing the level of greenwashing awareness, participants in “Other” fields find greenwashing a less common practice (5.40 points on average) than pure Science, Engineering and Architecture participants (9.30 and 8.45 points respectively). These results coincide with their level of awareness with the concept as participants in “other” fields were the most unfamiliar with greenwashing. Additionally, while on average all participants consider greenwashing to be a current issue, those in the field of Science are more concerned with this issue as the average rating is 9.30 points in the Likert scale.

#### ***4.2.4 Education level***

Even though we have found some significant differences when observing the field of study, not many can be found when analysing the level of education of participants.

As it can be seen in Table 4 below, the only significant difference found when conducting the Duncan Test is in the statement “Greenwashing is a common practice” where participants with further university qualifications (Master's and/or PhD) find greenwashing a more common practice than the rest of the participants of the study, having rated, on average, their concern at 6.7 points. These results also coincide with what was previously stated regarding the awareness of the concept of greenwashing which reinforces the statement that individuals with higher levels of education are more familiar with greenwashing.

Nevertheless, our results are not as conclusive as previous research. Other studies have found higher correlation between the level of education and how it can influence the level of environmentalism, green purchasing decisions and caution towards green claims (Zhang et al., 2018; Choi & Jang, 2015).

Table 3. Result of the test for significant differences between the levels of analysis and the field of expertise of the participants

LEVEL OF ANALYSIS	VARIABLES	Arts and humanities (1)	Sciences (2)	Health sciences (3)	Social sciences and Law (4)	Engineering Architecture (5)	Other (6)	F	Duncan test (5%)
Perceived environmentalism	I consider myself to be conscious on the topics of the environment and sustainability	7.69	8.40	8.07	7.45	7.89	7.45	1.97*	4-2, 6-2
	I am worried about the worsening of the quality of the environment	8.00	8.80	8.53	7.82	8.09	8.07	1.61	4-2
	When making a purchasing decision, I find "green" or "eco-friendly" products more appealing	7.03	6.77	5.93	5.82	5.55	5.40	2.45**	4-2,5-1, 5-2,6-1,6-2
Consumer scepticism	"Green marketing" claims are intended to mislead rather than to inform customers	4.03	4.37	4.41	5.02	5.42	4.72	1.79	1-5
	I do not believe most green claims made in products and advertising	4.81	5.07	5.03	5.04	5.36	5.33	0.29	-
	Companies advertise sustainability because they are solely motivated by profits.	5.88	5.63	6.42	6.25	6.42	5.83	0.75	-
Greenwashing effect on consumer behaviour	If I knew that a company of which I am a consumer was using misleading environmental advertising to increase their sales, I would still buy the same product	2.34	2.40	2.54	3.03	3.07	2.42	1.18	-
	Previous incidents of companies lying to their customers have made me cautious about the environmental claims of companies	3.72	4.43	4.10	4.19	4.58	4.03	0.36	-
Greenwashing awareness	"Greenwashing" is a common practice	6.22	6.37	5.75	6.17	6.56	5.40	2.12*	6-2,6-5
	"Greenwashing" is a current problem	8.59	9.30	8.10	8.34	8.45	7.97	1.53	3-2,6-2

Notes: \*\*\*p-value < 0.01; \*\*p-value < 0.05; \*p-value < 0.10

Table 4. Result of the test for significant differences between the levels of analysis and the education level of the participants

