BOOSTING GREEN CONSUMPTION

The influence of quantitative online consumer reviews on consumer's perceptions, willingness to pay and purchase intention of environmentally friendly products

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ABSTRACT

Climate change is one of the hottest topics nowadays, and it is necessary to modify consumption behaviours in order to reduce consumers' damage on the environment caused by their purchase decisions.

Literature reveals that sustainable consumption is hindered by economic constraints, perceived risk, products' quality and technical attributes importance and by brand image. An online questionnaire was conducted to study the ability of quantitative online consumer reviews to change customers' perceptions about green products, namely, perceived trust and perceived quality and performance, as well as to increase the willingness to pay for these products and rise its purchase intention.

Findings reveal that quantitative OCRS positively change the perceptions that consumers have about sustainable products regarding trust, quality and performance. It is also proved the positive impact that perceived trust towards the product has on willingness to pay and purchase intention of sustainable products. Consumers' perceived quality and performance also have a positive impact both on willingness to pay for green products and on its purchase intention.

Moreover, in the presence of OCRs, consumers' willingness to pay for green products is not higher than without its presence, although they have a significant direct impact on consumers' willingness to pay. Additionally, OCRs do not have a direct impact on green purchase intention, nor the latest is higher when in their presence. However, OCRs are proved to have an indirect effect both on willingness to pay and purchase intention, being mediated by perceived trust and perceived quality and performance.

Keywords: green marketing; green consumption; green products; online consumer reviews, product reviews

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RESUMO

As alterações climáticas são um dos temas mais importantes atualmente, sendo necessário modificar os comportamentos de consumo para reduzir os danos no meio ambiente.

A literatura revela que o consumo sustentável é impedido por restrições económicas, pela perceção de risco que os consumidores têm relativamente ao produto, à sua qualidade e atributos técnicos, bem como pela imagem da marca. Um questionário online foi realizado de modo a estudar a capacidade das avaliações quantitativas do consumidor online de aumentar a disposição de pagar por produtos sustentáveis e sua a intenção de compra, bem como mudar a perceção que os consumidores têm sobre os mesmos.

O estudo revela que avaliações quantitativas mudam positivamente as perceções dos consumidores sobre produtos sustentáveis relativamente ao quão confiáveis são, e à qualidade e desempenho. É também provado o impacto positivo que a perceção de confiança relativamente ao produto tem na disposição de pagar e na intenção de compra de produtos sustentáveis, tal como as perceções de qualidade e desempenho.

Adicionalmente, na presença de avaliações, a disposição dos consumidores de pagar por produtos sustentáveis não é maior do que sem a sua presença, embora tenham um impacto direto significativo na disposição de pagar. É também provado que as avaliações não têm impacto direto na intenção de compra sustentável, nem esta última é maior na sua presença. No entanto, as avaliações têm um efeito indireto tanto na disposição de pagar como na intenção de compra de produtos sustentáveis, sendo mediadas pelas perceções de confiança, qualidade e desempenho.

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1. INTRODUCTION

1.1. Problem definition and Relevance

The past decades have been marked by a rapid economic growth at a global level largely due to the increasing consumption trends worldwide. The problem is that these consumption patterns and the behaviour of the society, mainly in regard to its choices, have, as its main outcome, the deterioration of the environment caused by the over-utilization of natural resources (Chen & Chai, 2010). The consequences of environmental degradation are several, from global warming, to the depletion of stratospheric ozone layer, pollution of sea and rivers, noise and light pollution, acid rain and desertification (Chen & Chai, 2010).

Climate change is, therefore, one of the biggest problems the world faces nowadays and is a topic that has been gathering attention in the last few years due to its complexity and the urgent need to act to save the planet.

As consumers become aware of the environmental status quo and gain knowledge about the consequences of their actions, they start to give more importance to environmentally friendly purchases (Gleim et al., 2013). However, these increasing environmental conscious attitudes do not necessarily translate into consumers' environmental conscious consumption behaviour. Despite consumers' environmental awareness and positive attitudes towards the environment, literature have revealed an inconsistency between green attitudes and behaviour (Pickett-Baker & Ozaki, 2008). This problem is known as "green attitude-behaviour gap" (Joshi & Rahman, 2015).

This "green attitude-behaviour gap" remains a concern for social marketeers and policymakers (Moraes et al., 2012) as the "current levels of consumption and consumers' choices are not environmentally sustainable" (Johnstone & Tan, 2015, p. 312). Therefore, consumption behaviour needs to change and become greener.

Previous literature has identified several barriers to the purchase of green products and that contribute to the attitude-behaviour gap. Among others, some of the green barriers identified are the economic ones – price, time and search costs – (Gleim et al., 2013), brand importance (Young et al., 2010), quality risk (Aertsens et al., 2011) and technical attributes importance (Chen & Chang, 2012). All these barriers jeopardize the perception that consumers have regarding green products and prevent them from having a green

consumption, despite being environmental aware. This paper suggests the contribution of digital marketing to solve or at least improve some of the factors that hinder green consumption, more specifically, the power of quantitative online consumer reviews to boost green consumption.

Online product reviews, a form of eWOM, have emerged as an important source of information for customers to evaluate products prior to purchase (Cui et al., 2012) and are now considered the most important one (Schlosser, 2011).

Former studies have outlined the outcomes of online customer reviews (OCRs) on an individual level. OCRs are found to have an impact on consumers' perceived risk (Kostyra et al., 2016), brand importance (Erdem & Swait, 1998), willingness to pay (Erdem et al., 2002) and on quality and performance perception (Joshi & Rahman, 2015). All these outcomes influence consumers' purchase intention of conventional products (Kostyra et al., 2016) .

1.2. Research objective and questions

The purpose of this study is to understand if the willingness to pay for sustainable products is higher in the presence of OCRs, if they can increase green purchase intention and if they are able to change consumer perceptions regarding sustainable products. In summary, this study seeks to answer three research questions:

RQ1: Is the willingness to pay for green products higher in the presence of online customer reviews?

RQ2: Are online customer reviews able to boost green consumption?

RQ3: Can online customer reviews influence the perception of green products?

This paper examines literature on the green attitude-behaviour gap, the barriers associated with green consumption and what prevents consumers from buying environmentally friendly products; reviews the outcomes of online customer reviews on an individual level, i.e., the factors that influence consumers to change their perceptions about products, and the effect of those factors on the willingness to pay and purchase intention of non-sustainable products.

It is also evaluated in this study, through quantitative research, the effect of the OCRs on consumer's perceptions of green products, their willingness to pay and green purchase intention, in order to assess OCRs' ability to overcome some of the green barriers and increase sustainable consumption.

2. LITERATURE REVIEW

2.1. Barriers to Green Consumption

Green consumption consists in "consumption behaviours that are perceived by people to have either a nil, minimal or reduced impact on the environment" (Johnstone & Tan, 2015, p. 312). It is related to the consumption of sustainable products by consumers that consider their environmental impact when purchasing, using and disposing products. (Moisander, 2007).

Environmentally responsible purchasing is vital to prevent and decrease environmental damage as consumer household purchases are responsible for 70% of greenhouse gases (United Nations, 2014). Consumers have the power to change this situation by purchasing green products (Joshi & Rahman, 2015).

Green consumption is commonly measured as green purchase intention and behaviour and indicates consumers' willingness to purchase green products (Joshi & Rahman, 2015). A green product is the one that satisfies consumers' needs while avoiding environmental damage (Joshi & Rahman, 2015), the one that is produced with concern for the physical environment (Shrum et al., 1995). It is the product that consumers perceive as being sustainable either due to its manufacturing process, materials used, packaging, distribution or marketing communications (green marketing), among others (Johnstone and Tan, 2015).

Despite consumers' growing environmental consciousness and their positive attitudes about the environment, several studies reveal an inconsistency between green attitudes and behaviours (Carrigan & Attalla, 2001; Chatzidakis et al., 2004). This means that consumers' consumption behaviour is not as green as it was expected, based on their positive attitudes and beliefs towards the environment (Gleim et al., 2013). Sustainable products' market share still represents a small fraction of the overall demand (Luchs et al., 2010), remaining to 16% of the entire American FMCG market in 2018 (Statista, 2020). This situation is identified as green attitude-behaviour gap.

Literature reveals that, despite consumers' pro-environmental attitudes and beliefs, their perceptions of green products, consumption, consumers or communications help to explain the green attitude-behaviour gap (Johnstone & Tan, 2015). Also, the fact that environmental gains

are hard to perceive, since they involve a certain level of uncertainty and are not immediate to benefit the consumer, emphasizes the gap (Johnstone & Tan, 2015).

Consumers' attitudes and behaviours are often shaped by their perceptual interpretations and judgements of several aspects: trust, risk, performance, price, quality, sacrifice and pro-social status (Borin et al., 2013; Y. S. Chen & Chang, 2013; Zabkar & Hosta, 2013). Moreover, lack of information and cynicism are also found to affect ethical consumption decisions (Bray et al., 2011). These are some of the reasons why consumers choose not to buy greener products, and are claimed as green barriers (Gupta & Ogden, 2009).

Consumers believe that "it is too hard to be green" due to economic constraints, lack of knowledge and perceived sacrifice. Also, some consumers suffer from what is called "green stigma", since they are less willing to follow a green consumption due to their unfavourable perceptions of green customers, who are considered as people that like to impose their beliefs onto others. Furthermore, consumers are also found to have difficulties in understanding green marketing communications, which leads to "green reservations" (Johnstone & Tan, 2015).

Normative influences, combined with trust and credibility, also affect green behaviour (Osterhus, 1997). Since decision-making is largely influenced by peers (Childers & Rao, 1992), and given that most consumers do not follow a green consumption, one has very little incentive to pay a higher price for, or seek out, green products, despite having positive attitudes towards environmental claims and causes (Gleim et al., 2013).

Even though literature has identified several factors that hinder green consumption, this paper focuses on identifying and studying a solution to overcome the economic constraints, consumers' perceived uncertainty, the quality and performance risk, and the brand importance.

2.1.1. Economic Constraints

Economic costs are considered to have the strongest influence on consumers' purchasing behaviour of green products (Osterhus, 1997).

Price is the attribute that has the greatest adverse effect on green consumption, being the barrier most commonly identified by consumers (Gleim et al., 2013) as green products are often priced higher than non-green ones due to their expensive manufacturing process and materials used (Luchs et al., 2010). If consumers feel that green products are priced too high, green

consumption is impeded. Moreover, theory suggests that lack of economic resources is found to amplify even more the effect of price (Connell, 2010).

Although being the biggest barrier to follow a green consumption, price is not likely to be easily modified by retailers due to the high costs of green manufacturing. However, it is nevertheless important that green products are perceived to have a good cost-benefit ratio and thus being perceived as worth it, or at least to have a higher value than the non-green alternatives, in order to increase consumers' willingness to pay (Gleim et al., 2013).

Nevertheless, economic constraints do not only refer to price. The time and effort needed to evaluate and search for green products is also included, acting as barriers as well (Gleim et al., 2013). Green products that are perceived as too expensive or too time-consuming jeopardize consumers' likelihood to conduct an extensive information search (Petty & Caccioppo, 1986) since it might influence whether they believe they can perform the behaviour or not (Johnstone & Tan, 2015).

2.1.2. Perceived Quality Risk & Technical Attributes Importance

Perceived product quality positively influences consumers' green purchasing intention (Aertsens et al., 2011).

Most consumers are reluctant to purchase green products, either due to a previous bad experience with a green product or because they are not certain about product quality and, thus, unwilling to purchase it (Gleim et al., 2013). Furthermore, consumers' trust on green products is also affected by the perception that there is a trade-off between products' technical attributes (quality and performance) and socially responsible attributes (environmental friendliness) (Joshi & Rahman, 2015).

Regarding products' technical attributes, they positively influence green products' purchase (Chen & Chang, 2012). Consumers value technical attributes (that fulfil their needs and expectations) the most over its ethical and sustainable characteristics (Chen & Lobo, 2012; Tsakiridou et al., 2008). Products' technical and sustainable attributes, combined with high quality, positively drive consumers to purchase. Contrary, products that are environmentally friendly, but perceived as from inferior performance, create a dilemma between consumers'

personal needs and their sense of environmental and social responsibility (Joshi & Rahman, 2015).

Moreover, literature argues that consumers consider environmentally friendliness as an asset. However, there is also evidence that increasing product ethically may not always increase preference. According to Luchs et al. (2010), the effect of sustainability on consumers' preference and consequent purchase intention is not uniformly positive (or negative), as it also affects consumers' perceptions and judgements about other attributes of the product, mainly performance and quality. There are situations (e.g., hand sanitizer) in which the benefit of sustainability is offset to such an extent that consumers prefer less sustainable products. Even though they may care about ethical issues when considering alternative products to purchase, most of the times, consumers perceive the non-sustainable alternative to be from higher quality and performance compared to the green one, since the latest is sustainable (Luchs et al., 2010).

2.1.3. Brand Image

Brand image is another important factor influencing green purchasing. When assessing a green product, the trust attributed to the organization offering that product has a direct and important influence on consumers' perceptions of that product (Joshi & Rahman, 2015).

In what regards to green consumption, brand image can be defined as "a whole range of impressions, conceptions and apprehensions towards a brand in the customers' memory which is correlated to the sustainability and eco-friendly concerns" (Chen, 2010, p. 312). Previous research papers found that positive brand image builds trust in the green characteristics of products and stimulates its purchase. On the other hand, when a company with a weak brand image offers a green product, it is not perceived as good as from a strong brand, impeding green consumption (Young et al., 2010).

Brand plays an important role on the criteria influencing purchase decisions (Rahbar & Wahid, 2011) since most consumers have their already established favourite brands (Young et al., 2010). Moreover, consumers' loyalty to a traditional product or brand contributes to the unwillingness to incur in search costs (Gleim et al., 2013).

2.2. Online Consumer Reviews

Word of mouth (WOM) is considered to be the most effective marketing tool, being extremely powerful and having a much stronger impact on consumers than other marketing techniques (Trusov et al., 2009).

The Internet has changed the way people behave, including the way consumers search for information and, more importantly, the way they shop. As a consequence, traditional WOM has now an electronic component — electronic WOM (eWOM) (King et al., 2014).

eWOM is defined as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet" (Hennig-Thurau et al., 2004, p. 39). It allows consumers to exchange product-related information and make informed purchase decisions via online (Dellarocas, 2003). eWOM has been gaining importance (Trusov et al., 2009) since it has several individual-level outcomes, from consumers' willingness to pay (Pavlou & Dimoka, 2006), to levels of trust and loyalty (Awad & Ragowsky, 2008) and consumer engagement (Nambisan & Baron, 2007).

