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Changing from plastic to ecologically- designed bottles

The impact on brand valuations

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Abstract

The present dissertation studies consumers' valuations concerning the change of plastic bottles to ecologically-designed bottles by brands. An experimental study was conducted to investigate if the different levels of brand familiarity (low vs. high) and engagement with social issues impact consumers' willingness to pay (WTP), likelihood of purchase and consumer perceived ethicality (CPE), for the two types of bottles. Results show that consumers' brand valuations are higher when the eco-bottle is presented, showing that there is more willingness to pay and likelihood of purchase this type of bottle. Indeed, consumers' level of ethicality perception with a brand is also increased when a brand changes from plastic to ecologically-designed bottles. Interestingly, this effect is mostly observed for low familiar brands even when consumers have low levels of engagement with social issues.

Resumo

A presente dissertação estuda o efeito da mudança de garrafas de plástico para garrafas ecológicas. Especificamente, examina o impacto que a familiaridade com a marca (alta vs. baixa) e o nível de compromisso com causas ambientais e sociais têm na disposição em pagar, na intenção de compra e nas percepções éticas do consumidor face a marcas que mudam de garrafas de plástico para as garrafas ecológicas. Neste âmbito, realizou-se um estudo experimental que investiga se os diferentes níveis de familiaridade com a marca e de compromisso com causas sociais têm impacto nas avaliações do consumidor. Os resultados mostram que não só as intenções de compra são mais elevadas, como a predisposição para pagar pela garrafa ecológica é superior. As percepções éticas do consumidor tornam-se também mais elevadas quando a garrafa ecológica é apresentada. No entanto, este efeito é maioritariamente observado quando a marca e os níveis de envolvimento com causas sociais são baixos.

Keywords: Sustainability, Consumer Perceived Ethicality, Brand familiarity, Bottled water, Plastic bottles

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Table of Contents

Abstract	2
Acknowledgements	3
Table of tables	5
List of figures	5
1. Introduction	
1.1 Problem definition and Relevance	6
1.2 Research objective and Questions	7
1.3 Research structure	8
2. Academic Literature Review	
2.1 Sustainability: an overview into the concept	8
2.2 Corporate Social Responsibility	9
2.2.1 CSR impact on consumers' purchase intentions	10
2.3 Brand's sustainable behaviours and Consumer Perceived Ethicality	10
2.4 Brand familiarity and purchase intentions for sustainable products	11
2.5 Change of behaviours and the two routes of persuasion	11
2.6 Package Design: ecologically-designed packaging and product evaluations	12
3. Conceptual Framework and Hypothesis	13
3.1 Hypothesis	14
4. Methodology and Data Collection	16
4.1 Research Method	16
4.2 Sampling	16
4.3 Research Instruments	16
4.3.1 Pilot Study	16
4.3.2 Main Study	18
4.4 Design and Procedure	18
4.5 Stimuli Development	19
4.6 Variables Description	21
4.6.1 Variables coding	22
5. Results and Analysis	23
5.1 Sample Characterization	23
5.2 Scale Reliability	23
5.3 Outlier Analysis	24
5.4 Manipulation Check	24
5.5 Main Results	25

5.5.1 The impact of package design	26
5.5.2 The moderating effect of level of engagement with social issues	27
5.5.3 CPE as a mediator	29
5.5.4 The importance of branded package design on consumers' willingness to pay for products at events	32
6. Conclusions and Implications	34
6.1 Theoretical Implications	36
6.2 Managerial Implications	37
6.3 Limitations and Future Research	38
Appendices	38
References	48

Table of Tables

Table 1: Brand familiarity t-test for the pilot survey	17
Table 2: Package sustainability t-test for the pilot survey	18
Table 3: Manipulation Scenarios.....	20
Table 4: Variables recoded.....	22
Table 5: Reliability test for multi-item scales	23
Table 6: Manipulation check for Brand familiarity and Sustainability.....	24
Table 7: Results paired samples t-test of the impact of package design on dependent variables.....	26
Table 8: Results of the two way interaction between Brand familiarity and Social engagement	27
Table 9: Independent samples t-test 2 way interaction Brand familiarity and Engagement	28
Table 10: CPE as a mediator on the effect of Brand familiarity on Likelihood of purchase the plastic bottle	30
Table 11: CPE as a mediator on the effect of Brand familiarity on WTP for the plastic bottle	30
Table 12: CPE as a mediator on the effect of Brand familiarity on Likelihood of purchase the eco bottle	31
Table 13: CPE as a mediator on the effect of Brand familiarity on WTP for the eco-bottle	31
Table 14: Results paired samples t-test for willingness to pay.....	33
Table 15: Willingness to pay frequencies	33

List of figures

Figure 1: Conceptual Framework.....	13
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1. Introduction

1.1. Problem Definition and Relevance

Today's world is marked by contrasting changes and challenges that are complex to deal with, namely climate changes, population growth, ongoing economic development, changing consumption patterns, overproduction, and food and water scarcity (Ridoutt & Pfister, 2009). Freshwater is, nowadays, a scarce resource, and the increase of this tendency is a universal threat to society's sustainable development (Mekonnen & Hoekstra, 2016).

Due to these factors, and mostly due to the fact that the global population is growing, water use is increasing (Gossling, et al., 2010). However, available water resources are in decline, due to the decrease of groundwater and glacial ice non-renewable water resources (Gossling, et al., 2010). To illustrate, approximately 4 billion people (two-thirds of the world population) still lack access to safe water for sanitation, and experience severe water scarcity at least during one month of the year (Mekonnen & Hoekstra, 2016).