LEVEL OF ANALYSIS	VARIABLES	University degree (1)	Masters and/or PhD (2)	Other no-university qualifications (3)	F	Duncan test (5%)
Perceived environmentalism	I consider myself to be conscious on the topics of the environment and sustainability	7.94	7.69	7.40	1.55	-
	I am worried about the worsening of the quality of the environment	8.08	8.19	8.20	0.15	-
	When making a purchasing decision, I find "green" or "eco-friendly" products more appealing	5.93	5.98	5.74	0.15	-
Consumer scepticism	"Green marketing" claims are intended to mislead rather than to inform customers	4.65	5.05	4.54	1.08	-
	I do not believe most green claims made in products and advertising	4.96	5.29	5.30	0.67	-
	Companies advertise sustainability because they are solely motivated by profits.	5.89	6.36	6.48	1.61	-
Greenwashing effect on consumer behaviour	If I knew that a company of which I am a consumer was using misleading environmental advertising to increase their sales, I would still buy the same product	3.03	2.69	2.32	1.19	-
	Previous incidents of companies lying to their customers have made me cautious about the environmental claims of companies	4.11	4.5	3.72	1.11	-
Greenwashing awareness	"Greenwashing" is a common practice	5.68	6.70	5.60	7.67 ***	1-2,3-2
	"Greenwashing" is a current problem	8.29	8.59	8.04	1.11	-

Notes: \*\*\*p-value < 0.01; \*\*p-value < 0.05; \*p-value < 0.10



#### ***4.2.5 Labour market situation***

The last variable we analysed was the market labour status of participants. We have divided the respondents into seven groups: students, students while working, unemployed (also includes those seeking first employment), third party employees, government employees, self-employed individuals and others. The reasoning behind this selection is to be able to create more specific groups rather than only based on their situation within the labour market. As it can be observed in Table 5 below, significant differences among groups were found in all levels of analysis with the exception of greenwashing awareness where the Duncan Test found no significant difference among the groups.

When observing the level of environmentalism, we found that students (with and without a job) have a lower perceived consciousness and worry about the quality of the environment and sustainability than the rest of participants (4.32 points variation among groups). Nevertheless, these results are contradictory to the previously found data regarding the awareness of greenwashing where students were more likely to know what greenwashing was. It is worth highlighting that students have also the lowest trust towards green labels (4.30 points on average), if we presume that most of the participants under 25 are students, this result matched the one obtained in the ANOVA results of the age variable where participants under 25 years ranked an average of 4.65 points in their trust towards green labels.

Additionally, we can observe that self-employed participants have, on average, ranked higher on environmental awareness (8.60 points) and green label trust (6.70 points). Participants in the group of “Other” have also ranked higher in this level of analysis, however, we cannot specify their market labour situation. These results coincide with the conclusions drawn in Gutierrez-Aragón et al., (2020). In addition, the results on this variable also allow us to conclude that the self-perception of environmentalism of participants does not seem to be related to the awareness of greenwashing as self-employed participants were not the most familiar with the term.

As it occurred in all the previous variables, there are no significant differences among the groups in their level of green scepticism. Nevertheless, we can observe that the average results for the level of mistrust towards companies' intentions are slightly higher than the other statements presented in this level of analysis as participants'

perception of firms intentions ranked around the 6 points in the Likert scale while green claims miss trust ranked around the 5 point mark.

Self-employed participants are more likely to alter their consumer behaviour after experiencing greenwashing (2.10 points) while unemployed participants did not feel as confident on altering their purchasing decisions (4.60 points were higher average means a lower intention). These results are also reflected in the increase of caution after experiencing greenwashing where, self-employed (4.60 points) increased their caution more than unemployed participants (5.40 points were higher result means less alteration of caution).

Finally, when observing the greenwashing awareness of consumers, we find that employed students and "others" found greenwashing a more frequent practice (6.30 and 7 points respectively) than unemployed participants (5 points). It was also found that self-employed participants consider greenwashing to be a more current problem than the rest of respondents. In contrast, unemployed participants are less concerned about the issue of greenwashing which is, once again, supported by the percentage of unemployed participants that were familiar with the concept. It is worth mentioning that, on the previously explored variables, there were less significant differences found in the last statement while, when analysing the results based labour market status, we found multiple significant differences. Nevertheless, the rating on average was higher than 7 in all groups. Opposite to what was found in other variables, we find no similarities on the results from the ANOVAS and the familiarity of greenwashing awareness when analysing the employment of participants.