Literature suggests that the decision journey is now a continuous loop in which consumers keep adding and eliminating brands, based on a significant information from online C2C sources. This explains why eWOM is so powerful. If brands are positively associated with eWOM and not originally included in the consideration set, eWOM enables them to be included on the decision set (King et al., 2014).

Even though there are several types of eWOM, this paper only focuses on online consumer reviews (OCRs). Also known as product reviews, OCRs are a form of eWOM that have become an integral part of the Internet (Moe et al., 2011).

On retailers' websites, customers can find information about products retailers (and producers) and product reviews (provided by other consumers), which are considered as a second source of information, influencing customer choice probability (Kostyra et al., 2016).

Consumers are rational and they seek information to maximize social and economic utility, not only during the purchasing process but also when a need was not recognized yet (King et al., 2014). Through OCRs, customers have quick and easy access to a wide range of user-generated information (Duan et al., 2008), that can be helpful for them to make choices accordingly to

their needs, standards and preferences (Chen & Xie, 2008) based on other customers' experiences and shares (Moe et al., 2011).

Most consumers' purchase decisions rely heavily on OCRs (Park & Kim, 2008; Sen & Lerman, 2007), and previous research studies have outlined and demonstrated its importance and influence on sales (Cui et al., 2012).

OCRs, depending on how they are presented, can be divided into two groups: qualitative and quantitative ones (Sridhar & Srinivasan, 2012). Qualitative OCRs provide a "written description of the consumer's usage experience, who is completely free to choose how to describe, criticize, and evaluate the product". Quantitative reviews, on the other hand, "forces users to summarize one's evaluation in a single rating or grade, and the single ratings from customers are usually pooled together into a summary statistic" (Kostyra et al., 2016, p. 12).

The development of this paper focuses on quantitative OCRs to assess its ability to boost gren consumption.

According to Chintagunta et al. (2010), a quantitative OCR can be decomposed into three elements: valence, volume and variation, and is through these components that online shoppers assess the credibility and helpfulness of reviews (Jiménez & Mendoza, 2013). Valence is the average rating, representing customer satisfaction, whereas volume is the total and by level of valence number of customer ratings. Variance consists in the ratings' variation along its scale, representing the degree of (dis)agreement among customers' evaluations (Kostyra et al., 2016).

Valence, as an indicator of overall product quality, has a positive effect on customer choice probability (Kostyra et al., 2016). Positive opinions from consumers that have already experienced the product are assumed to increase customers' choice probability for a product, whereas negative opinions are assumed to have the opposite impact (Dellarocas et al., 2007). This effect of valence on customer choice, however, is moderated by reviews volume and variance (Kostyra et al., 2016).

Overall, OCRs have been shown to influence customer behavior and purchase choice due to the fact that information about quality perceptions of other customers' experiences is communicated and is perceived to be credible and trustworthy (Bickart & Schindler, 2001).

Literature argues that, without OCRs, a customer's choice is completely determined by factors such as brand, price or technical attributes, but in the presence of OCRs, a second source of information about product attributes is a critical factor as well (Kostyra et al., 2016).

Taking this into consideration, this paper suggests the ability of product reviews to influence consumers' green perceptions and, thus, stimulating environmentally friendly consumption.

Therefore, it is important to understand the outcome of OCRs on an individual level, namely, on consumers' perceived trust towards green products, their perception about its quality and performance, willigness to pay and, ultimately, purchase intention.

2.2.1. Perceived Trust

OCRs provide consumers information regarding products, contributing to the knowledge they have on them. Furthermore, by being a second source of information, product reviews help to decrease the level of perceived risk and uncertainty on the decision-making process, and rise consumers' trust on products (Kostyra et al., 2016), which is a role that is most frequently assigned to brand (Erdem & Swait, 1998) and price (Völckner, 2008).

2.2.2. Perceived Product Quality and Performance

OCRs, as a second source of information, are used as quality and performance indicators. In the presence of reviews, the power of the brand, as a product attribute that is used for quality evaluations, is somewhat transferred to reviews (Kostyra et al., 2016). Consequently, product reviews with a positive valence work as a signal of the brand's online reputation (Erdem & Swait, 1998), reducing the importance of the global one when choosing a product (Kostyra et al., 2016).

Literature argues that OCRs also decrease the impact of product attribute on customer choice. The technical attributes become less important for customer choice when in the presence of consumers' reviews since it facilitates potential customers' search, reducing the cognitive effort necessary to compare each product based on their technical attributes. Consumers seem to perceive the technical attributes of the products with the highest valence to sufficiently meet

their expectations and standards, avoiding further search and comparison among alternative offerings (Kostyra et al., 2016).

As previously mentioned, sustainability sometimes can be perceived as a weaker product attribute, especially in categories in which the sought attribute is quality or performance. However, it is suggested by literature that this liability can be overcame by providing consumers with additional information about product quality and performance in order to mitigate consumers' reliance on a default inference about a negative relationship between sustainability and quality (Luchs et al., 2010).

2.2.3. Willingness To Pay

OCRs, by being a second source of information about products and a product recommendation (that can be both positive and negative) plays an influence on consumers' willingness to pay. Furthermore, this impact is moderated by reviews' valence, volume and variance. A review with a positive valence and a high volume encourages consumers to purchase (Kostyra et al., 2016).

Regarding price, previous research indicates that OCRs also decrease price sensitivity by reducing consumers' uncertainty and perceived risk through providing potential customers with additional reliable information about the true product characteristics (Erdem et al., 2002). This overall lower price sensitivity reduces the impact of price on choice probability, ending up also increasing consumers' willingness to pay (Kostyra et al., 2016).

Moreover, by diminishing the influence of search costs through the reduction of the cognitive effort necessary to compare each product based on their attributes, OCRs lead to a greater willingness to pay for products (Brynjolfsson & Smith, 2000).

In furtherance, consumers are unwilling to spend money on products they perceive as not capable of matching their needs and expectations regarding product quality and performance. Thus, a positive change in consumers' perceptions about these product attributes contributes to a higher willingness to pay (Kostyra et al., 2016).

2.2.4. Purchase Intention

As previously referred, green consumption is measured through green purchase intention, and the goal of breaking down the green barriers is to increase environmentally friendly products' consumption.

Literature mentions the positive effect of consumers' reviews on purchase intention, increasing specially along with the valence and volume of reviews, since it indicates that the product is popular among consumers (Park et al., 2007). This popularity of the product reinforces the belief that the product is trustworthy.

Moreover, OCRs with a great valence and volume create trust beliefs on consumers, that leads to a higher trust intention and, consequently, a higher willingness to purchase (McKnight & Choudhury, 2006). Following this thought, also Wen et al. (2011) suggests trust to have an impact on purchase intention.

In furtherance, OCRs, besides being a second source of product information, also become an indicator of product quality and performance, leading to a higher willingness to pay and, consequently, to a higher purchase intention (Kostyra et al., 2016).

3. CONCEPTUAL MODEL AND HYPOTHESES

Based on the literature review provided about barriers to green consumption and OCRs' outcome on consumers on an individual level, this chapter focuses on the conceptual model and hypotheses' formulations.

The conceptual model hereby presented proposes OCRs as a digital marketing technique to overcome some of the green barriers and to boost sustainable consumption. The study examines the impact of the presence of product reviews on consumers' trust towards sustainable products, the perceived quality and performance, willingness to pay and purchase intention. The effect of perceived trust and perceived product quality and performance on willingness to pay and purchase intention is also assessed (Figure 1).

According to literature, OCRs work as a second source of information and as a product recommendation, indicating products' popularity among consumers and increasing their wiilligness to pay, as well as their purchase intention Theferore, this paper suggests:

H1: In the presence of quantitative OCRs, consumers' willingness to pay for environmentaly friendly products is higher than without its presence.

H2: In the presence of quantitative OCRs, consumers' purchase intention towards environmentaly friendly products is higher than without its presence.

As suggested by prior research, quantitative OCRs, by being a second source of information regarding environmentally friendly products, positively influence consumers' trust level about green products:

H3: The presence of OCRs significantly increases consumers' perceived level of trust regarding green products.

Quantitative OCRs with a positive valence work as a quality indicator for customers, substituting many times that brand role. Moreover, the presence of product reviews also help to mitigate the perception that environmentally friendly products are not as from good quality and performane as the conventional ones. Thus, this paper suggests:

H4: The presence of OCRs significantly increases consumers' perceptions about green products' quality and performance.

According to literature, a higher level of trust decreases consumers' price sensitivity, diminishing the influence that price has on product choice, which leads to an increase in consumers' willingness to pay and purchase intention. It is, thus, suggested:

H5: Consumers' perceived trust regarding green products significantly impacts their willingness to pay.

H6: Consumers' perceived trust regarding green products significantly impacts their purchase intention.

As previously mentioned, consumers only purchase products which quality and performance level are recognised as good enough to meet their needs. Having so, a positive change in consumers' perceptions about environmentally friendly products' quality and performance leads to a recognition of product value and, thus, a higher willingness to pay and a higher purchase intention:

H7: Consumers' perceptions about green products' quality and performance significantly impacts their willingness to pay.

H8: Consumers' perceptions about green products' quality and performance significantly impacts their purchase intention.

Based on the hypotheses previously presented, this papers suggests the mediating effect that both consumers' trust and their perceptions regarding green products' quality and performance execute on the influence that OCRs have on consumers' willingness to pay for environmentally friendly products as well as its purchase intention:

H9: Consumers' perceived trust and perceived product quality and performance mediates the influence that the presence of quantitative OCRs has on the willingness to pay for green products.

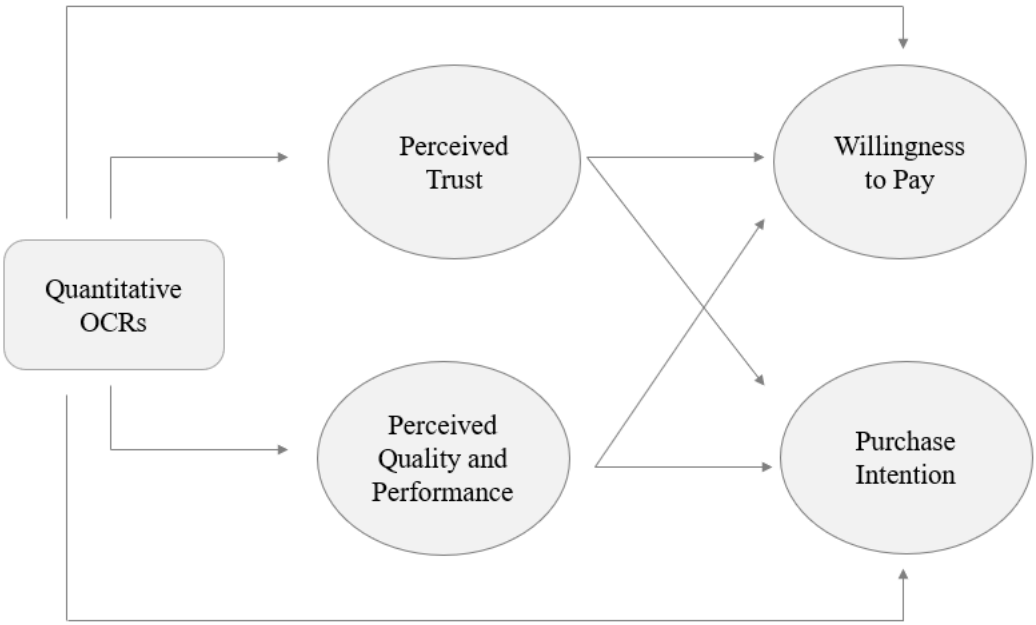
H9a: Consumers' perceived trust towards green products mediates the impact that the presence of quantitative ORCs has on the willingness to pay for green products.

H9b: Consumers' perceived product quality and performance regarding green products mediate the impact that the presence of quantitative ORCs has on the willingness to pay for green products.

H10: Consumers' perceived trust and their perceived product quality and performance mediates the influence that the presence of quantitative OCRs has on green products' purchase intention.

H10a: Consumers' perceived trust towards green products mediates the effect that the presence of quantitative OCRs has on green products' purchase intention.

H10b: Consumers' perceived product quality and performance regarding green products mediate the effect that the presence of quantitative OCRs has on green products' purchase intention.



Model: Own Contribution

Figure 1: Conceptual Model

4. METHODOLOGY AND DATA COLLECTION

After exploring secondary data from literature, primary data is collected to answer the research hypotheses of the study.

4.1. Research Method

Data is collected through an online questionnaire (Appendix 1). This research method is chosen due to its main advantages. It has a low cost, enables an easy contact with the target of the study, provides more accurate results and reliable answers since there are no intermediaries and, most of all, makes it possible to reach a large audience in a short amount of time. Additionally, and due to the subject of the paper, the effect of social desirability bias must be avoided and an online survey that treats results with anonymity and confidentiality seems to be the most adequate and effective method to collect data. However, it should be mentioned the lack of control of the researcher regarding the respondent's surrounding environment or the level of concentration.

The platform chosen to conduct and distribute the online survey is Qualtrics, since it provides countless options regarding question structure or facilitating tools such as question randomization. Furthermore, the distribution of the survey is highly facilitated by the sharing link provided by the platform. Moreover, the fact that the data collected can easily be downloaded into the statistics program SPSS is an advantage.

4.2. Research Design

The survey compares two experimental scenarios and has two additional control groups, following a between subjects' design.

Questionnaire's participants were firstly presented with a brief explanation of the context and survey objectives, however without revealing its main purpose. Afterwards, respondents were randomly assigned to one of the four conditions:

Control Groups:

1. Non-sustainable product without quantitative OCRs;
2. Non-sustainable product with quantitative OCRs;

Experimental Groups:

3. Sustainable product without quantitative OCRs;
4. Sustainable product with quantitative OCRs.

The questionnaire was entirely in Portuguese, since this paper aims to study the Portuguese market. Thus, foreign participants living in Portugal were not considered due to several reasons, such as income or consumption culture.

Participants were screened through three questions, namely, nationality, environmental consciousness and OCRs use.