Drinking water out of plastic bottles continues to grow in a rapid path (Gleick & Cooley, 2009). Over the last two decades, the bottled water industry became the most rapidly growing industry of drinks in the world. Actually, water sales grew 100 times since 1980 (The Guardian, 2016). In the U.S., bottled water became the number-one beverage category (Beverage Marketing Corporation, 2017).

Bottled water, which was initially considered a niche product, was rapidly transformed into a global industry (Jaffee & Newman, 2012). For instance, the change in people's lifestyles, that eat less meals at home and demand for more convenience when eating out, lead to a rise in the consumption of single-serving containers for beverages, which are made from plastic. Also, the marketing and advertisements for bottled water are about purity, health and safety of the product, convincing consumers that it is the best and healthier choice against tap water. Consequently, the lack of trust about the quality of tap-water contribute to the consumers perceptions that its quality is inferior to bottled water (Jaffee & Newman, 2012; Olson, 1999; Parag & Roberts, 2009; Rodwan, 2011).

This fast growth brought severe consequences for the environment and for the society, coming from all production stages: processing, packaging, transport and disposal. Oil and other raw materials' extraction to create plastic containers, product transportation, and plastic disposal at

sea, are some of the negative impacts created by the plastic bottle industry. The current plastic production, usage and rapid discarding is not sustainable, and it brings serious concerns translated in strong environmental damage (Thompson et al., 2009). Moreover, plastic is set to outweigh all fish in oceans by 2050 (The Guardian, 2017). Consequently, drinking bottled water brings environmental impacts 100 times higher than drinking tap water (Parag & Roberts, 2009).

The present research, thus, looks into the opportunities to cut the use and the consumption of plastics, diminishing its disposal into the environment and create ecological alternatives to re-use grounded materials (Avio et al., 2016). Since water is mostly sold in plastic bottles, it is relevant to analyse what are consumers' perceptions about brands that change from plastic to ecologically-designed bottles. Also, to consider whether the impact of that change is positive in consumers' minds, and what could be a starting point for brands that sell plastic bottles to find more ecological packaging solutions to an industry that does not cease to grow.

1.2. Research Motivation, Objective and Questions

Over the past years, festivals promoters and sponsors have been changing the method they sell beer to its customers to a much more environmentally friendly technique. Instead of serving beer in a common disposable plastic cup, brands like Super Bock and Heineken are adopting a more sustainable selling technique to their customers that uses reusable cups, also called eco-cups. The advantages of eco-cups are innumerable: these cups are more resistant than plastic cups and are also reusable, which helps preserving and reducing the festival impact on the environment. However, and in spite that sustainable alternatives are being put into practice, some other less sustainable activities still account for a large sum of the waste that is being produced in events, like selling water and soft drink in plastic bottles. As aforementioned, plastic brings serious concerns to the environment, translated in strong environmental damage (Thompson et al., 2009). Hence, the author has an interest in developing an empirical study that allows her to understand the impact that changing from plastic to ecologically-designed bottles has on consumer brand valuations. More specifically, the author wishes to understand consumers' ethicality perceptions about the brands that encourage the use of reusable bottles instead of plastic bottles. Also, whether consumers' likelihood of purchase and willingness to pay for the eco-bottles will be higher.

Based on the aforementioned research problem interests the following research questions will be addressed:

RQ1: What is the impact that changing from a plastic bottle to an ecologically-designed bottle has on consumers' brand valuations?

RQ2: Will different brand familiarities have different impacts on consumers' brand valuations?

1.3. Research Structure

The following research is structured in six chapters. The first chapter mentions the problem definition and relevance, and describes the research purpose and questions. The second chapter is a review of the literature about the several themes, authors and concepts that were used as a basis for this study. The third chapter presents the conceptual framework and hypothesis, based on the literature review. The fourth chapter describes the methodology used for the study, and the process of data collection. The fifth chapter provides the results and analysis of the data collected, and in the sixth and last chapter the conclusions and implications of the results are drawn.

2. Academic Literature Review

2.1.Sustainability: an overview into the concept

Sustainability became a topic of concern in the 18th century, with the principle of sustainable yield, when the biggest concern was the preservation of forests and fisheries (Wiersum, 1995). However, it started to be evident that human interventions were causing severe environmental degradation to the planet (Green Peace, 2010). A fact that extended sustainable yield literature and to add a clause to the sustainable development concept to include “the use of limited natural resources and the dangers of environmental degradation that meets the needs of present without compromising the ability of future generations to meet their own needs” (WCED, 1987; Kuhlman, 2010, p. 3438). The originated concept, known as sustainability is also linked with social responsible events, and is sustained under three main pillars - economic, environmental and social, also called the *triple bottom line* (Giddings *et al.*, 2002; heth *et al.*, 2010; WCED, 1987).

2.2. Corporate Social Responsibility

The concept of sustainability and environmental concerns have been gaining a major relevance both for businesses and consumers in the last decades and are now part of everyday life (BCG, 2009; Deloitte, 2015). In fact, the number of companies releasing sustainability reports increased from 20% in 2012 to 80% in 2017 (Ioannou et al., 2017). This is a managerial process that shows a responsibility that companies seek to protect and improve society's prosperity, also known as Corporate Social Responsibility – CSR (Sankar, 2001). This type of transparency is a principle that companies such as HP, Gap, Nike and Patagonia are adopting from their bottom lines up (Sheth et al., 2010).