Table 5. Result of the test for significant differences between the levels of analysis and the employment situation of the participants

LEVEL OF ANALYSIS	VARIABLES	Student (1)	Working while studying (3)	Unemployed *(3)	Third party employed (4)	Self-employed (5)	Government employee (6)	Other (7)	F	Duncan test (5%)
Perceived environmentalism	I consider myself to be conscious on the topics of the environment and sustainability	6.74	7.05	7.92	7.74	8.30	8.19	8.42	4.32 ***	1-3,1-4,1-5,1-6,1-7,2-5,2-6,2-7
	I am worried about the worsening of the quality of the environment	7.10	7.70	8.10	8.20	8.60	8.40	8.90	2.91 **	1-5,1-6,1-7 2-7
	When making a purchasing decision, I find "green" or "eco-friendly" products more appealing	4.30	4.90	6.80	6.10	6.70	6.30	6.30	4.35 ***	1-3,1-4,1-5,1-6,1-7,2-5,2-7
Consumer scepticism	"Green marketing" claims are intended to mislead rather than to inform customers	5.60	5.20	4.80	4.40	5.60	4.30	5.30	2.37 *	-
	I do not believe most green claims made in products and advertising	5.30	4.90	5.70	5.00	5.30	4.80	5.90	0.69	-
	Companies advertise sustainability because they are solely motivated by profits.	6.70	6.60	6.20	5.70	6.50	6.00	7.00	1.58	-
Greenwashing effect on consumer behaviour	If I knew that a company of which I am a consumer was using misleading environmental advertising to increase their sales, I would still buy the same product	3.20	4.20	4.60	4.40	2.10	3.80	5.40	1.64	3-7,1-7
	Previous incidents of companies lying to their customers have made me cautious about the environmental claims of companies	3.20	4.20	2.90	4.40	4.60	3.80	5.40	1,69	1-7, 3-7
Greenwashing awareness	"Greenwashing" is a common practice	6.30	7.00	5.00	5.80	6.00	5.60	7.00	2.83 **	3-7, 6-7
	"Greenwashing" is a current problem	7.80	8.90	7.00	8.30	9.30	8.40	8.20	2.46 **	1-5, 3-2, 3-5, 3-6

Notes: (\*) Unemployed also includes participants looking for their first job  
 \*\*\*p-value < 0.01; \*\*p-value < 0.05; \*p-value < 0.10

## 5. DISCUSSION AND CONCLUSIONS

After analysing the results obtained in our research, we are able to draw conclusions that help us understand this study's sample of the Aragonese population behaviour when it comes to sustainability, green marketing and, finally, greenwashing.

The first main conclusion we can draw from our study is that younger individuals and, more specifically, students, consider themselves less environmentally concerned and conscious than the rest of the population. However, we found that this section of the sample is also more familiar with the concept of greenwashing. Considering that it wasn't until the late 90s that the world started to comprehend the meaning of greenwashing (Utami et al., 2022) it is comprehensible that participants under 30 are more familiar with the concept as it has been more present in the media during their upbringing. Regardless, we have to consider that the level of environmentalism was based on the participants' self-perception which could be influenced by an individual's scale of what being environmentally conscious means. Therefore, we can conclude that, while younger individuals have a lower self-evaluation of their environmental awareness and concern, they are more familiar with what greenwashing is.

Next, after observing all the results, we can conclude that there seems to be no significant influence of the analysed variables with regards to consumer scepticism. Nevertheless, we observed that in all variables, the mistrust towards the company's intentions was higher than towards the green products and advertisements themselves. As it was explored during the literature review, one of the many consequences of greenwashing is the loss of trust customers have towards not only green claims but also firm statements and intentions. Our research has shown that customers from our sample have a lower trust on the purposes of firms when using green marketing strategies.

When classifying our population based on their market labour situation, self-employed participants showed a higher concern for the environment and a higher trust for green labels. In addition, this section of the population is also more likely to alter their purchasing decisions based on greenwashing actions of firms and find this strategy a more current issue than that of the rest of participants. Further research on what

influences this behaviour could be conducted in order to comprehend what has imposed these results.