Regarding nationality, only Portuguese participants could continue to answer the survey. Respondents were, then, asked to rate their environmental consciousness on a 7-point Likert scale, as well as their level of quantitative OCRs use during the purchase decision process, through the following screening questions ("I consider Sustainability and important topic" and "I read product reviews in retailers' online stores during the purchase decision process").

After completing these questions, respondents were then randomly exposed to one of the four experimental manipulations, which consisted of four types of manipulated product display stimuli. Since the purpose of the study is to analyse the power of ORCs to boost green consumption, two control scenarios were created, in order to isolate the effect of OCRs. Both scenarios present a non-sustainable product, but only one shows quantitative product reviews to participants. Regarding the experimental scenarios, both presented respondents a sustainable product, with one group being exposed to a manipulated stimulus without OCRs whereas the other group was exposed to OCRs.

Right after being presented to the stimulus, participants were asked to answer the manipulation questions, by evaluating their level of agreement with statements regarding the category of the product, its use frequency, and its level of sustainability. Additionally, there was a question confirming that the participants had seen, or not, the OCRs. Respondents were also asked to assess their perceptions about the product on a semantic-differential scale. Furthermore, participants were asked to rate their level of trust regarding the product, the perceived product quality and performance, as well as their willingness to pay for the product and purchase intention on a 7-point Likert scale. Finally, participants were asked about some demographics questions.

4.3. Stimuli Development

A fictional product display at an online store was created as a stimulus for the study (Appendix 1). A qualitative pre-test with ten participants was performed in order to understand how to properly develop the stimuli. From its results, it was possible to improve the final survey's stimuli.

Respondents were randomly exposed to one of the four different stimuli. On the four stimuli, the product shown, a shampoo, had the same packaging, a regular light-yellow plastic bottle. This format of shampoo was shown, and colours usually related to environment, like green or blue, were avoided in order to mitigate a possible limitation based on the packaging/format of the product. The four stimuli also contain the same information regarding the capacity of the product (250 ml) and usage details. The shampoo was chosen to be a part of the stimuli since it is a daily product, that everyone uses and that does not have a specific target. The fact that it is a product which the main sought attribute is performance was also taken into consideration. Moreover, it reinforces the idea that following a sustainable consumption behaviour does not imply only big consumption changes.

Regarding the manipulations, the two experimental groups were shown a sustainable product and the two control groups a non-sustainable one (without sustainable claim). The experimental groups, besides having the information that the shampoo is vegan and an additional "*Bio and Friendly"* label, were also informed about the sustainable manufacturing process (produced with 30% less waste of water and renewable energy). In addition, one experimental group and one control group, were exposed to a consumer review section. As already mentioned in the literature review, the effects of product reviews at an individual level which served as the basis for the creation of the conceptual model, derives from a review with positive valence, high volume and low variance. Having so, in this reviews section, participants could see that the product had 117 reviews, with a valence of 4.8 out of 5, and with low variance (95 five-stars reviews, 18 four-stars and 4 three-stars). Regarding the chosen volume of reviews, according to Kostyra et al (2016), 200 reviews are considered to be a high volume for electronic products. In the Portuguese market, reviews are tendentially lower, even on electronic goods. Cosmetics, on a general perspective, have less reviews than electronics. Considering the Portuguese market, cosmetics also tend to have a small number of reviews. Regarding the reviews' dimensions that respondents were shown, most online stores ask consumers to assess product

"quality" and its "price-quality ratio". Moreover, at most of the cosmetic's online stores, "obtained results" and "cleaning efficiency" are used as dimensions to evaluate shampoos.

4.4. Variable Descriptions

4.4.1. Manipulation Check

The two manipulation check measures were assessed by asking participants, after being exposed to the different scenarios, to rate how sustainable they perceived the product to be, on a 7-point Likert Scale (1 – totally disagree, 7 – totally agree), as well as at what extent participants perceived the product to be presented together with OCRs, on the same scale.

4.4.2. Dependent Variables

Product Liking: Participants were asked to rate their perception about the product on semantic differential scale (with four measurement items) after seeing the stimulus (Spears & Singh, 2004).

The crucial dependent variables were assessed after participants were exposed to the stimulus, using a 7-point Likert scale (1 – completely disagree, 7 – completely agree).

Perceived Trust: After being exposed to the product scenario manipulation, respondents were asked to rate their level of agreement with three statements that aimed to understand their level of trust regarding the shampoo (Chiou & Droge, 2006).

Perceived quality and performance: Participants were asked to rate their level of agreement with three statements that mentioned the high quality and performance of the product (Dodds et al., 1991).

Willingness to pay: Respondents were given the information that the product being offered was at a price of 6,99€ and asked to rate their level of agreement with three statements that mentioned the fairness of the price and a high willingness to pay for the shampoo (Breidert et al., 2006).

Purchase intention: Participants were asked to rate their level of agreement with three statements that aimed to understand their likelihood of purchasing the shampoo (Dodds et al., 1991).

Appendix 2 summarizes the previous information.

4.4.3. Independent Variables

Type of product: This variable is divided into two categories, whereat participants were exposed to a stimulus displaying a non-sustainable shampoo or to a stimulus showing a sustainable shampoo.

Presence of OCRs: This variable is composed by two categories, whereat respondents were exposed to a stimulus without quantitative product reviews or to a stimulus with its presence.

5. ANALYSIS AND RESULTS

5.1. Data cleaning

Within the time dedicated to data collection, 310 people started to fil out the survey. From those, 46 responses were incomplete and therefore eliminated, leaving only 264 complete answers for analysis.

Secondly, as the desired target is only Portuguese people who are environmental consciousness that, at some point, rely on OCRs, besides asking for nationality, two statements ("I consider Sustainability and important topic" and "I read product reviews in retailers' online stores during the purchase decision process") served as a filters, and respondents that answered to the statements with "totally disagree" or "disagree" were eliminated from the sample. Thus, only 203 answers were taken into consideration to the main analysis.

5.2. Sample Characterization

To provide an accurate portrait of the final sample, some demographic characteristics of the participants of the questionnaire were analysed. Regarding gender, the sample was mostly female (75%). Regarding the age, 80% of participants belonged to the interval between 18 to 24 years. Moreover, most respondents said to have a personal gross income of more than 2000€ (38%) per month, followed by 18% of participants who have between 635€ and 1000€ gross per month. 19% preferred not to say. Concerning occupation, 60% of the sample is composed by students and 19% by employed people. Regarding completed education, the majority of the respondents (64%) have an undergraduate program completed, whereas 20%, a master's degree.

Participants, as previously mentioned, were randomly assigned to a specific group. The first control group, with a non-sustainable product and without review was exposed to 51 people whereas the other control group, with reviews obtained 50 answers. Regarding the experimental groups (with a sustainable product), the one without review is formed by 50 people whereas the other with review is composed by 52 participants.

Frequencies per Scenario		
Scenario	Frequency	Percentage
Scenario 1 – Non-sustainable without review	51	25.1
Scenario 2 – Non-sustainable with review	50	24.6
Scenario 3 – Sustainable without review	50	24.6
Scenario 4 – Sustainable with review	52	25.6
Total	203	100

Table 1: Frequencies per Scenario

In regard to the importance given to the topic of Sustainability and the habit of resorting to OCRs, on a scale of 3 – 7 (people responding 1 or 2 were redirected to the end of the survey), the sample mean is 6.50 and 5.50, respectively. Furthermore, through two One-Way Anova Tests, one can say that the four groups are comparable between each other either in terms of environmental consciousness (F (3,199) = 0.740, p = .529) or reviews' use (F (3,199) = .524, p = .666), since there are no significant differences between their means.

Screening Questions per Scenario					
Question	Scenario	Mean per Scenario	Sig. Level	F-value	Mean per Question
"I consider Sustainability an important topic."	Scenario 1	6.41	.529	.740	6.50
	Scenario 2	6.48			
	Scenario 3	6.60			
	Scenario 4	6.52			
"I read product reviews by other consumers in retailers' online stores during the purchase decision process."	Scenario 1	5.35	.666	.524	5.50
	Scenario 2	5.50			
	Scenario 3	5.50			
	Scenario 4	5.63			

Table 2: Statistics Screening Questions

5.3. Scale Validity and Reliability

The questionnaire was developed based on previous research articles, ensuring the validity and accuracy of all the items that compose the survey and that are used to assess the constructs present on the conceptual model.

Nonetheless, dependent variables were checked for reliability and internal consistency of the multiitem scales. Therefore, the Cronbach alpha was measured for five scales (Table 3), that showed a good internal consistency, all having alphas above .850. Thus, there was no need to delete any item from the scales.

Reliability Analysis		
Scale	Number of Items	Cronbach's Alpha
Product Liking	4	.857
Trust	3	.908
Perceived Quality and Performance	3	.926
Willingness to Pay	3	.923
Purchase Intention	3	.934

Table 3: Reliability Analysis – Cronbach's Alpha Test

5.4. Variables Added

In order to accurately assess the results, new variables were computed and added to the ones provided by the questionnaire.

The first variable created was "Sustainable_Dummy", and was computed as a dummy variable, assuming values of "0" if the respondent was exposed to a regular product or "1" if exposed to a sustainable product. The second variable added was "Review_Dummy", and was computed as a dummy variable, assuming values of "0" if the respondent was not exposed to a quantitative OCR or "1" if one was exposed to it. The third variable created was the "Scenario" one, being computed as a nominal variable assuming values of "1" if the respondent was exposed to the scenario with a non-sustainable product and without OCRs, "2" if exposed to a non-sustainable product but in the presence of OCRs, "3" belongs to respondents exposed to a sustainable product and without OCRs and, finally, "4" to the scenario with a sustainable product and with OCRs.

Table 4 summarizes this information.

Variables Created	Values	Meaning
"Sustainable Dummy"	"0"	Non-sustainable product
	"1"	Sustainable product
"Review Dummy"	"0"	Without OCR
	"1"	With OCR
"Scenario"	"1"	Non-sustainable product without OCR
	"2"	Non-sustainable product with OCR
	"3"	Sustainable product without OCR
	"4"	Sustainable product with OCR

Table 4: Variables Created

The constructs evaluated in the survey, perceived trust (including three measurement items), perceived product quality and performance (with three measurement items), willingness to pay (including three measurement items) and purchase intention (with three measurement items), were subject to manipulation. Accordingly, four new variables were created as a result of making an average summation between the measurement items across the four scenarios, namely, Average_Trust, Average_Quality, Average_Willingness_to_Pay, and Average_Purchase_Intention.

5.5. Manipulation Check

Two manipulation checks were performed: one for the type of product and another one for the presence of quantitative OCRs. Both manipulation checks showed statistically significant results, when independent t-tests with a 95% confidence level were conducted.

Respondents exposed to a sustainable stimulus perceived the product to be more environmentally friendly than the ones exposed to a non-sustainable one (Msustainable = 5.62 vs. Mnon_sustainable = 3.69; t (201) = -11.345, p = .000). Thus, the different types of product in the stimuli were successfully manipulated.

	Product Type					
	Sustainable		Non-Sustainable			
	Mean	SD	Mean	SD	t-test	Sig. level
Manipulation Check (How sustainable is the product rated)	5.62	1.19	3.69	1.23	-11.35	.000

Table 5:Sustainability Manipulation Check

Respondents exposed to the quantitative OCRs noticed that the product was presented together with product reviews, unlike the ones that were not exposed to them (Mwith_review = 6.29 vs. Mwithout_review = 2.8; t (201) = -7.974, p = .000). Thus, the presence of quantitative OCRs in the stimuli was successfully manipulated.

	Presence of quantitative OCRs					
	With Review		Without Review			
	Mean	SD	Mean	SD	t-test	Sig. level
Manipulation Check (How the presence of OCRs is rated)	6.29	1.095	2.8	1.92	-15.91	.000

Table 6: ORCs Manipulation Check

5.6. Main Results

5.6.1. Hypotheses testing

H1: *In the presence of quantitative OCRs, consumers' willingness to pay for environmentaly friendly products is higher than without its presence.*

To test H1, a One-Way Anova at a 95% confidence level was performed in order to compare the results between the different groups. Since the effect of the quantitative OCR is aimed to be isolated, the four scenarios were tested, sustainable and non-sustainable, with and without reviews.

The test showed that there were statistically significant differences between the means of the different scenarios (F (3,199) = 12.233, p = .000). In furtherance, and because each scenario had a similar number of participants, also the Tukey post hoc test was conducted in order to check which scenarios were different from each other and it can be stated that scenario 1 and 2 means are statistically different (p-value = .000). By analysing table 7, one can see that respondents of the scenario 1 (non-sustainable product without reviews) have a smaller willingness to pay than scenario 2 (non-sustainable product with reviews) (Msceanrio_1 = 3.2941 vs Mscenario_2 = 4.5333).

On the other hand, neither scenarios 3 (sustainable product without review) and 4 (sustainable product with review) (p-value = .216) nor scenarios 2 and 4 (p-value = .709) have significant differences in their means. All these means that in the presence of quantitative reviews consumers' willingness to pay is higher than without OCRs, however, only regarding non-sustainable products. Therefore, **H1 is rejected**.

ANOVA - Effect of OCRs on Willingness to Pay					
	N	Mean	Std. Deviation	F-test	Sig.
Scenario 1	51	3.2941	1.44168	12.233	.000
Scenario 2	50	4.5333	1.38177		
Scenario 3	50	4.3000	1.20890		
Scenario 4	52	4.8205	1.38379		

Table 7: ANOVA – Effect of OCRs on Willingness to Pay

Multiple Comparisons – Tukey HSD		
Dependent Variable: Average_WTP		
(I) Scenario	(J) Scenario	Sig.
Scenario 1	Scenario 2	.000
	Scenario 3	.001
	Scenario 4	.000
Scenario 2	Scenario 1	.000
	Scenario 3	.826
	Scenario 4	.709
Scenario 3	Scenario 1	.001
	Scenario 2	.826
	Scenario 4	.216
Scenario 4	Scenario 1	.000
	Scenario 2	.709
	Scenario 3	.216

Table 8: Tukey HSD Test – Effect of OCRs on Willingness to Pay

H2: *In the presence of quantitative OCRs, consumers' purchase intention towards environmentaly friendly products is higher than without its presence.*

To test H2, a One-Way Anova at a 95% confidence level was performed as well. Again, and because the effect of the quantitative OCR is aimed to be isolated, the four scenarios were tested.