According to the Commission of the European Communities (2002), a company that has *Corporate Social Responsibility* integrates voluntarily social and environmental issues in its operations (CEC, 2002). Sankar (2001) advances that, by adopting CSR as a managerial responsibility, companies seek to protect and improve society's prosperity.

The concept of CSR, grew hand in hand with the concept of sustainability previously referred. Its importance became even more relevant when organizations and consumers took consciousness about the importance of contributing to the social good while achieving economic sustainable growth (Deloitte, 2015). As a matter of fact, consumers are increasingly more aware of sustainable products and services. To reach consumer awareness, companies are not only focusing on their financial performance, but transforming business models and expanding their social and environmental dimensions. According to Deloitte report (2015), CSR is here to stay and intends to reach an increasing number of businesses and organizations that do not traditionally focus on social and environmental dimensions.

Organizations acting on CSR principles that involve, for instance, pollution control and environmentally-friendly products, are likely to build a stronger reputation over its competitors (Lindgreen et al., 2009; Sankar et al., 2001). Moreover, CSR is likely to increase employee involvement, and position the company and its associated brands as socially responsible (Deloitte, 2015). The benefits provided by CSR initiatives and programs are endless, which encourages companies to act more sustainably and consider the CSR principle as a value proposition that adds value to products (Mohr et al., 2005). Lindgreen et al. (2009) goes one step further and positions CSR as a “stakeholder-oriented” concept, which has an impact not only for the company itself, but also for its stakeholders (Sankar 2001).

2.2.1 Corporate Social Responsibility impact on consumers' purchase intentions

According to a 2009 report from the Boston Consulting Group, consumers are becoming more and more aware about the implications of their actions on both the environment and on themselves (BCG, 2009). In fact, consumers are increasingly considering CSR as a determinant factor on their purchase options, which impacts sales and the business in general (Mohr et al., 2005). Results of a Global Green Consumer Survey distributed by BCG (2008) show that consumers are more likely to choose companies that offer green products. Also, ethical consumerism and consumer expectations for green businesses are growing (BCG, 2009; Singh, 2012). Consequently, when companies promote corporate social responsibility and ethical behaviours, costumers are more likely to become loyal to the brand, assuring future purchases and fostering recommendations (Singh et al., 2012).

2.3. Brand's sustainable behaviours and Consumer Perceived Ethicality

Accordingly, since there is an increase in consumers concern about ethical behaviours when purchasing products, companies started to worry about being socially responsible, sustainable or ethical (Brunk & DeBoer, 2015; Singh, 2012). As this concern increased, consumers started building their own perceptions about the ethicality of brands engaging also known as Consumer Perceived Ethicality (CPE). That is, according to Brunk (2010a), CPE is the consumer ethical perceptions about the ethic of a subject (either a brand, a company, a service or a product). Once a consumer builds a perception about a business, it will impact the evaluation he/she has about that business (Brunk, 2010a). Thus, when companies promote ethical behaviours at a corporate level and invest in CSR, consumers' CPE will be positive, and companies are more willing to succeed (Singh et al., 2012). Ethical behaviours of firms are likely to have a positive influence on consumers' perception of the company, and consequently on product sales (Mascarenhas, 1995; Mohr et al., 2005).

On the other hand, according to Brunk & Bluemelhuber (2010) consumers will have a negative perception about products if a company is involved in a scenario of unethical behaviours. Moreover, if an unethical information is released about a brand, it may be decisive in the formation of CPE of the brand (Brunk & DeBoer, 2015).

2.4. Brand familiarity and purchase intentions for sustainable products

According to the recent marketing literature on brand ethicality (Herédia-Colaço, Coelho do Vale & Villas-Boas, 2017) brand familiarity shows to have an impact on product valuations. For instance, consumers that show high levels of brand familiarity are less willing to pay for products that add ethical attributes (e.g., fair trade) to a package. This is partly explained by the fact when having prior knowledge with brands/products, consumers become more sceptical if that brand decides to change its behaviour, and start acting as a socially responsible one. Minton (2017) adds to the argument by reinforcing that companies that intend to introduce sustainable products or services, should develop prior sustainable and socially responsible attitudes, to firstly help consumers build their positive impressions about the company's ethicality.

2.5. Change of behaviours and the two routes of persuasion

Along with the level of brand familiarity that consumers may have when evaluating products, persuasion has also its importance when the discourse is about behavioural change. According to Petty & Cacioppo (1986a, 1986b) on their elaboration likelihood model theory, people have two routes of persuasion (peripheral and central), depending on the capability to receive a message. On one hand, within the peripheral route the receiver will partially process the content of the message, since there is little motivation or interest to understand it, when the level of engagement with the product is low. On the other hand, the central route shows to be more effective and long-lasting, since the person is more engaged with the product and thus, has more interest in receiving and understanding the message, perceiving it as personally relevant. The behavioural change will then take place according to the person's beliefs (Petty, 1995; Petty & Cacioppo, 1986a). Therefore, it is expected that an individual that is more involved with a topic (e.g. sustainability and social issues) will be more likely to change its behaviour in accordance with a topic he/she is more engaged with (Hoverstad & Howard-Pitney, 1986).