This study concludes that there seems to be a correlation between the level of education achieved and the greenwashing awareness as those individuals with a Master's degree and/or PhD are not only more familiar with the concept but also find it a more frequent and problematic practice. Nevertheless, we found that the level of education does not influence the environmental awareness of the population and their behaviour towards green marketing.

Regardless of the education level, we found that the field of expertise had a more significant effect on the levels of analysis. Those individuals in the field of science claimed a higher environmental consciousness and showed a higher level of trust in green labels. While further research would be needed to conclude the reasoning, we could suggest that these results are due to the more advanced knowledge science individuals have on the technicalities of greenwashing claims as companies used specific scientific words (such as chemical ingredients) with the purpose of misleading the average consumer.

In terms of the greenwashing awareness of this sample, we have found that the familiarity with the term does not signify a higher self-evaluation of environmental awareness. In addition, those that were more unfamiliar with the concept of greenwashing were also less likely to identify it as a common practice. Nevertheless, after being presented with the definition of the concept, we observed that, on average, all participants, regardless of the variable they had been grouped on, consider this practice to be a current issue which shows that in spite of each individual's perceptions, this study's population is able to identify it as a present problem in our society. It demonstrates that the consumers are able to comprehend the existence of this strategy and identify its definition as a malpractice.

In summary, this research has found that age, labour market situation and the field of expertise are three variables that have the highest effect on the perceived environmentalism, purchasing decisions and greenwashing awareness of this sample of the Aragonese population. It has also shown that there are no apparent influences of green scepticism with regards to green claims but nevertheless, there is a low but existent level of mistrust towards these statements and the intentions of firms and, finally, we have observed that these group of consumers finds greenwashing a current practice and a present issue in our society.

As it has been explored during this study, greenwashing is real and is currently conducted by companies from all over the world to take advantage of the growing environmental concern of society. Nevertheless, consumers are catching on and are being able to identify this practice and alter their purchasing decisions as a negative reaction towards the companies that conduct it which allow us to believe that, in the future, society could achieve to reduce, regulate and prevent this practice altogether.

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# APPENDIX

## 1. Survey

### MARKETING VERDE Y SOSTENIBILIDAD

¡Hola! Estoy realizando un estudio para analizar el conocimiento de los consumidores sobre el marketing verde y la sostenibilidad. La encuesta te llevará menos de 5 minutos y no es necesario tener información previa sobre el tema para poder realizarla.

Esta encuesta forma parte de un Trabajo de Fin de Grado (Universidad de Zaragoza). Tu respuesta será utilizada de manera anónima con el objetivo de analizar el conocimiento general del consumidor.

### SOSTENIBILIDAD

Por favor, indique su grado de acuerdo o desacuerdo con las siguientes afirmaciones siendo 0 “Totalmente en desacuerdo” y 10 “Totalmente de acuerdo”

1. Me considero una persona concienciada con el medioambiente y la sostenibilidad - Halverson, R. (2018). *Consumer perceptions of greenwashing: Understanding awareness, trust, and effectiveness.*

0 1 2 3 4 5 6 7 8 9 10

2. Me inquieta el empeoramiento del medioambiente- Zhang et al. / *Journal of Cleaner Production* 187 (2018) 740-750

0 1 2 3 4 5 6 7 8 9 10

3. En mi decisión de compra, los productos “verde” o “eco-friendly” me resultan más atractivos - Halverson, R. (2018). *Consumer perceptions of greenwashing: Understanding awareness, trust, and effectiveness.*

0 1 2 3 4 5 6 7 8 9 10

### MARKETING VERDE

El "*marketing verde*" es la estrategia empresarial que publicita la reducción del impacto medioambiental de un producto o servicio

Por favor, indique su grado de acuerdo o desacuerdo con las siguientes afirmaciones siendo 0 “Totalmente en desacuerdo” y 10 “Totalmente de acuerdo”

4. El "*marketing verde*" pretende engañar al consumidor en vez de informarle - Hendy, M. A., & Bayu, S. (2015). *The Extended Consequence of Greenwashing: Perceived Consumer Scepticism. International Journal of Business and Information*, 10(4), 433-468.