The test showed that there were statistically significant differences between the means of the different scenarios (F (3,199) = 9.661, p = .000). Again, and since each scenario had a similar number of participants, also the Tukey post hoc test was conducted in order to check which scenarios were different from each other and it can be stated scenario 1 and 2 means are statistically different (p-value = .021). On table 9, one can check that respondents of the scenario 1 (non-sustainable product without reviews) have a smaller purchase intention than scenario 2 (non-sustainable product with reviews) (Msceanrio_1 = 2.8562 vs Mscenario_2 = 3.66).

On the other hand, neither scenarios 3 (sustainable without review) and 4 (sustainable with review) (p-value = .491) nor scenarios 2 and 4 (p-value = .110) have significant differences in their means. All these means that in the presence of quantitative reviews consumers' purchase intention towards non-sustainable products in higher than without reviews, unlike what happens with the sustainable products. Thus, **H2 is rejected**.

ANOVA - Effect of OCRs on Purchase Intention					
	N	Mean	Std. Deviation	F-test	Sig.
Scenario 1	51	2.8562	1.35852	9.661	.000
Scenario 2	50	3.6600	1.34601		
Scenario 3	50	3.8933	1.35600		
Scenario 4	52	4.2821	1.47954		

Table 9: ANOVA – Effect of OCRs on Purchase Intention

Multiple Comparisons – Tukey HSD		
Dependent Variable: Average_Purchase_Intention		
(I) Scenario	(J) Scenario	Sig.
Scenario 1	Scenario 2	.021
	Scenario 3	.001
	Scenario 4	.000
Scenario 2	Scenario 1	.021
	Scenario 3	.835
	Scenario 4	.110
Scenario 3	Scenario 1	.001
	Scenario 2	.835
	Scenario 4	.491
Scenario 4	Scenario 1	.000
	Scenario 2	.110
	Scenario 3	.491

Table 10: Tukey HSD Test – Effect of OCRs on Purchase Intention

Moving towards the analysis of the following hypotheses, four new variables were computed in order to aggregate the responses only of the participants that were exposed to the sustainable scenarios. Accordingly, as a result of making an average summation between the measurement items across the two scenarios, the following variables were created, namely, Average_Trust_Sus, Average_Quality_Sus, Average_Willingness_to_Pay_Sus, and Average_Purchase_Intention_Sus.

H3: The presence of OCRs significantly increases consumers' perceived level of trust regarding green products.

To test H3, a Linear Regression test is performed. Results show that 15% of the variance of the consumers' trust regarding green products is explained by the presence of quantitative product reviews.

Additionally, from the ANOVA significance value, it can be analysed whether the model has a good fit or not. In this case, the p-value=0.000, which is below .05, leads us to reject the null

hypothesis (H0: $\beta i = 0$) and therefore, indicates that the variable is statistically significant and a good predictor of the dependent variable.

Moreover, by analysing the standardized beta (βTL = .398), it can be confirmed that the presence of quantitative OCRs increases consumer's trust towards green products. Therefore, **H3 is accepted**.

	Model Summary	ANOVA	Coefficients	
	Adjusted R Square	Sig.	Standardize Beta	Sig.
Average_Trust_SUS	15%	.000	.398	.000

Table 11: The impact of quantitative OCRs on Perceived Trust towards Green Products

Moreover, in order to assess if in the presence of quantitative OCRs, consumers' perceived trust is higher than without its presence, a One-Way Anova at a 95% confidence level is also performed.

The test showed that there were statistically significant differences between the means of the different scenarios (F (3,199) = 14.022, p = .000). The Tukey post hoc test stated that scenario 1 (non-sustainable without review) and 2 (non-sustainable with review) means are statistically different (p-value = .000), as well as scenarios 3 and 4, sustainable without and with review, respectively (p-value = .000).

On the other hand, scenarios 2 and 4 do not present statistically significant differences (p-value = .975), which means that in the presence of reviews, consumers trust on green products as much as they do on non-sustainable ones.

In the table below, one can see that respondents of scenario 1 (non-sustainable product without reviews) have a lower level of trust than scenario 2 (non-sustainable product with reviews) (Msceanrio_1 = 4.6732 vs Mscenario_2 = 5.7133). Regarding green products, scenario 3 (without reviews) has also a lower perceived trust than scenario 4 (with reviews) (Msceanrio_3 = 4.9533 vs Mscenario_4 = 5.8013).

ANOVA - Effect of OCRs on Perceived Trust					
	N	Mean	Std. Deviation	F-test	Sig.
Scenario 1	51	4.6732	1.31570	14.022	.000
Scenario 2	50	5.7133	.91847		
Scenario 3	50	4.9533	1.00793		
Scenario 4	52	5.8013	.96623		

Table 12: ANOVA - Effect of OCRs on Perceived Trust

Multiple Comparisons – Tukey HSD		
Dependent Variable: Average_Perceived_Trust		
(I) Scenario	(J) Scenario	Sig.
Scenario 1	Scenario 2	.000
	Scenario 3	.549
	Scenario 4	.000
Scenario 2	Scenario 1	.000
	Scenario 3	.002
	Scenario 4	.975
Scenario 3	Scenario 1	.549
	Scenario 2	.002
	Scenario 4	.000
Scenario 4	Scenario 1	.000
	Scenario 2	.975
	Scenario 3	.000

Table 13: Tukey HSD Test – Effect of OCRs on Perceived Trust

H4: *The presence of OCRs significantly increases consumers' perceptions about green products' quality and performance.*

To test H4, a Linear Regression test is performed. Results show that 19.9% of the variance of the consumers' perceived quality and performance regarding green products is explained by the presence of quantitative product reviews.

In addition, the ANOVA significance level, which is below .05 (p-value = 0.000), leads us to reject the null hypothesis (H0: $\beta i = 0$) and therefore, indicates that the variable is statistically significant and a good predictor of the dependent variable.

Moreover, by analysing the standardized beta (βTL = .455), it can be confirmed that the presence of quantitative OCRs significantly increases the perception of quality and performance of green products. Therefore, **H4 is accepted**.

	Model Summary	ANOVA	Coefficients	
	Adjusted R Square	Sig.	Standardize Beta	Sig.
Average_Quality_SUS	19.9%	.000	.455	.000

Table 14: The impact of OCRs on Green Products Perceived Quality and Performance

Moreover, in order to assess if in the presence of quantitative OCRs, consumers' perceived quality and performance is higher than without its presence, a One-Way Anova at a 95% confidence level is also performed.

The test showed that there were statistically significant differences between the means of the different scenarios (F (3,199) = 21.587, p = .000). The Tukey post hoc test stated that scenario

1 (non-sustainable without review) and 2 (non-sustainable with review) means are statistically different (p-value = .000), as well as scenarios 3 (sustainable without review) and 4 (sustainable with review) (p-value = .000).

On the other hand, scenarios 2 and 4 do not present statistically significant differences (p-value = .972), which means that in the presence of reviews, consumers perceived quality and performance regarding green products does not differentiate from the non-sustainable ones, being as high for sustainable products as it is for non-sustainable ones.

As one can see on table 15, it can be seen that respondents from scenario 1 (non-sustainable product without reviews) have a poorer perception of product quality and performance than scenario 2 (non-sustainable product with reviews) (Msceanrio_1 = 4.5490 vs Mscenario_2 = 5.7867). Regarding green products, scenario 3 (without reviews) has also a lower perceived quality and performance than scenario 4 (with reviews) (Msceanrio_3 = 5.0000 vs Mscenario_4 = 5.8718).

ANOVA - Effect of OCRs on Perceived Quality and Performance					
	N	Mean	Std. Deviation	F-test	Sig.
Scenario 1	51	4.5490	1.32803	21.587	.000
Scenario 2	50	5.7867	.76416		
Scenario 3	50	5.0000	.79682		
Scenario 4	52	5.8718	.91740		

Table 15: ANOVA - Effect of OCRs on Perceived Quality and Performance

Multiple Comparisons – Tukey HSD		
Dependent Variable: Average_Perceived_Quality		
(I) Scenario	(J) Scenario	Sig.
Scenario 1	Scenario 2	.000
	Scenario 3	.098
	Scenario 4	.000
Scenario 2	Scenario 1	.000
	Scenario 3	.000
	Scenario 4	.972
Scenario 3	Scenario 1	.98
	Scenario 2	.000
	Scenario 4	.000
Scenario 4	Scenario 1	.000
	Scenario 2	.972
	Scenario 3	.000

Table 16: Tukey HSD Test – Effect of OCRs on Perceived Quality and Performance

H5: *Consumers' perceived trust regarding green products significantly impacts their willingness to pay.*

In order to analyse whether the perceived level of trust regarding green products influences its willingness to pay, a linear regression analysis was computed.

From table 17, it can be extracted the Adjusted R2 which corresponds to 13.2%. This value, although low, represents the percentage of variance in the consumers' willingness to pay for green products that is explained by the consumers' level of trust regarding green products.

Additionally, the ANOVA significance level, which is below .05 (p-value = .000), leads us to reject the null hypothesis (H0: $\beta i = 0$) and therefore, indicates that the variable is statistically significant and a good predictor of the dependent variable.

Moreover, by analysing the standardized beta ($\beta TL = .375$), it can be confirmed that the level of trust that consumers have on green products positively affects their willingness to pay. Therefore, **H5 is accepted**.

	Model Summary	ANOVA	Coefficients	
	Adjusted R Square	Sig.	Standardize Beta	Sig.
Average_Trust_SUS	13.2%	.000	.375	.000

Table 17: Effect of Perceived Trust on Green Products' Willingness to Pay

H6: *Consumers' perceived trust regarding green products significantly impacts their purchase intention.*

A linear regression analysis was computed in order to test this hypothesis.

From table 18, it can be extracted that 24.4% of the variance in the consumers' purchase intention for green products is explained by the consumers' perceived trust towards the product.

In addition, the ANOVA significance level, which is below .05 (p-value = 0.000), leads us to reject the null hypothesis (H0: $\beta i = 0$) and therefore, indicates that the variable is statistically significant and a good predictor of the dependent variable.

Moreover, by analysing the standardized beta ($\beta TL = .501$), it can be confirmed that the level of trust that consumers have on green products positively affects their willingness to pay. Therefore, **H6 is accepted**.

	Model Summary	ANOVA	Coefficients	
	Adjusted R Square	Sig.	Standardize Beta	Sig.
Average_Trust_SUS	24.4%	.000	.501	.000

Table 18: Effect of Perceived Trust on Green Products' Purchase Intention

H7: *Consumers' perceptions about green products' quality and performance significantly impacts their willingness to pay.*

In order to analyse if the consumers' perceptions about quality and performance regarding green products influences its willingness to pay, a linear regression analysis was also computed.

From table 19, it can be extracted that 18.7% of the variance in the consumers' willingness to pay for green products is explained by the consumers' perceived quality and performance.

Furthermore, the ANOVA value, which is below .05 (p-value = 0.000), leads us to reject the null hypothesis (H0: $\beta i = 0$) and therefore, indicates that the variable is statistically significant and a good predictor of the dependent variable.

Moreover, by analysing the standardized beta ($\beta TL = .442$), it is confirmed that perceived product quality and performance positively affects consumers' willingness to pay. Therefore, **H7 is accepted**.

	Model Summary	ANOVA	Coefficients	
	Adjusted R Square	Sig.	Standardize Beta	Sig.
Average_Quality_SUS	18.7%	.000	.442	.000

Table 19: Effect of Perceived Quality and Performance on Green Products' Willingness to Pay

H8: *Consumers' perceptions about green products' quality and performance significantly impacts their purchase intention.*

In order to test this hypothesis, a linear regression analysis was computed as well.

From table 20, it can be extracted that 26.1% (Adjusted R2) of the variance in the consumers' green products purchase intention is explained by consumers' perceived quality and performance of those products.

Additionally, the ANOVA significance value, which is below 0.05 (p-value=0.000), leads us to reject the null hypothesis (H0: $\beta i = 0$) and therefore, indicates that the variable is statistically significant and a good predictor of the dependent variable.

Moreover, by analysing the standardized beta (βTL = .518), it is confirmed that perceived product quality and performance also positively affects green products' purchase intention. Therefore, **H8 is accepted**.

	Model Summary	ANOVA	Coefficients	
	Adjusted R Square	Sig.	Standardize Beta	Sig.
Average_Quality_SUS	26.1%	.000	.518	.000

Table 20: Effect of Perceived Quality and Performance on Green Products' Purchase Intention

5.6.2. The mediating effects of perceived trust and perceived quality and performance

In order to test the four mediation hypotheses, a new dummy variable was created for participants of the two sustainable scenarios, assuming a value of "0" without OCR and "1" with review. These hypotheses are tested through the SPSS extension "Process Macro".

Before proceeding to the analysis of any mediating effects on the impact that reviews have on the willingness to pay for green products, as well as on its purchase intention, it is necessary to study the direct effect of the independent variable on the dependent ones, by means of two Linear Regression tests.

Regarding the direct effect of the presence of reviews on the willingness to pay for green products, the impact is statistically significant (p-value = .046). Therefore, the direct effect existence criterion is met and there is a causal relationship between the independent and the dependent variables. **H9a** and **H9b** are, therefore, tested in order to try to explain this relationship.

Concerning the direct effect of the presence of reviews on green products' purchase intention, the impact is not statistically significant (p-value = .170). However, according to Agler & De Boeck (2017), even though the direct effect existence criteria is not met, it is still reasonable testing mediating effects in order to understand whether or not there is an indirect effect that influence the relationship between the independent and the dependent variables. Therefore, two **H10a** and **H10b** are tested in order to try to explain the relationship between the presence of reviews and green products' purchase intention.

Independent Variable	Dependent Variable:	Model Summary	ANOVA	Coefficients	
		Adjusted R Square	Sig.	Standardize Beta	Sig.
OCRs	Willingness to Pay SUS	30%	.046	.198	.046
	Purchase Intention SUS	9%	.170	.137	.170

Table 21: The direct effect of reviews on green products' willingness to pay and purchase intention

H9: Consumers' perceived trust and perceived product quality and performance mediates the influence that the presence of quantitative OCRs has on the willingness to pay for green products.

H9a: Consumers' perceived trust towards green products mediates the impact that the presence of quantitative ORCs has on the willingness to pay for green products.