When looking into the topic of persuasion (Petty, 1995; Petty & Cacioppo, 1986a), product packaging has been used as a marketing tool and considered an extrinsic attribute of the product that intends to reach and persuade consumers (Magnier, Schoormans & Mugge, 2016; Underwood & Ozanne, 1998). Recent literature on package design suggests that package design influences product evaluations and perceptions, and has the ability to catch the visual attention of consumers (Becker et al., 2011; Clement et al., 2013; Magnier et al., 2016; Magnier & Schoormans, 2015; Mugge, Massink, Hultink, & van den Berg-Weitzel, 2014). Nowadays, supermarkets display dozens of products of the same category, from different producers but

with similar attributes, making the choices more difficult. Thus, packaging plays an important role on consumers' decision-making process, especially on fast-moving consumer goods – FMCG (Clement, et al., 2013; Magnier & Schoormans, 2015). Interestingly, a large percentage of consumers – approximately ninety percent, purchase a product after examining the front of a package (Clement, 2007). Yet, the time spent on each package is limited, and consumers are likely to be driven by familiar cues in order to make decisions (Clement, 2013; Herédia-Colaço et al., 2017). Familiarity and previous information about a brand (either positive or negative) will impact consumers' purchase decisions (Brunk, 2010a), and will be constructed under the central route of persuasion, when the consumer has the interest and capacity to personally relate with the product (Hoverstad & Howard-Pitney, 1986; Petty, 1995; Petty & Cacioppo, 1986a). Yet, when the level of engagement is low, consumers are most likely to use a more peripheral route to evaluate products and rely on a limited set of salient attributes to make decisions.

2.6. Package Design: ecologically-designed packaging and product evaluations

With today's fast consumption patterns, plastic packaging is present in almost every aspect of everyday life, from food containers, bottled drinks, footwear and clothes to public health applications (Andrady & Neal, 2009). Yet, plastic is an unsustainable material that strongly damages the environment (Jaffee & Newman, 2012). Thus, as consumers are increasingly more concerned about sustainability (BCG, 2009; Magniers & Schoormans, 2015; Singh, 2012), the introduction of sustainable packaging appears to be an alternative to plastic, a concept that the package design literature defines as ecologically-designed packaging (Boks & Stevels, 2007; Esslinger, 2011; Magniers & Schoormans, 2015). Not only it reduces the products' environmental footprint but also should influence the perceived quality of the product (Magnier et al., 2016). According to Magniers and Schoormans (2015), ecologically-designed packaging is said to positively influence consumers' perceived ethicality (CPE) of brands, and their purchase intentions.

Based on this prior literature the present dissertation intends to understand how brand familiarity and consumer engagement with social issues impacts the evaluation of packaged goods. More specifically, if brand familiarity has an impact on brand package valuations – consumer perceived ethicality, willingness to pay, and likelihood of purchase a sustainable product. The author expects that the results found can contribute to the brand familiarity, engagement with social issues, sustainability and consumer brand ethicality literature.

3. Conceptual Framework and Hypothesis

The conceptual framework and hypotheses are presented next based on the concepts of the literature review. An empirical study explores the impact that the brand familiarity (low versus high) has on the dependent variables: consumer perceived ethicality, willingness to pay and likelihood of purchase. A second independent variable is also included in the model which examines the moderating role of level of engagement with social issues (low versus high) on the impact of brand familiarity (low versus high) on brand valuations for both a plastic and ecologically-designed bottles.