0 1 2 3 4 5 6 7 8 9 10

5. No me creo las afirmaciones sostenibles que aparecen en las etiquetas de los productos o anuncios - Hendy , M. A., & Bayu , S. (2015). The Extended Consequence of Greenwashing: Perceived Consumer Scepticism. *International Journal of Business and Information*, 10(4), 433–468.

0 1 2 3 4 5 6 7 8 9 10

6. Las empresas hacen campañas sobre sostenibilidad únicamente para conseguir mayores beneficios económicos - Farooq, Y., & Wicaksono, H. (2021). Advancing on the analysis of causes and consequences of green skepticism. *Journal of Cleaner Production*, 320, 128927.

0 1 2 3 4 5 6 7 8 9 10

7. Si descubriera que una empresa de la cual soy consumidor utiliza publicidad engañosa sobre el medio ambiente para aumentar sus ventas, seguiría comprando el mismo producto - Gutiérrez Aragón, Ó., Gassiot Melian, A., & Nebot López, A. (2022). Comportamiento de compra y actitud ante el greenwashing. Estudio comparativo entre consumidores de territorios con diferente desarrollo económico. *Revista Universidad & Empresa*, 24(42), 1-29.

0 1 2 3 4 5 6 7 8 9 10

8. Casos anteriores de empresas utilizando "marketing verde" engañoso me han hecho ser más cuidadoso ante este tipo de declaraciones - Farooq, Y., & Wicaksono, H. (2021). Advancing on the analysis of causes and consequences of green skepticism. *Journal of Cleaner Production*, 320, 128927

0 1 2 3 4 5 6 7 8 9 10

9. ¿Conoces el término “greenwashing”?

Sí No

## **GREENWASHING**

El “greenwashing” se produce cuando una empresa hace declaraciones medioambientales falsas o infundadas sobre el bajo impacto medioambiental de sus productos o servicios

Por favor, indique su grado de acuerdo o desacuerdo con las siguientes afirmaciones siendo 0 “Totalmente en desacuerdo” y 10 “Totalmente de acuerdo”

10. El “greenwashing es una práctica común - Halverson, R. (2018). *Consumer perceptions of greenwashing: Understanding awareness, trust, and effectiveness*.

0 1 2 3 4 5 6 7 8 9 10

11. El “greenwashing” es un problema actual - Halverson, R. (2018). *Consumer perceptions of greenwashing: Understanding awareness, trust, and effectiveness*.

0 1 2 3 4 5 6 7 8 9 10

## **DATOS DEMOGRÁFICOS**

Para finalizar, por favor, conteste a las siguientes preguntas. Estos datos son anónimos y se utilizarán única y exclusivamente para análisis estadístico

### 12. EDAD

- Menos de 20 años
- De 20 a 24 años
- De 25 a 29 años
- De 30 a 54 años
- De 55 a 65 años
- Más de 65 años

### 13. SEXO

- Femenino
- Masculino
- Prefiero no decirlo

### 14. RAMA DE ESTUDIOS/CONOCIMIENTO

- Artes y humanidades
- Ciencias
- Ciencias de la salud
- Ciencias sociales y jurídicas
- Ingenierías y arquitectura
- Otra

### 15. ÚLTIMO NIVEL DE ESTUDIOS ALCANZADO

- Educación obligatoria
- Formación profesional
- Bachillerato
- Estudios Universitarios (diploma, licenciatura, grado...)
- Estudios Universitarios Superiores (máster y/o doctorado)
- Sin estudios

### 16. SITUACIÓN LABORAL

- Estudiantes
- Estudiante y compaginando con trabajo
- En búsqueda del primer empleo
- Trabajador por cuenta ajena
- Autónomo
- Funcionario
- Desempleado
- Otra