In the representative figure below, one can check that in the presence of "perceived trust", OCRs has a direct impact on green products' willingness to pay, with a coefficient of 0.1153, although not statistically significant (p-value = .5690). Moreover, OCRs also has a direct effect on the perceived trust towards green products, with a coefficient of 0.7922 (p-value = .0000). Additionally, another effect is possible to be extracted from the model, which is the direct effect of the perceived trust on willingness to pay, with a coefficient of 0.3519 (p-value = .0008).

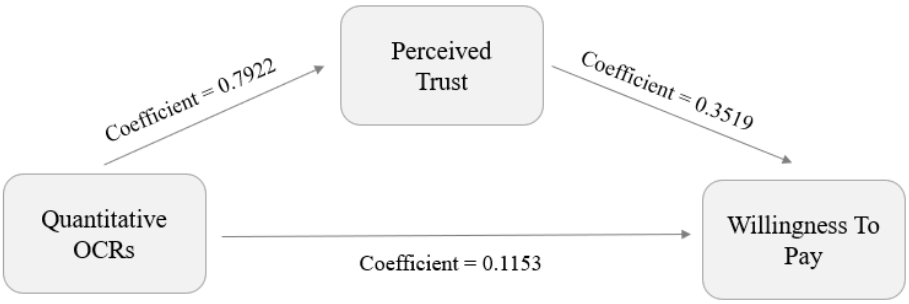


Figure 2: Standardized Coefficients of Mediation Effect of Perceived Trust on the impact of OCRs on Willingness to Pay

To check the mediation effect of perceived trust (M) on the impact of OCRs (X) on willingness to pay (Y) of green products, it is necessary to know what the total impact of X on Y is and how much of this effect is direct and indirect. As results show that in the presence of M, de direct effect of X on Y is not significant, if a significant indirect effect is detected, one can say that perceived trust mediates the effect of OCRs on green products' willingness to pay, as it explains the effect that X has on Y.

Using bootstrapping, the indirect effect is tested and if the null of 0 falls between the lower and upper bound of the 95% confidence interval, it means that the indirect effect is 0. If 0 falls outside the confidence interval, then the indirect effect is assumed to be non-zero. In this case, the indirect effect (IE=0.2788) is statistically significant: 95% CI = (0.0722, 0.4748) (Table 22).

	Coefficient	BootLLCI	BootULCI
Indirect effect X on Y	0.2788	0.0722	0.4748

Table 22: Indirect Effect of Perceived Trust on the impact of OCRs on Willingness to Pay

Thus, **H9a** is supported, meaning that perceived trust mediates the effect of OCRs on green products' willingness to pay.

H9b: Consumers' perceived product quality and performance regarding green products mediate the impact that the presence of quantitative ORCs has on the willingness to pay for green products.

From the figure below, it can be extracted that besides the direct effect of OCRs on green products' willingness to pay (with a coefficient of -0.083, although not statistically significant (p-value = .9671)), OCRs have a significant direct effect on consumers' perceived quality and performance with a coefficient of 0.9065 (p=.0000). Furthermore, there is a direct effect of the perceived quality and performance on willingness to pay, with a coefficient of 0.4439 (p-value = .0000).

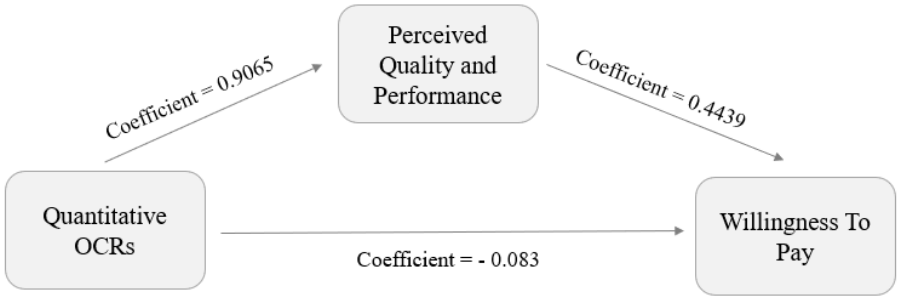


Figure 3: Standardized Coefficients of Mediation Effect of Perceived Quality and Performance on the impact of OCRs on Willingness to Pay

In the presence of the mediator, there is a direct effect of X on Y, however, not statistically significant (p=0.9671). On the other hand, the indirect effect (IE=0.4024) is statistically significant: 95% CI = (0.1858, 0.6135) (Table 23), meaning that in the presence of the mediator, perceived quality and performance mediates the effect of OCRs on the willingness to pay for green products. Thus, **H9b is supported**.

	Coefficient	BootLLCI	BootULCI
Indirect effect X on Y	0.4024	0.1858	0.6135

Table 23: Indirect Effect of Perceived Quality and Performance on the impact of OCRs on Willingness to Pay

H10: Consumers' perceived trust and their perceived product quality and performance mediates the influence that the presence of quantitative OCRs has on green products' purchase intention.

H10a: Consumers' perceived trust towards green products mediates the effect that the presence of quantitative OCRs has on green products' purchase intention.

In the representative figure below, one can see that the presence of OCRs has a not significant direct impact on green products' purchase intention, with a coefficient of -0.1479 (p-value = .4336). Moreover, the presence of OCRs has a direct effect on consumers' trust towards green products, with a coefficient of 0.7922 (p-value = .0000). Additionally, a direct effect of the perceived trust on the purchase intention, with a coefficient of 0.5307 (p-value = .0000), can also be extracted.

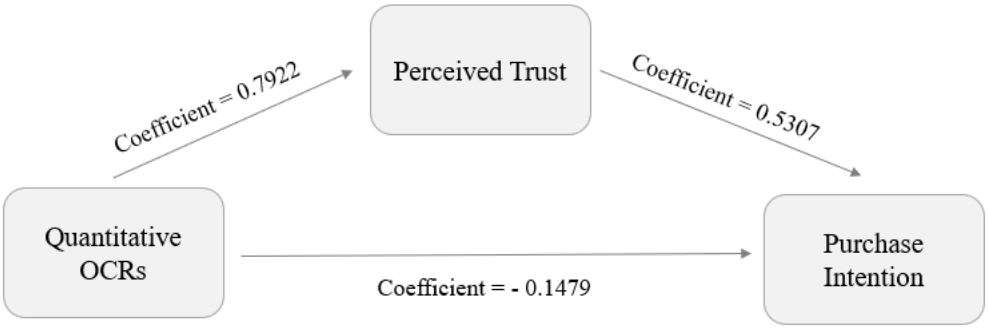


Figure 4: Standardized Coefficients of Mediation Effect of Perceived Trust on the impact of OCRs on Purchase Intention

Results show that, in the presence of the mediator, although the direct effect of OCRs on green product' purchase intention is not statistically significant (p-value = 0.4336), the indirect effect (IE=0.5998) is: 95% CI = (0.2900, 1.0269) (Table 24), meaning that in the presence of the mediator, perceived quality and performance mediates the effect of OCRs on green products' purchase intention. Therefore, **H10a is accepted**.

	Coefficient	BootLLCI	BootULCI
Indirect effect X on Y	0.5998	0.2900	1.0269

Table 24: Indirect Effect of Perceived Quality and Performance on the impact of OCRs on Purchase Intention

H10b: Consumers' perceived product quality and performance regarding green products mediate the effect that the presence of quantitative OCRs has on green products' purchase intention.

In the representative figure below, one can see that the presence of OCRs has a direct impact on green products' purchase intention, with a coefficient of -0.2484, although not statistically significant (p-value = .1966). Moreover, the presence of OCRs has a significant direct effect on the perceived quality and performance regarding green products, with a coefficient of 0.9065 (p-value = .0000). Additionally, a direct effect of the perceived quality and performance on the purchase intention, with a coefficient of 0.5745 (p-value = .0000), is also verified.

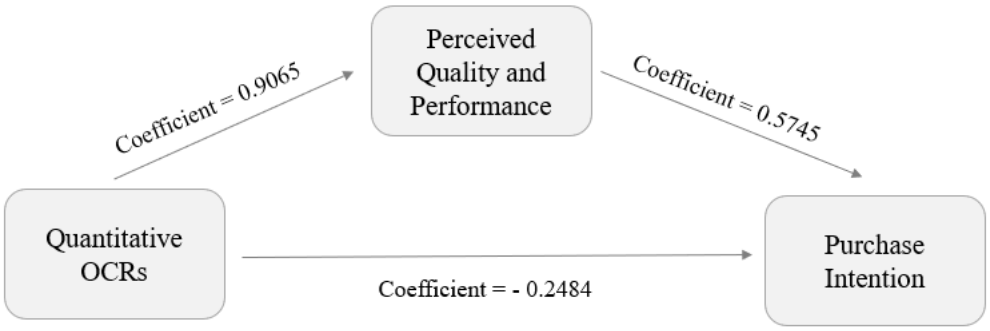


Figure 5: Standardized Coefficients of Mediation Effect of Perceived Quality and Performance on the impact of OCRs on Purchase Intention

Results show that, in the presence of the mediator, there is a not significant direct effect of OCRs on green product' purchase intention (p = .1956). However, the indirect effect (IE=0.5208) is statistically significant: 95% CI = (0.2804, 0.8345) (Table 25), meaning that in the presence of the mediator, perceived quality and performance mediates the effect of OCRs on green products' purchase intention. Thus, **H10b is accepted**.

	Coefficient	BootLLCI	BootULCI
Indirect effect X on Y	0.5208	0.2804	0.8345

Table 25: Indirect Effect of Perceived Quality and Performance on the impact of OCRs on Purchase Intention

5.7. Further Analysis

After being exposed to the stimulus, participants were asked a control question regarding product liking. In order to test it across the different scenarios, a new variable, named Average_Product_Liking, was computed through the average summation of the items used to assess this construct.

In order to compare the results of the different groups, a One-Way Anova was conducted at a 95% confidence level. The test showed that there were statistically significant differences between the means of the different scenarios (F (3,199) = 11.333, p = .000). The Tukey post hoc test stated that there is not a statistically significant difference neither in the means of the scenarios 1 and 2 (p-value = .124), nor 3 and 4 (p-value = .869).

On the other hand, there is a statistically significant difference in the means of the scenario 1 (non-sustainable without review) and 3 (sustainable without review) (p-value = .000), as well as between scenarios 2 (non-sustainable with review) and 4 (sustainable with review) (p-value = .014). Analysing their means, one can say that respondents from scenario 3 like the product more than scenario 1 (Msceanrio_1 = 3.1070 vs Mscenario_3 = 3.8000). Respondents from scenario 4 also like the product more than scenario 2 (Msceanrio_2 = 3.4500 vs Mscenario_4 = 3.9183).

ANOVA – Product Liking					
	N	Mean	Std. Deviation	F-test	Sig.
Scenario 1	51	3.1070	.81740	11.333	.000
Scenario 2	50	3.4500	.68698		
Scenario 3	50	3.8000	.71250		
Scenario 4	52	3.9183	.87408		

Table 26: ANOVA – Product Liking

Multiple Comparisons – Tukey HSD		
Dependent Variable: Average_Product_Liking		
(I) Scenario	(J) Scenario	Sig.
Scenario 1	Scenario 2	.124
	Scenario 3	.000
	Scenario 4	.000
Scenario 2	Scenario 1	.124
	Scenario 3	.114
	Scenario 4	.014
Scenario 3	Scenario 1	.000
	Scenario 2	.114
	Scenario 4	.869
Scenario 4	Scenario 1	.000
	Scenario 2	.014
	Scenario 3	.869

Table 27: Tukey HSD Test – Product Liking

6. CONCLUSION AND FUTURE RESEARCH, IMPLICATIONS AND LIMTATIONS

6.1. Conclusion and Future Research

With the purpose to find out if consumers' willingness to pay for green products is higher than without its presence, if they can boost its consumption and influence consumer's perceptions about green products, this study brings interesting findings to light.

One of the insights, which also answers the first research question, is that in the presence of quantitative OCRs, consumer's willingness to pay for green products is not higher than without its presence. Literature suggests the power of OCRs to decrease price sensitivity by providing consumers reliable information about the product and, thus, reducing consumers' uncertainty and increasing their willingness to pay (Erdem et al., 2002). This is supported by the results of the study, which showed that, in fact, OCRs increase consumers' willingness to pay for non-sustainable products. However, the study also showed that in the presence of OCRs, consumers' willingness to pay for environmentally friendly products is not statistically different from when consumers do not have access to OCRs. This result might be explained by the fact that reviews, by being expected to partially replace price as a quality signal, may lead to an increase of price sensitivity since consumers will compare products not only by price but also by reviews' (and its components) to choose the product that fits them best. Consequently, this increase in consumers' price sensitivity leads to a lower willingness to pay, as when choosing between products equally rated but differing in price, consumers will prefer the cheapest option (Völckner, 2008).

Concerning purchase intention, findings of the study showed that, as suggested by literature, the presence of OCRs leads to a higher purchase intention of non-sustainable products (Park et al., 2007). However, and answering the second research question, results do not prove that in the presence of OCRs, sustainable purchase intention is higher. This result may be explained by the fact that consumers' purchase intention is not always influenced only by ratings (Schlosser, 2011). According to this author, purchase intention is also influenced by other OCRs elements, such as the source of the review and the text-rating congruence. Moreover, regardless of a consumer's innate personal orientation whether to consume sustainable or not, it is known that perceived lack of expertise regarding green products also prevents its consumption (Gleim

et al., 2013). Therefore, quantitative OCRs may not have the ability to overcome this barrier since besides evaluating ratings, consumers also scrutinize comments (qualitative OCRs), which they found to be more diagnostic, credible and persuasive (Jiménez & Mendoza, 2013). Furthermore, green barriers other than the ones considered in the conceptual model, and the lack of expertise previously mentioned, may also help to explain this result. According to Gupta & Ogden (2009), there is a positive correlation between perceived consumer effectiveness (PCE) and sustainable products' purchase intention, being a good predictor of green consumption. PCE is defined as the consumers' own evaluation of the extent to which their behaviours can make a difference on the environmental problem by purchasing sustainable products. Moreover, influenced by subjective norms, a consumer who believes that one's peers continue to make non-sustainable purchase decisions has a low level of PCE and, thus, little incentive to pay a higher price for a green product or to purchase one (Gleim et al., 2013).