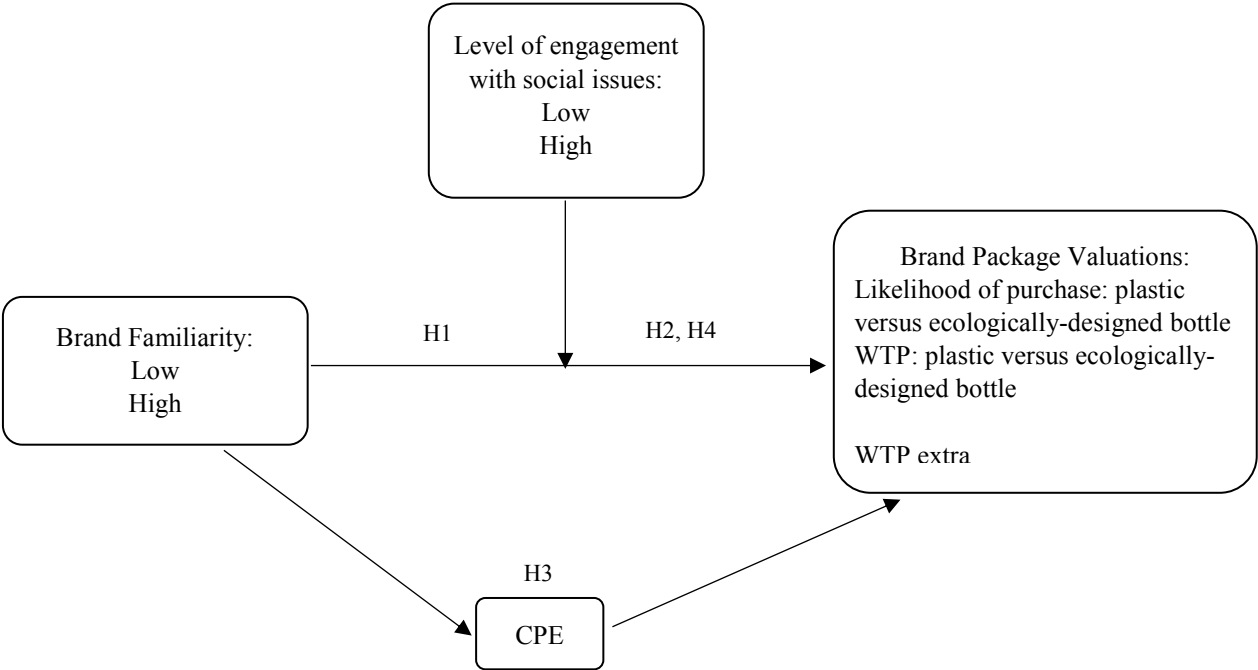


Figure 1: Conceptual Framework

3.1. Hypothesis

Previous research evaluating the impact of both package design and sustainability (Magniers & Schoormans, 2015), suggests that ecologically-designed packaging has an influence on consumer perceived ethicality of a brand. Also, prior research on consumer perceived ethicality (Brunk, 2010a; Brunk & Bluemelhuber, 2010) proposes that ethical behaviours (of brands, products) have a positive impact on consumer perceived ethicality. While consumers' ethical perceptions about brands promoting ethical behaviours seem to be higher with increases in corporate ethical practices such as promoting ecologically-designed product packaging (Singh et al., 2012; Thompson, et al. 2009), we expect that consumers' purchase behaviours will also be improved by a greater likelihood of purchase, and willingness to pay for ecologically-designed bottles. Therefore, the first hypothesis is suggested as follows:

H1: The more (less) sustainable the package design, the higher (lower) the brand valuations (likelihood of purchase, willingness to pay).

Concerning brand familiarity, previous research evaluating the impact of fair trade certifications on product evaluations suggests that for low familiar products/ brands, ethical attributes may be an enhancement package factor that aids decisions (Herédia-Colaço et al., 2017). Some of the appointed reasons are that consumers' decisions are exempted from prior anchors with any specific brand information (positive or negative) that may influence them. Yet, there is a critical level of involvement with ethical issues needed for consumers in order to make sustainable decisions. Since the level of engagement with social issues may be considered a pre-determinant evaluation factor to make fully informed ethical decisions (Hoverstad & Howard-Pitney, 1986), we suggest that if consumers have higher engagement with social practices, most likely their decisions will be based on a more central rather than a peripheral route to make consumption decisions (Petty and Cacioppo, 1986a, 1986b). Therefore, the second hypothesis is suggested as follows:

H2: The impact of brand familiarity on brand valuations will be moderated by the level of engagement with social issues, so that:

H2a: Consumers with higher levels of engagement with social issues, will show higher (lower) brand valuations for low (high) familiar brands using ecologically-designed packaging.

According to recent literature evaluating the influence on consumers' perceptions about the ethicality of brands (Sierra et al., 2015), suggest that consumer perceived ethicality - CPE seems

to mediate the relationship between brand familiarity and product valuations (Herédia-Colaço et al., 2017). Since these prior studies indicate that CPE is an essential variable to evaluate certified products, we predict that CPE will also mediate the effect of brand familiarity on brand package valuations, being an essential variable to evaluate sustainable products. Thus, our third hypothesis is as follows:

H3: Consumer perceived ethicality (CPE) will mediate the relationship between brand familiarity and brand valuations, being this effect especially salient for plastic packaging.

4. Methodology and Data Collection

The following chapter presents the methodology used to conduct the study, specifically the research method, the procedures for data collection, and the sampling and variables used that permitted to answer the research questions.

4.1. Research Method

In order to answer to the research questions, two experimental designs were made: a pilot and a main survey. Both methods were performed online, using Qualtrics' web platform, which allowed to gather a considerable number of responses in short time and in a costless way. The Qualtrics platform provides a link that can easily be shared to participants through social media and e-mail. Participants could thus, assess the survey through their own devices (smartphones, tablets, computers, etc.), having no time pressure or mobility requirements.

4.2. Sampling

A non-probability convenience sampling technique was selected for the present study. In a non-probability technique, each persons' probability to be selected for the study is not specific, contrarily to the probability sampling technique, where all the population members have a known probability of being in the sample. The sampling is convenience, since all the participants were conveniently available to participate in the study. According to Malhotra (2010), this sampling technique permits to obtain results with time and cost efficiency.

4.3. Research Instruments

4.3.1. Pilot Study

A pilot study was conducted through the social media before launching the main study. The main objective was to understand which bottled water brands were familiar and unfamiliar to the respondents, and to understand whether manipulations worked as intended: the sustainable packages as sustainable, and the non-sustainable as non-sustainable. The survey was answered by 63 participants.

The pilot study was composed by three parts: the first part was an introduction, to explain the objective of the study. The second and third parts were to assess which bottled water brands were more or less familiar to respondents, and which type of packaging was perceived as more (versus less) sustainable.

In the second part of the study, respondents were presented with 6 images, each one representing a bottled water brand (Luso, EAU, Evian, Voss, Monchique and Solan de Cabras), and were asked to answer (on a scale from 1 = not at all to 7 = very much) how familiar they were with each brand.

In order to understand which bottled water brands were familiar (not familiar), and which package design was sustainable (not sustainable), it was necessary to perform a t-test on brand familiarity and package sustainability variables.

Regarding brand familiarity, results show that Luso is the most familiar brand amongst participants ($M_{Luso} = 6.87, SD = .381; t(62) = 143.31; p < .001$), and Solan de Cabras and EAU are the less familiar brands among respondents ($M_{Solan\ de\ Cabras} = 2.90, SD = 2.340; t(62) = 9.85; p < .001$, vs. $M_{EAU} = 2.90, SD = 2.115; t(62) = 10.90; p < .001$) (see Table 1).

Table 1: Brand familiarity t-test for the pilot survey

	Brand familiarity		
	Mean	SD	t-test
Luso	6,87	,381	143.31***
EAU	2,90	2,115	10.90***
Evian	5,35	1,705	24.90***
Voss	3,49	2,334	11.88***
Monchique	4,78	2,317	16.37***
Solan de Cabras	2,90	2,340	9.85***

*p < .05; **p < .01; ***p < .001

In the third part, respondents were presented with three bottle images (glass bottle, plastic bottle, and ecologically-designed bottle). For each image, respondents were asked to answer (on a scale from 1 = not at all to 7 = very much) how sustainable they perceived that bottle to be (See Appendix 1 to find the complete pilot study).

Regarding package sustainability measure, results show that the plastic bottle is perceived as the less sustainable bottle for the participants ($M_{plastic\ bottle} = 2.15, SD = 1.39; t(50) = 12.00; p < .001$), and the glass bottle is the most sustainable bottle ($M_{glass\ bottle} = 5.68, SD = 1.52; t(50) = 28.89; p < .001$). Also, the ecologically-designed bottle was considered more sustainable than the plastic bottle ($M_{eco-bottle} = 4.73, SD = 1.67; t(50) = 22.01; p < .001$) (see Table 2).

Table 2: Package sustainability t-test for the pilot survey

	Package sustainability		
	Mean	SD	t-test
Glass bottle	5.68	1.52	28.89***
Plastic bottle	2.15	1.39	12.00***
Ecologically-designed bottle	4.73	1.67	22.01***

*p < .05; **p < .01; ***p < .001

With these results, the author selected Solan de Cabras and Luso to be the high and low familiar brands (respectively) in the main study, and the ecologically-designed bottle was used to represent the sustainable bottle. As for the disposable plastic bottle, this was used to represent the less sustainable and mainstream alternative.

4.3.2. Main Study

The main study was created in two languages, English and Portuguese, in order to be possible to collect more responses without language constraints. The survey was launched at the end of November 2017 through social media and email, and was available until the beginning of December. A total of two hundred and nine (209) answers were collected.

4.4. Design and Procedure

The objective of the study is to explore the differences of a plastic or eco-bottle from a high familiar brand and from a low familiar brand. Also, it aims to understand the impact that brand familiarity (high and low) has on consumer brand valuations for package goods that are either mainstream (plastic bottle) or ecologically-designed.

The study followed a 2 (brand familiarity: low, high) x 2 (level of engagement: low, high) within-between subjects' design. The dependent variables are likelihood of purchase and willingness to pay which were measured on both plastic and ecologically-designed bottles.

The study was composed by three parts. In the first part, respondents were randomly assigned to two of the four scenarios created (see Table 3) using the randomizer flow option from Qualtrics. Participants were presented with a high/ low familiar brand (either Luso, for high familiar brand or Solan de Cabras, for low familiar brand) and were first shown the image of a water plastic bottle and asked to answer to a set of questions concerning their level of familiarity

with the brand. They were also asked about their perception about the bottle ‘sustainability, our brand familiarity and sustainability manipulation checks. After that, respondents were asked to answer to a set of questions concerned with their perceptions about the ethicality of the brand presented - CPE, as well as their likelihood of purchasing and their willingness to pay for that bottle.

In the next scenario respondents were presented with an ecologically-designed bottle for the same brand type, and were asked to answer to the same set of questions. By exposing respondents to both scenarios, allowed us to understand if brand valuations changed depending on both the level of brand familiarity and package design – plastic versus ecologically-designed (see appendix 2 for details).

In the second part, participants were asked to imagine that they were at a music concert. First, they were presented with an ecologically-designed bottle, and asked to rate their level of agreement with a set of sentences that assessed their willingness to engage in social issues. Then, they were asked to answer their willingness to pay for the ecologically-designed bottle, at the music concert. After that, participants were given prices for two different types of bottles: a plastic bottle that cost 2.50€, and an ecologically-designed bottle that cost 3.50€, with the opportunity to make water refills at a cost of 0.50€/refill. Participants were then asked to indicate their likelihood of purchase each bottle, and how much extra they were willing to pay for the ecologically-designed bottle, considering that the plastic bottle price would cost 2.50€.

Finally, in the third part and after being exposed to the different scenarios, participants were again asked to indicate their willingness to purchase the ecologically-designed bottle instead of the plastic bottle, and the average amount they would be willing to pay for the ecologically-designed bottle. By asking these questions, it was possible to assess increases in participants’ preferences for the ecologically-designed bottle versus the plastic bottle. Lastly, participants were exposed to a set of scales to measure demographic variables (gender, age, occupation, nationality and annual income).





4.5. Stimuli Development

In order to study both scenarios, it was necessary to create stimuli that was real enough to make participants seem close as possible with reality. Package design (plastic vs. eco-bottle) was used in this experiment as stimuli, and all participants were presented with the two types of package design.