Another insight, answering the third research question, is that quantitative product reviews can indeed significantly influence the perceptions that consumers have about green products. According to Kostyra et al., (2016), and proved by the results of the study, in the presence of quantitative OCRs, consumers' perceived trust towards non-sustainable products is higher than without its presence, as well as the perception of the product quality and performance. Results prove that the same happens regarding environmentally friendly products. Consumers' trust on green products is positively influenced by OCRs and is higher when in their presence, as well as consumers' perceived quality and performance, as suggested by Luchs et al. (2010). According to this author, by providing consumers with information through reviews about the technical attributes of the product, their perception that there is a negative relationship between sustainability and product quality is overcame, especially in categories in which the sought attribute is quality and performance. Moreover, results show that in the presence of OCRs, consumers' perceived trust and perceived quality and performance is as high for sustainable products as it is for non-sustainable ones.

Furthermore, as suggested by Erdem et al. (2002), results of the study also show that the perceived trust about green products has a positive impact both on consumers' willingness to pay and green purchase intention. Additionally, results also prove that the perceived quality and performance of environmentally friendly products positively influences consumers' willingness to pay (Kostyra et al., 2016) and their intention to purchase sustainably (Aertsens et al., 2011).

A further analysis also stated that quantitative OCRs have a positive direct impact on consumers' willingness to pay for green products. Moreover, through two mediation tests, one can say that there is an indirect effect of OCRs on the willingness to pay for sustainable products since both perceived trust and perceived quality and performance fully mediate this impact (since in their presence, the direct effect of OCRs on willingness to pay is not significant anymore). On the other hand, there is no direct effect of OCRs on sustainable purchase intention. However, there is a significant indirect impact due to the mediating effect of both perceived trust and perceived quality and performance.

In furtherance, results also state that the presence of quantitative reviews does not make a difference in terms of product liking. On the other hand, it is stated that consumers prefer sustainable products over non-sustainable ones, regardless of the presence of reviews.

Future research could study the ability of qualitative OCRs to increase the willingness to pay and boost sustainable consumption. Moreover, studying other components of product reviews such as the mediating effects of valence, volume or variance on the impact of OCRs on the willingness to pay for sustainable products as well as on its purchase intention would be interesting. Furthermore, other Digital Marketing techniques, such as Influence Marketing, could also be considered an option to overcome other previously identified barriers impeding green consumption, such as lack of expertise on green products or consumer perceived effectiveness.

6.2. Implications for practice and theory

This study provides interesting academic and managerial findings in what concerns the use of quantitative OCRs to enhance consumers' willingness to pay for green products, to boost its consumption and change consumers' perceptions about sustainable products.

Regarding academic applicability, the present paper covers the existing research gap on the "green attitude-behaviour gap" and contributes to knowledge with important findings regarding green consumption and green marketing by studying a new path to close the existent gap between green awareness and consciousness and sustainable consumption behaviour.

Regarding managerial applicability, the present paper allows marketeers to understand that in the presence of quantitative OCRs, consumers' willingness to pay for green products nor its

purchase intention is higher than without its presence. Therefore, companies, only with quantitative OCRs cannot guarantee a higher willingness to pay nor a higher purchase intention of sustainable products and, thus, should also apply other marketing tactics together with quantitative OCRs in order to boost green consumption. Moreover, companies should also be aware that changing the perceptions that consumers have regarding green products is important if a company wants to increase their willingness to pay and raise sustainable consumption. Brands should be aware that willingness to pay for green products, although not higher in the presence of OCRs, is still positively influenced by them as this relationship is fully mediated by perceived trust and perceived quality and performance. It is also important for companies to acknowledge the indirect impact that OCRs have on green purchase intention, mediated also by perceived trust, quality and performance. Therefore, green marketing should work towards increasing consumers' trust in sustainable products and reinforcing their quality and technical attributes, making consumers recognize them for their quality and performance. According to the findings of this paper, marketeers can achieve this change in consumer perceptions by presenting products together with quantitative OCRs. Therefore, brands should motivate satisfied consumers to share their opinion on the products, as well as their experience and make a review on the brands' online store. This will allow potential consumers to have a second source of information about the product, which will decrease their perceived risk, increase the perceived quality and performance and, consequently, increase their willingness to pay and boost green consumption.

6.3. Limitations

Although interesting and useful academic and managerial findings are provided by this study, some limitations need to be considered.

Firstly, the method used to gather primary data presents some disadvantages, such as the lack of control over the participation process. Secondly, the literature reviewed for the development of this paper does not refer specifically to the Portuguese market, the target market of the quantitative analysis.

Moreover, the study deals with Sustainability, which is connected to ethics and morals and nowadays, ignoring the importance of this topic is no longer socially acceptable (Diamantopoulos et al., 2003). Therefore, when asked about the importance they attribute to

the topic (and that constituted a screening question to participate in the study), respondents may have suffered from what is called "social desirability bias", which happens when people control and self-censor their own responses in order to be aligned with what is perceived to be morally and socially correct (Powell & Single, 1996).

Furthermore, although participants of the study stated reading product reviews during the purchase decision process and, therefore, belonging to the desired target, it might happen that they only do so in specific product categories, and not necessarily on personal hygiene.

Another limitation that should be considered is the profile of the sample in what regards to some demographic characteristics. The sample of the study is highly composed by female participants (75%), which could represent a specific perspective regarding gender on the topic of sustainability. Following the same reasoning, the majority of the respondents are aged between 18 and 24 years old (80%). According to Madrigal Moreno et al. (2016), millennials are the generation most concerned with environmental issues and that attribute a stronger importance on the topic.

It should also be acknowledged that the four stimuli created for the study were developed by the author and not by a professional marketeer. Therefore, although supported either by literature or by being a common market practice, all the components included in the stimuli, could potentially influence the results and thus be considered a limitation.

REFERENCE LIST

Aertsens, J., Mondelaers, K., Verbeke, W., Buysse, J., & van Huylenbroeck, G. (2011). The influence of subjective and objective knowledge on attitude, motivations and consumption of organic food. *British Food Journal*, *113*(11), 1353–1378. https://doi.org/10.1108/00070701111179988

Agler, R., & De Boeck, P. (2017). On the interpretation and use of mediation: Multiple perspectives on mediation analysis. *Frontiers in Psychology*, *8*(NOV), 1–11. https://doi.org/10.3389/fpsyg.2017.01984

Algesheimer, R., Borle, S., Dholakia, U. M., & Singh, S. S. (2010). The impact of customer community participation on customer behaviors: An empirical investigation. *Marketing Science*, *29*(4), 756–769. https://doi.org/10.1287/mksc.1090.0555

Awad, N. F., & Ragowsky, A. (2008). Establishing trust in electronic commerce through online word of mouth: An examination across genders. *Journal of Management Information Systems*, *24*(4), 101–121. https://doi.org/10.2753/MIS0742-1222240404

Bickart, B., & Schindler, R. M. (2001). Internet forums as influential sources of consumer information. *Journal of Interactive Marketing*, *15*(3), 31. https://doi.org/10.1002/dir.1014.abs

Borin, N., Lindsey-Mullikin, J., & Krishnan, R. (2013). An analysis of consumer reactions to green strategies. *Journal of Product and Brand Management*, *22*(2), 118–128. https://doi.org/10.1108/10610421311320997

Bray, J., Johns, N., & Kilburn, D. (2011). An Exploratory Study into the Factors Impeding Ethical Consumption. *Journal of Business Ethics*, *98*(4), 597–608. https://doi.org/10.1007/s10551-010-0640-9

Breidert, C., Hahsler, M., & Reutterer, T. (2006). A Review of Methods for Measuring Willingness-to-pay. *Innovative Marketing*, 1–32. https://doi.org/10.3111/13696998.2011.644408

Brynjolfsson, E., & Smith, M. (2000). Frictionless Commerce? A comparison of internet and conventional retailers. *Management Science*, *46*(4), 563–585.

Carrigan, M., & Attalla, A. (2001). The myth of the ethical consumer – do ethics matter in purchase behaviour? *Journal of Consumer Marketing*, *18*(7), 560–578. https://doi.org/10.1108/07363760110410263

Chatzidakis, A., Hibbert, S., Mittusis, D., & Smith, A. (2004). Virtue in Consumption ? *Journal of Marketing Management*, *20*, 527–544.

Chen, J., & Lobo, A. (2012). Organic food products in China: determinants of consumers' purchase intentions. *International Review of Retail, Distribution and Consumer Research*, *22*(3), 293–314. https://doi.org/10.1080/09593969.2012.682596

Chen, T. B., & Chai, L. T. (2010). Attitude towards the environment and green products: Consumers' perspective. *Management Science and Engineering*, *4*(2), 27–39. http://50.22.92.12/index.php/mse/article/view/1324

Chen, Y. S., & Chang, C. . H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Management Decision*, *50*(3), 502–520. https://doi.org/10.1108/00251741211216250

Chen, Y. S., & Chang, C. H. (2013). Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction. *Management Decision*, *51*(1), 63–82. https://doi.org/10.1108/00251741311291319

Chen, Y., & Xie, J. (2008). Online consumer review: Word-of-mouth as a new element of marketing communication mix. *Management Science*, *54*(3), 477–491. https://doi.org/10.1287/mnsc.1070.0810

Chen, Yu Shan. (2010). The drivers of green brand equity: Green brand image, green satisfaction, and green trust. *Journal of Business Ethics*, *93*(2), 307–319. https://doi.org/10.1007/s10551-009-0223-9

Chevalier, J. A., & Mayzlin, D. (2006). The effect of word of mouth on sales: Online book reviews. *Journal of Marketing Research*, *43*(3), 345–354. https://doi.org/10.1509/jmkr.43.3.345

Childers, T. L., & Rao, A. R. (1992). The influence of familial and peer-based reference groups on consumer decisions. *Journal of Consumer Psychology*, *19*, 198–211.

Chintagunta, P. K., Gopinath, S., & Venkataraman, S. (2010). The effects of online user reviews

on movie box office performance: Accounting for sequential rollout and aggregation across local markets. *Marketing Science*, *29*(5), 944–957. https://doi.org/10.1287/mksc.1100.0572

Chiou, J. S., & Droge, C. (2006). Service quality, trust, specific asset investment, and expertise: Direct and indirect effects in a satisfaction-loyalty framework. *Journal of the Academy of Marketing Science*, *34*(4), 613–627. https://doi.org/10.1177/0092070306286934

Connell, K. Y. H. (2010). Internal and external barriers to eco-conscious apparel acquisition. *International Journal of Consumer Studies*, *34*(3), 279–286. https://doi.org/10.1111/j.1470-6431.2010.00865.x

Cui, G., Lui, H. K., & Guo, X. (2012). The effect of online consumer reviews on new product sales. *International Journal of Electronic Commerce*, *17*(1), 39–58. https://doi.org/10.2753/JEC1086-4415170102

Dellarocas, C., Zhang, X., & Awad, N. (2007). Exploring the value of online product reviews in forecasting sales: the case of motion pictures. *Journal of Interactive Marketing*, *21*(4), 23–45. https://doi.org/10.1002/dir

Dellarocas, Chrysanthos. (2003). The digitization of word of mouth: Promise and challenges of online feedback mechanisms. *Management Science*, *49*(10), 1407–1424. https://doi.org/10.1287/mnsc.49.10.1407.17308

Diamantopoulos, A., Schlegelmilch, B. B., Sinkovics, R. R., & Bohlen, G. M. (2003). Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *Journal of Business Research*, *56*(6), 465–480. https://doi.org/10.1016/S0148-2963(01)00241-7

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research*, *28*(3), 307. https://doi.org/10.2307/3172866

Duan, W., Gu, B., & Whinston, A. B. (2008). Do online reviews matter? - An empirical investigation of panel data. *Decision Support Systems*, *45*(4), 1007–1016. https://doi.org/10.1016/j.dss.2008.04.001

Erdem, T., & Swait, J. (1998). Brand Equity as signaling Phenomenon, Erdem.pdf. *Journal of*

Consumer Psychology, *7*(2), 131–157.

Erdem, T., Swait, J., & Louviere, J. (2002). The impact of brand credibility on consumer price sensitivity. *International Journal of Research in Marketing*, *19*, 1–19. https://doi.org/10.1109/INFOP.2015.7489375

Gleim, M. R., Smith, J. S., Andrews, D., & Cronin, J. J. (2013). Against the Green: A Multi-method Examination of the Barriers to Green Consumption. *Journal of Retailing*, *89*(1), 44–61. https://doi.org/10.1016/j.jretai.2012.10.001

Gupta, S., & Ogden, D. T. (2009). To buy or not to buy? A social dilemma perspective on green buying. *Journal of Consumer Marketing*, *26*(6), 378–393. https://doi.org/10.1108/07363760910988201

Hennig-Thurau, T., Gwinner, K., Walsh, G., & Gremler, D. (2004). Electronic Word-of-Mouth Via Consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? *Journal of Interactive Marketing*, *18*(1), 38–52. https://doi.org/10.1177/0971890720000202

Jiménez, F. R., & Mendoza, N. A. (2013). Too popular to ignore: The influence of online reviews on purchase intentions of search and experience products. *Journal of Interactive Marketing*, *27*(3), 226–235. https://doi.org/10.1016/j.intmar.2013.04.004

Johnstone, M., & Tan, L. (2015). Exploring the Gap Between Consumers' Green Rethoric and Purchasing Behaviour. *Journal of Business Ethics*, *132*(2), 311–328. https://doi.org/10.1007/s

Joshi, Y., & Rahman, Z. (2015). Factors Affecting Green Purchase Behaviour and Future Research Directions. In *International Strategic Management Review* (Vol. 3, Issues 1–2). Holy Spirit University of Kaslik. https://doi.org/10.1016/j.ism.2015.04.001

King, R. A., Racherla, P., & Bush, V. D. (2014). What we know and don't know about online word-of-mouth: A review and synthesis of the literature. *Journal of Interactive Marketing*, *28*(3), 167–183. https://doi.org/10.1016/j.intmar.2014.02.001

Kostyra, D. S., Reiner, J., Natter, M., & Klapper, D. (2016). Decomposing the effects of online customer reviews on brand, price, and product attributes. *International Journal of Research in Marketing*, *33*(1), 11–26. https://doi.org/10.1016/j.ijresmar.2014.12.004

Luchs, M. G., Naylor, R. W., Irwin, J. R., & Raghunathan, R. (2010). The sustainability liability: Potential negative effects of ethicality on product preference. *Journal of Marketing*, *74*(5), 18–31. https://doi.org/10.1509/jmkg.74.5.18