For each type of brand familiarity (high vs. low), two scenarios were created involving two bottle design types – a plastic bottle and an ecologically-designed bottle. Thus, it was possible to test brand valuations in four conditions: plastic bottle for high familiar brand; plastic bottle for low familiar brand; ecologically-designed bottle for high familiar brand; and ecologically-designed bottle for low familiar brand.

Participants were first presented with an image of the brands’ logo, in order to identify brand familiarity. Then, they were exposed to the plastic bottle of that brand, followed by a set of questions. Right after, they were exposed to the eco-bottle of the same brand, and presented with a short text explaining that the brand had changed the design of its bottles; the new ones, were environmentally friendly, durable and reusable. That allowed to study the effect that the change on the package design has on brands’ valuations (CPE, willingness to pay, likelihood of purchase), before and after different packages are provided (see table 1 for detailed sequence of the stimuli).

Table 3: Manipulation Scenarios

	Low brand familiarity		High brand familiarity	
Scenarios	Solan de Cabras plastic bottle	Solan de Cabras ecologically-designed bottle	Luso plastic bottle	Luso ecologically-designed bottle
Scenario 1				
Scenario 2				

4.6. Variables Description

Independent variables

Brand familiarity – was used both in the pilot and in the main survey. Participants were asked to rate how familiar they were with the brand presented, on a scale from 1 (not at all) to 7 (very much).

Moderators

Engagement with social issues – this variable was measured by asking participants their level of dis/agreement with four statements, on a 7 point likert scale (1 = strongly disagree; 7 = strongly agree).

1. (The purchase of this ecological bottle) reflects the kind of person I am;
2. (...) gives me a sense of satisfaction;
3. (...) is valued by other people
4. (...) helped me express my personal values.

The four statements were adapted from the Engagement in Meaningful Activities Survey, which evaluates the meaningfulness of ones' activities (Goldberg et al., 2002).

Dependent variables

Willingness to pay – willingness to pay was measured by asking participants how much they were willing to pay (from 0 to 5 euros) for a bottle of either Luso or Solan the Cabras. This variable was measured before and after the change in the package design. Also, participants were asked to answer the willingness to pay for the ecologically-designed bottle at the music concert, adapted from Herédia-Colaço et al. (2017).

Likelihood of purchase – likelihood of purchase was measured by asking participants, on a scale from 1 (definitely would not buy) to 7 (definitely would buy), if they would buy Luso/Solan de Cabras. This variable was measured before and after the change in the package design.

Mediator

Consumer Perceived Ethicality (CPE) – Consumer Perceived Ethicality (CPE) was measured in the main survey by asking participants their level of dis/agreement with four statements, on a 7 point likert scale (1 = strongly disagree; 7 = strongly agree).

1. (company/brand) respects moral norms;

2. (...) always adheres to the law;
3. (...) is a socially responsible brand;
4. (...) is a good brand;
5. (...) cares about the environment.

The first four statements and the Likert scale were adapted from Brunk, 2012. A fifth statement related to sustainability was considered useful and added to the scale.

4.6.1. Variables coding

Brand familiarity and engagement with social issues were measured for all participants, therefore, a median split of each variable was performed, in order to divide the sample in participants with low familiarity and high familiarity, and low and high engagers (see Table 4).

Table 4: *Variables recoded*

Variables	Variables re-coded
Brand familiarity	0 = low familiarity; 1 = high familiarity A median split of brand familiarity was performed so that: 0 → low (<6); 1 → high (>6)
Engagement	0 = low engager; 1 = high engager A median split of engagement was performed so that: 0 → low (<5); 1 → high (>5)

5. Results and Analysis

The following chapter presents the results and analysis of the data collected.

5.1. Sample Characterization

This study obtained a total sample of two hundred and nine (209) responses. From these total responses, the majority were female (71.3%), and the ages varied mostly between 18 and 24 years old (48.8%), or 25-34 years old (24.4%). Most of the participants were employed (50.2%) or university students (42.1%), having completed the high school (21.5%), a master degree (28.7%) or a bachelor degree (47.4%) as the highest level of education. Considering the nationality, almost all participants were from Portugal (97.6%), except five participants, who were from Angola, Germany, Mozambique and Spain. The annual income varied between less than €10,000 to more than €150,000. Most of the participants' income was less than €10,000 (21.2%), followed by the participants that have an income varying between €10,000 and €19,999 (20.5%).

5.2. Scale Reliability

Two of the scales used in the questionnaire were adapted from the literature, precisely the CPE scale (Brunk, 2012) and the scale to measure the willingness to engage in social issues (Goldberg et al., 2002). In order to check the reliability and internal consistency of the multi-item scales used in this particular study, the Coefficient (or Cronbach's) alpha was measured (Peterson, 1994). A good internal consistency is expressed with an alpha that is between .70 and .90 (on a scale from 0.1 to 1) (Terwee, et al., 2007).

In this study, the Cronbach alpha was measured for two scales (see Table 5), that showed a good internal consistency, both having alphas between .70 and .90. Therefore, that was no need to delete any item from the two scales.