Madrigal Moreno, F., Ávila Carreón, F., & Madrigal Moreno, S. (2016). The Adoption of the Green Marketing in the Millennium Generation. *International Journal of Marketing Studies*, *8*(2), 97. https://doi.org/10.5539/ijms.v8n2p97

McKnight, D. H., & Choudhury, V. (2006). Distrust and trust in B2C e-commerce: Do they differ? *ACM International Conference Proceeding Series*, 482–491. https://doi.org/10.1145/1151454.1151527

Moe, W. W., Trusov, M., & Smith, R. H. (2011). The value of social dynamics in online product ratings forums. *Journal of Marketing Research*, *48*(3), 444–456. https://doi.org/10.1509/jmkr.48.3.444

Moisander, J. (2007). Motivational complexity of green consumerism. *International Journal of Consumer Studies*, *31*(4), 404–409. https://doi.org/10.1111/j.1470-6431.2007.00586.x

Moraes, C., Carrigan, M., & Szmigin, I. (2012). The coherence of inconsistencies: Attitude-behaviour gaps and new consumption communities. *Journal of Marketing Management*, *28*(1–2), 103–128. https://doi.org/10.1080/0267257X.2011.615482

Nambisan, S., & Baron, R. (2007). Interactions in virtual customer environments: implications for product support and customer relationship management. *Journal of Interactive Marketing*, *21*(2), 42–62. https://doi.org/10.1002/dir

Osterhus, T. L. (1997). Pro-social consumer influence strategies: When and how do they work? *Journal of Marketing*, *61*(4), 16–29. https://doi.org/10.2307/1252084

Park, D. H., & Kim, S. (2008). The effects of consumer knowledge on message processing of electronic word-of-mouth via online consumer reviews. *Electronic Commerce Research and Applications*, *7*(4), 399–410. https://doi.org/10.1016/j.elerap.2007.12.001

Park, D. H., Lee, J., & Han, I. (2007). The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement. *International Journal of Electronic Commerce*, *11*(4), 125–148. https://doi.org/10.2753/JEC1086-4415110405

Pavlou, P. A., & Dimoka, A. (2006). The nature and role of feedback text comments in online

marketplaces: Implications for trust building, price premiums and seller differentiation. *Information Systems Research*, *17*(4), 392–414. https://doi.org/10.1287/isre.1060.0106

Petty, R. E., & Caccioppo, J. T. (1986). The Elaboration Likelihood Model of Persuasion. *Advances in Experimental Social Psychology, Berkowitz L. Ed. New York: Academic Press*, 123–205. https://doi.org/10.4324/9781315624365-2

Pickett-Baker, J., & Ozaki, R. (2008). Pro-environmental products: Marketing influence on consumer purchase decision. *Journal of Consumer Marketing*, *25*(5), 281–293. https://doi.org/10.1108/07363760810890516

Powell, R. A., & Single, M. (1996). Methodology Matters-V Focus Groups. *International Journal for Quality and Health Care*, *8*(5), 499–504.

Rahbar, E., & Wahid, N. A. (2011). Investigation of green marketing tools' effect on consumers' purchase behavior. *Business Strategy Series*, *12*(2), 73–83. https://doi.org/10.1108/17515631111114877

Schlosser, A. E. (2011). Can including pros and cons increase the helpfulness and persuasiveness of online reviews? The interactive effects of ratings and arguments. *Journal of Consumer Psychology*, *21*(3), 226–239. https://doi.org/10.1016/j

Sen, S., & Lerman, D. (2007). Why are you telling me this? *Journal of Interactive Marketing*, *21*(4), 2–20. https://doi.org/10.1002/dir

Shrum, L. J., McCarty, J. A., & Lowrey, T. M. (1995). Buyer characteristics of the green consumer and their implications for advertising strategy. *Journal of Advertising*, *24*(2), 71–82. https://doi.org/10.1080/00913367.1995.10673477

Smith, S., & Paladino, A. (2010). Eating clean and green? Investigating consumer motivations towards the purchase of organic food. *Australasian Marketing Journal*, *18*(2), 93–104. https://doi.org/10.1016/j.ausmj.2010.01.001

Spears, N., & Singh, S. N. (2004). Measuring attitude toward the brand and purchase intentions. *Journal of Current Issues and Research in Advertising*, *26*(2), 53–66. https://doi.org/10.1080/10641734.2004.10505164

Sridhar, S., & Srinivasan, R. (2012). Social influence effects in online product ratings. *Journal of Marketing*, *76*(5), 70–88. https://doi.org/10.1509/jm.10.0377

Statista. (2020). *Share of sustainable products in the FMCG market in the United States from 2013 to 2018*. https://www.statista.com/statistics/1104712/market-share-of-sustainable-fmcg-products-us-per-year/

Trusov, M., Bucklin, R. E., & Pauwels, K. (2009). Effects of word-of-mouth versus traditional marketing: Findings from an internet social networking site. *Journal of Marketing*, *73*(5), 90–102. https://doi.org/10.1509/jmkg.73.5.90

Tsakiridou, E., Boutsouki, C., Zotos, Y., & Mattas, K. (2008). Attitudes and behaviour towards organic products: An exploratory study. *International Journal of Retail and Distribution Management*, *36*(2), 158–175. https://doi.org/10.1108/09590550810853093

United, N. (2014). *New Programme to Strengthen Consumer Information for the Shift to Sustainable Consumption*. https://www.unep.org/news-and-stories/press-release/new-programme-strengthen-consumer-information-shift-sustainable

Völckner, F. (2008). The dual role of price: Decomposing consumers' reactions to price. *Journal of the Academy of Marketing Science*, *36*(3), 359–377. https://doi.org/10.1007/s11747-007-0076-7

Wen, C., Prybutok, V. R., & Xu, C. (2011). An integrated model for customer online repurchase intention. *Journal of Computer Information Systems*, *52*(1), 14–23. https://doi.org/10.1080/08874417.2011.11645518

Young, W., Hwang, K., McDonald, S., & Oates, C. J. (2010). Sustainable consumption: Green consumer behaviour when purchasing products. *Sustainable Development*, *18*(1), 20–31. https://doi.org/10.1002/sd.394

Zabkar, V., & Hosta, M. (2013). Willingness to act and environmentally conscious consumer behaviour: Can prosocial status perceptions help overcome the gap? *International Journal of Consumer Studies*, *37*(3), 257–264. https://doi.org/10.1111/j.1470-6431.2012.01134.x

APPENDICES

Appendix 1 - Survey

Q1 Dear participant, I hope you are well and safe.

Welcome and thank you for taking the time to complete this questionnaire. This research is part of a master's dissertation and intends to study your interest in some products.

Your participation is extremely important for its realization. This survey takes approximately 3 minutes to complete. The data obtained will be treated anonymously and confidentially. Therefore, I ask you to answer honestly and spontaneously. There are no right or wrong answers. Thank you for your contribution! Thank you!

Catarina

Q1 Caro/a participante, espero que se encontre bem e em segurança. Seja bem-vindo/a e obrigada por dedicar o seu tempo para preencher este questionário. Esta pesquisa faz parte de uma dissertação de mestrado e pretende estudar o seu interesse por alguns produtos.

A sua participação é extremamente importante para a sua concretização. Esta pesquisa leva aproximadamente 3 minutos para ser concluída. Os dados obtidos serão tratados de forma anónima e confidencial. Assim sendo, peço que responda de forma honesta e espontânea. Não há respostas certas ou erradas. Agradeço a sua contribuição! Muito obrigada!

Catarina

Screening Questions

Q2 Nationality | Nacionalidade

- ○ Portuguese (1) | Portuguesa (1)
- ○ Other (2) | Outra (2)

➢ Respondents answering to this question with “Other” were redirected to the end of the survey.

Q3 Please indicate your level of agreement with the following sentence on a scale of 1 (strongly disagree) to 7 (strongly agree):

Q3 Por favor, indique o seu nível de concordância com a seguinte frase numa escala de 1 (discordo totalmente) a 7 (concordo totalmente):

	Totally Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Totally Agree (7)
I consider Sustainability an important topic. (1)	○	○	○	○	○	○	○

	Discordo totalmente (1)	Discordo (2)	Dicordo parcialmente (3)	Nem concordo nem discordo (4)	Concordo parcialmente (5)	Concordo (6)	Concordo totalmente (7)
Considero Sustentabilidade um tópico importante. (1)	○	○	○	○	○	○	○

- Respondents answering to this question with 1 or 2 were redirected to the end of the survey.

Q4 Please indicate your level of agreement with the following sentence on a scale of 1 (strongly disagree) to 7 (strongly agree):

Q4 Por favor, indique o seu nível de concordância com a seguinte frase numa escala de 1 (discordo totalmente) a 7 (concordo totalmente):

	Totally Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Totally Agree (7)
I read product reviews by other consumers in retailers' online stores during the purchase decision process. (1)	○	○	○	○	○	○	○

	Discordo totalmente (1)	Discordo (2)	Discordo parcialmente (3)	Nem concordo nem discordo (4)	Concordo parcialmente (5)	Concordo (6)	Concordo totalmente (7)
Eu leio avaliações de produtos por parte de outros consumidores nas lojas online dos retalhistas durante o processo de decisão de compra. (1)	○	○	○	○	○	○	○

- Respondents answering to this question with 1 or 2 were redirected to the end of the survey.

Q5 Imagine that you are at a retailer's online store, in the personal care products section, and you want to select a shampoo for purchase. Please, I ask you to carefully look at the following information regarding one of the products available, and then answer the questions that are asked about that product:

Q5 Imagine que se encontra na loja online de um retalhista, na secção de produtos de higiene pessoal, e pretende selecionar um champô para compra. Por favor, peço-lhe que veja com atenção a informação que se segue relativamente a um dos produtos à disposição, e que de seguida responda às questões que lhe são feitas relativamente a esse mesmo produto:

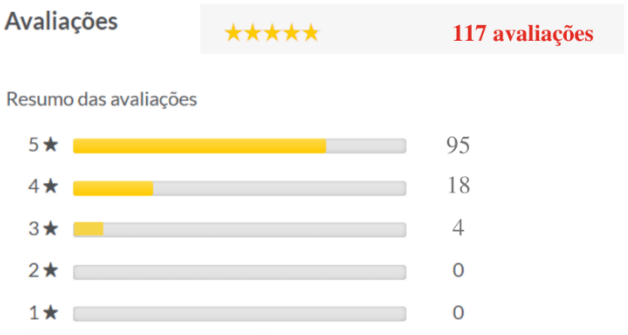
Scenario 1 – Regular Product without the presence of quantitative OCRs

CHAMPÔ

Descrição do Produto:
Ideal para todos os tipos de cabelo que procuram uma dose de cuidado diário.
Massaje no cabelo molhado para criar espuma. Enxagúe.
Resultados excelentes, a uma ótima relaçao qualidade-preço.

Scenario 2 – Regular Product with the presence of quantitative OCRs

CHAMPÔ



Descrição do Produto:
Ideal para todos os tipos de cabelo que procuram uma dose de cuidado diário.
Massaje no cabelo molhado para criar espuma. Enxagúe.
Resultados excelentes, a uma ótima relação qualidade-preço.

Scenario 3 – Sustainable Product without the presence of quantitative OCRs

CHAMPÔ BIO & FRIENDLY

Descrição do Produto:
Ideal para todos os tipos de cabelo que procuram uma dose de cuidado diário.
Massaje no cabelo molhado para criar espuma. Enxagúe.
- Vegan
- Processo de produção com menos 30% de gasto de água e energia proveniente de fonte renovável.
Resultados excelentes, a uma ótima relação qualidade-preço.

Scenario 4 – Sustainable Product with the presence of quantitative OCRs

Q6 Based on the information you have just been given regarding the product, please indicate your level of agreement with the following phrases on a scale of 1 (strongly disagree) to 7 (strongly agree):

Q6 Com base na informação que acabou de lhe ser dada relativamente ao produto, por favor indique o seu nível de concordância com as seguintes frases numa escala de 1 (discordo totalmente) a 7 (concordo totalmente):

	Totally Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Totally Agree (7)
The product belongs to the personal hygiene category. (1)	○	○	○	○	○	○	○
The product is for daily use. (2)	○	○	○	○	○	○	○
The product is sustainable. (3)	○	○	○	○	○	○	○
The product is presented together with product reviews. (4)	○	○	○	○	○	○	○

	Discordo totalmente (1)	Discordo (2)	Discordo parcialmente (3)	Nem concordo nem discordo (4)	Concordo parcialmente (5)	Concordo (6)	Concordo totalmente (7)
O produto pertence à categoria de higiene pessoal. (1)	○	○	○	○	○	○	○
O produto é para uso diário. (2)	○	○	○	○	○	○	○
O produto é sustentável. (3)	○	○	○	○	○	○	○
O produto é apresentado juntament com avalições de consumidores. (4)	○	○	○	○	○	○	○

Q7 Please describe your perception of the product you just saw:

Q7 Por favor descreva a sua perceção relativamente ao produto que acabou de ver:

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Uninteresting	○	○	○	○	○	Interesting
Unappealing	○	○	○	○	○	Appealing
Bad	○	○	○	○	○	Good
Unpleasant	○	○	○	○	○	Pleasant

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Desinteressante	○	○	○	○	○	Interessante
Não apelativo	○	○	○	○	○	Apelativo
Mau	○	○	○	○	○	Bom
Desagradável	○	○	○	○	○	Agradável

Q8 Have you ever bought / used a product similar to the one you saw?

Q8 Já alguma vez comprou/usou um produto semelhante àquele que viu?

○ Yes | Sim (1)

○ No | Não (2)

- Participants were, again, exposed to the stimuli.

Q9 Based on the information you just saw, please rate your level of agreement with the following phrases on a scale of 1 (strongly disagree) to 7 (strongly agree):

Q9 Com base na informação que acabou de ver, por favor avalie o seu nível de concordância com as seguintes frases numa escala de 1 (discordo totalmente) a 7 (concordo totalmente):

	Totally Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Totally Agree (7)
The product seems to be honest and to fulfil what it is proposed. (1)	○	○	○	○	○	○	○
The product looks reliable. (2)	○	○	○	○	○	○	○
The product seems to satisfy my needs and expectations. (3)	○	○	○	○	○	○	○

	Discordo totalmente (1)	Discordo (2)	Discordo parcialmente (3)	Nem concordo nem discordo (4)	Concordo parcialmente (5)	Concordo (6)	Concordo totalmente (7)
O produto parece ser honesto e cumprir aquilo a que se propõe. (1)	○	○	○	○	○	○	○
O produto parece confiável. (2)	○	○	○	○	○	○	○
O produto parece satisfazer as minhas necessidades e expectativas. (3)	○	○	○	○	○	○	○

Q10 Based on the information you have just been given regarding the product, please rate your level of agreement with the following phrases on a scale of 1 (strongly disagree) to 7 (strongly agree):

Q10 Com base na informação que acabou de lhe ser dada relativamente ao produto, por favor avalie o seu nível de concordância com as seguintes frases numa escala de 1 (discordo totalmente) a 7 (concordo totalmente):

	Totally Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Totally Agree (7)
The product seems to be efficient. (1)	○	○	○	○	○	○	○
The product seems to be of very good quality. (2)	○	○	○	○	○	○	○
The product seems to perform well. (3)	○	○	○	○	○	○	○

	Discordo totalmente (1)	Discordo (2)	Discordo parcialmente (3)	Nem concordo nem discordo (4)	Concordo parcialmente (5)	Concordo (6)	Concordo totalmente (7)
O produto parece ser eficiente. (1)	○	○	○	○	○	○	○
O produto parece ser de muito boa qualidade. (2)	○	○	○	○	○	○	○
O produto parece ter um bom desempenho. (3)	○	○	○	○	○	○	○

Q11 The product you just saw is on sale for **6.99€**. Based on the information you have regarding the product, please rate your level of agreement with the following phrases on a scale of 1 (strongly disagree) to 7 (strongly agree):

Q11 O produto que acabou de ver encontra-se à venda por **6,99€**. Com base na informação de que dispõe relativamente ao produto, por favor avalie o seu nível de concordância com as seguintes frases numa escala de 1 (discordo totalmente) a 7 (concordo totalmente):

	Totally Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Totally Agree (7)
I consider the price of the product fair. (1)	○	○	○	○	○	○	○
I believe that the product is worth the price indicated. (2)	○	○	○	○	○	○	○
I would be willing to pay this price for the product. (3)	○	○	○	○	○	○	○

	Discordo totalmente (1)	Discordo (2)	Discordo parcialmente (3)	Nem concordo nem discordo (4)	Concordo parcialmente (5)	Concordo (6)	Concordo totalmente (7)
Considero o preço do produto justo. (1)	○	○	○	○	○	○	○
Considero que o produto vale o preço indicado. (2)	○	○	○	○	○	○	○
Estaria disposto a pagar este preço pelo produto. (3)	○	○	○	○	○	○	○

Q12 Based on the information you have just been given regarding the product, please rate your level of agreement with the following phrases on a scale of 1 (strongly disagree) to 7 (strongly agree):

Q12 Com base na informação que acabou de lhe ser dada relativamente ao produto, por favor avalie o seu nível de concordância com as seguintes frases numa escala de 1 (discordo totalmente) a 7 (concordo totalmente):

	Totally Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Totally Agree (7)
I would consider buying this product. (1)	○	○	○	○	○	○	○
My intention to buy the product is very high. (2)	○	○	○	○	○	○	○
The probability of buying the product is very high. (3)	○	○	○	○	○	○	○

	Discordo totalmente (1)	Discordo (2)	Discordo parcialmente (3)	Nem concordo nem discordo (4)	Concordo parcialmente (5)	Concordo (6)	Concordo totalmente (7)
Eu consideraria comprar este produto. (1)	○	○	○	○	○	○	○
A minha intenção de comprar o produto é muito alta. (2)	○	○	○	○	○	○	○
A probabilidade de comprar o produto é muito alta. (3)	○	○	○	○	○	○	○

Q37 Gender | Género

○ Female | Feminino (1)

○ Male | Masculino (2)

○ Other | Outro (3)

Q38 Age | Idade

- ○ < 18 years old | < 18 anos (1)
- ○ 18 - 24 years old | 18 - 24 anos (2)
- ○ 25 - 34 years old | 25 - 34 anos (3)
- ○ 35 - 44 years old | 35 - 44 anos (4)
- ○ 45 - 54 years old | 45 - 54 anos (5)
- ○ 55 - 64 years old | 55 - 64 anos (7)
- ○ > 65 years old > 65 anos (6)

Q39 Monthly Gross Income | Rendimento bruto mensal

- ○ Less than 635€ | Menos de 635€ (1)
- ○ 635€ - 1000€ (2)
- ○ 1001€ - 1500€ (3)
- ○ 1501€ - 2000€ (4)
- ○ More than 2000€ | Mais de 2000€ (5)
- ○ Prefer not to say | Prefiro não dizer (6)

Q40 Occupation | Ocupação

- ○ Student | Estudante (1)
- ○ Student-Worker | Trabalhador-Estudante (2)
- ○ Employed | Empregado(a) (3)
- ○ Unemployed) | Desempregado(a) (4)
- ○ Self-Employed | Trabalhador por Conta Própria (5)
- ○ Retired | Reformado(a) (6)

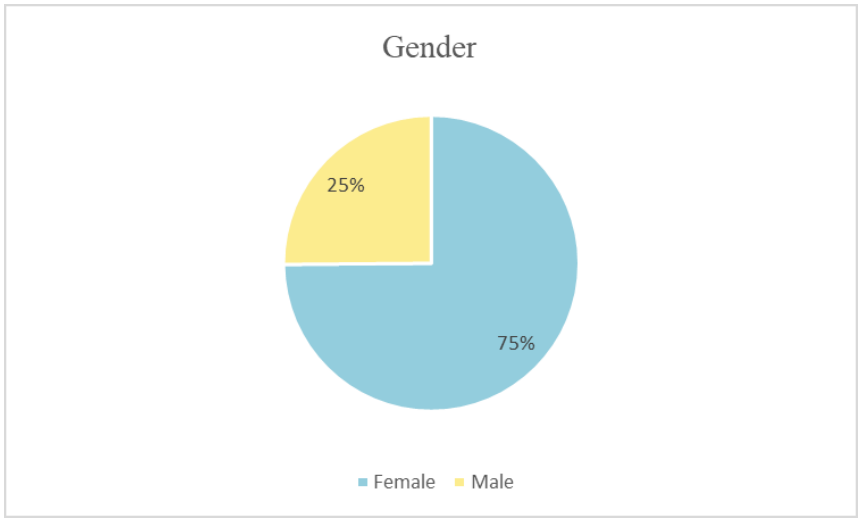
Q41 Completed Education | Educação Completa

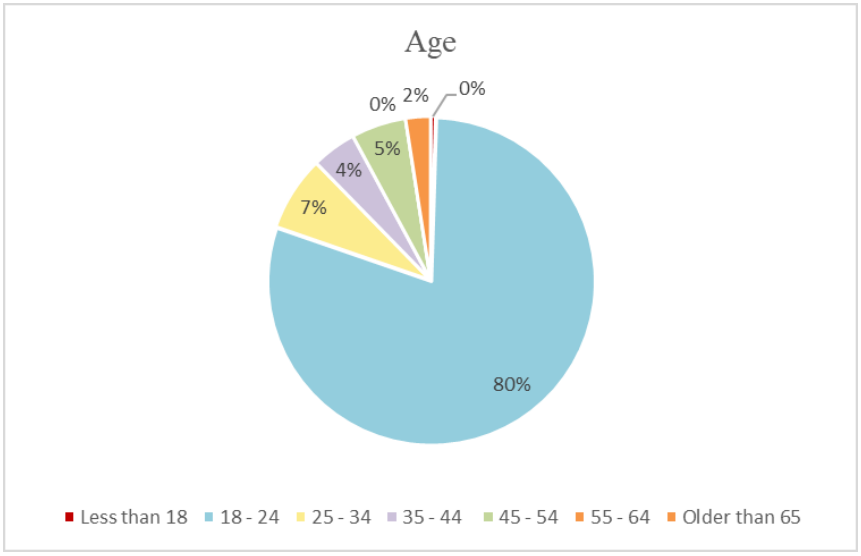
- ○ High School or Lower | Ensino Secundário ou Inferior (1)
- ○ Undergraduate | Licenciatura (2)
- ○ Master's | Mestrado (3)
- ○ PhD) | Doutoramento (4)

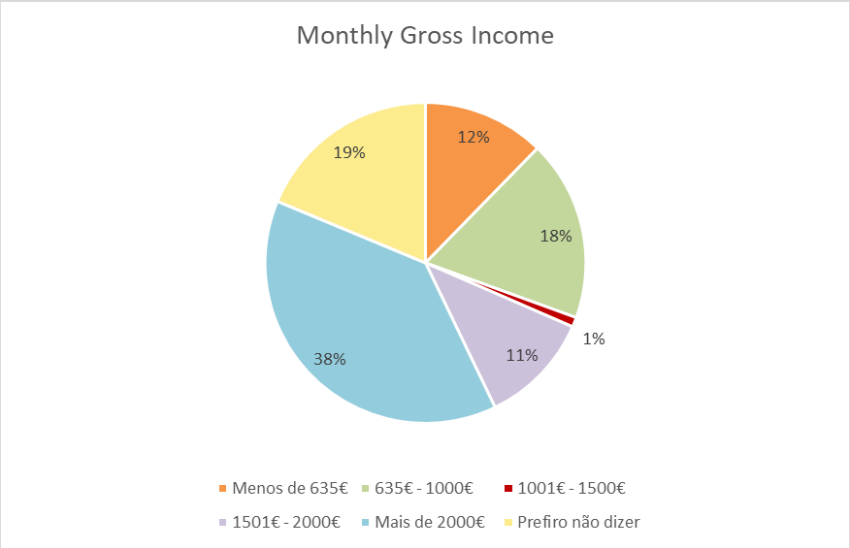
Appendix 2 – Dependent Variables

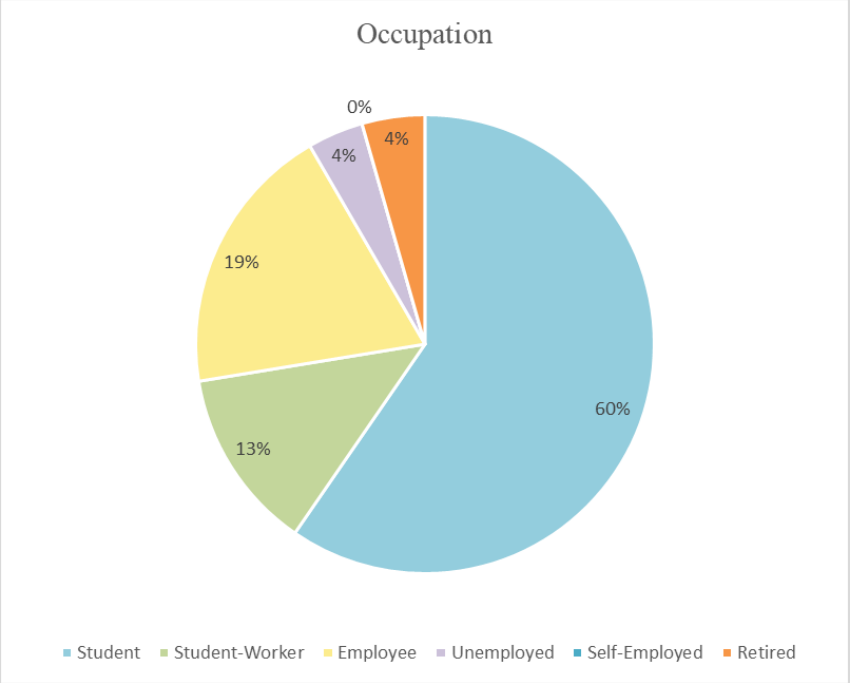
Dependent Variables		
Construct	Item	Source
Product Liking	"Uninteresting" vs "Interesting"	(Spears & Singh, 2004)
	"Unappealing" vs "Appealing"	
	"Bad" vs "Good"	
	"Unpleasant" vs "Pleasant"	
Reduced Uncertainty	"The product seems to be honest and to fulfil what it is proposed"	(Chiou & Droge, 2006)
	"The product looks reliable"	
	"The product seems to satisfy my needs and expectations"	
Perceived Quality and Performance	"The product seems to be efficient"	(Dodds et al., 1991)
	"The product seems to be of very good quality"	
	"The product seems to perform well"	
Willingness to Pay	"I consider the price of the product fair"	(Breidert et al., 2006)
	"I believe that the product is worth the price indicated"	
	"I would be willing to pay this price for the product"	
Purchase Intention	"I would consider buying this product"	(Dodds et al., 1991)
	"My intention to buy the product is very high"	
	"The probability of buying the product is very high"	

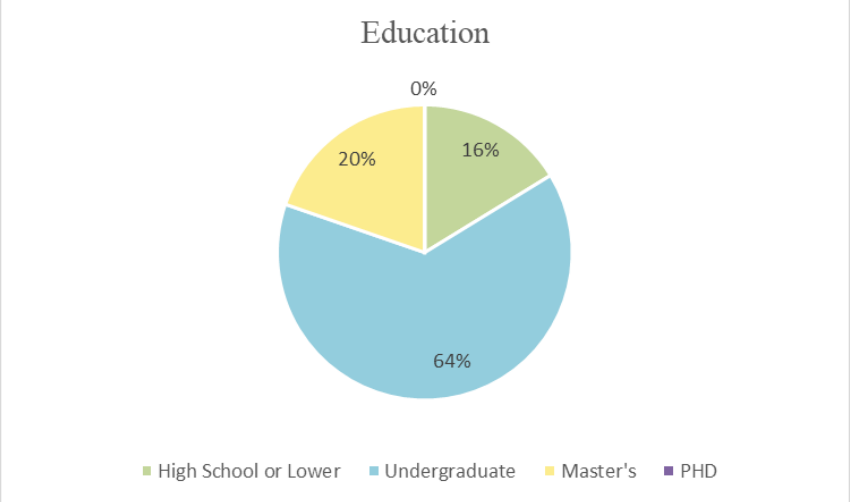
Appendix 3 – Survey Statistics: Demographics






Monthly Gross Income
12%
18%
1%
11%
38%
19%
Menos de 635€
635€ - 1000€
1001€ - 1500€
1501€ - 2000€
Mais de 2000€
Prefiro não dizer


Occupation
0%
4%
4%
19%
60%
13%
Student
Student-Worker
Employee
Unemployed
Self-Employed
Retired


Education
0%
16%
20%
64%
High School or Lower
Undergraduate
Master's
PHD