Table 5: Reliability test for multi-item scales

Scale	Initial number of items	Cronbach's alpha	Number of deleted items	Cronbach's alpha if items deleted	Final number of items
Engagement	4	.879	-	-	4
Consumer perceived ethicality	5	.872	-	-	5

5.3. Outlier Analysis

Before performing further analysis of the data, a multivariate outlier analysis was made in order to detect possible mistakes or responses that could be biasing the results (Seltman, 2015). A multivariate analysis identifies unusual combinations of two or more variables for the same participant. The Mahalanobis distance was computed, generating a new variable for each participant, and the ones with a *p-value* lower than .001 ($p < .001$) were considered outliers. Three potential outliers were recognised, and therefore removed from the initial sample, letting us with a total sample of 206 participants.

5.4. Manipulation Check

Brand familiarity manipulation check was performed, by conducting an independent-samples t-test at a 95% confidence interval, to evaluate whether one of the brands was familiar, and the other was unfamiliar (see Table 6).

The results obtained indicated what was expected. Participants were more familiar with the Luso brand ($M_{Luso} = 6.45, SD = 1.09$) and less familiar with the brand Solan de Cabras ($M_{Solan de Cabras} = 2.68, SD = 2.43, t(204) = 14.83; p < .001$).

Also, a sustainability manipulation check was performed, by conducting a paired samples t-test at a 95% confidence interval, to analyse, simultaneously, the sustainability of the plastic bottle versus the sustainability of the ecologically-designed bottle (see Table 6).

The difference between the sustainability means of both bottles worked as expected. The mean for the eco-bottle was higher, suggesting that respondents perceived the plastic bottle to be less sustainable than the ecologically-designed bottle ($M_{Plastic\ bottle} = 3.36, SD = 1.78$ versus $M_{Ecologically-designed\ bottle} = 5.76, SD = 1.32, t(205) = -16.56; p < .001$).

Table 6: Manipulation check for Brand familiarity and Sustainability

	High familiar brand (Luso)		Low familiar brand (Solan de Cabras)		<i>t-test</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Brand familiarity manipulation check	6.45	1.09	2.68	2.43	14.83***
	Plastic bottle		Ecologically-designed bottle		<i>t-test</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Sustainability manipulation check	3.36	1.78	5.76	1.32	-16.56***

* $p < .05$; ** $p < .01$; *** $p < .001$

5.5. Main Results

In order to test our hypotheses, a 2 (brand familiarity: high vs. low) x 2 (engagement: high vs. low) multivariate analysis (MANOVA) was conducted on the dependent variables WTP and Likelihood of purchase for both plastic and ecologically-designed bottles. Multivariate analysis of variance is used to analyse the impact of one or more categorical independent variables on two or more continuous dependent variables (Seltman, 2015).

5.5.1. The impact of package design

H1: The more (less) sustainable the package design, the higher (lower) the brand valuations.

To test our first hypothesis, a paired samples t-test was performed on both dependent variables, to be possible to compare the means of the dependent variables for the plastic and for the ecologically-designed bottles.

Results show that there is a significant difference in the dependent variables' means (likelihood of purchase and WTP) between plastic to ecologically-designed bottles. The likelihood of purchase for the ecologically-designed bottle was higher than for the plastic bottle (likelihood of purchase: $M_{plastic\ bottle} = 5.04$, vs. $M_{eco\ bottle} = 5.54$; $t(205) = -5.12$; $p < .001$) as well as the willingness to pay (WTP: $M_{plastic\ bottle} = .94$, vs. $M_{eco\ bottle} = 1.60$; $t(205) = -13.21$; $p < .001$), fully supporting hypothesis 1 (see Table 7).

Indeed, our results show higher willingness to pay and likelihood of purchase for the ecologically-designed bottle, meaning that consumers' brand package valuations are higher for ecologically-designed bottle rather than for the plastic bottle.

Table 7: Results paired samples t-test of the impact of package design on the dependent variables

	Package Design				<i>t-test</i>
	Plastic bottle		Ecologically-designed bottle		
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
CPE	4.61	.93	5.60	.94	-0.86***
Likelihood of purchase	5.04	1.62	5.54	1.48	-5.12***
WTP	.94	.44	1.60	.82	-13.21***

* $p < .05$; ** $p < .01$; *** $p < .001$

5.5.2. The moderating effect of level of engagement with social issues

H2: The impact of brand familiarity on brand valuations will be moderated by the level of engagement with social issues.

The second hypothesis proposes that the level of engagement with social issues (low vs. high) moderates the impact of brand familiarity on the dependent variables. The MANOVA results indicate a significant two-way brand familiarity x engagement level interaction effect on likelihood of purchase for the plastic bottle ($F(1, 206) = 3.94, p < .05$) and a willingness to pay for the ecologically-designed bottle ($F(1, 206) = 3.83, p < .05$), suggesting the moderating effect of engagement level (see table 8). Further analysis was conducted in order to test *H1a*. Independent samples t-tests were conducted on likelihood of purchase and *WTP* dependent variables, for both the plastic bottles and ecologically-designed bottles.

Table 8: Results of the two-way interaction between Brand familiarity and Social Engagement

		Social Engagement main effect	Brand familiarity main effect	Social Engagement * Brand familiarity
		<i>F test</i>	<i>F test</i>	<i>F test</i>
Likelihood of purchase	Plastic bottle	2.04	52.09***	3.94*
	Ecologically- designed bottle	8.21**	32.61***	2.12
WTP	Plastic bottle	.02	.01	1.97
	Ecologically- designed bottle	4.84*	1.77	3.83*

* $p < .05$; ** $p < .01$; *** $p < .001$

H2a: Consumers with higher levels of engagement with social issues, will show higher (lower) brand valuations for low (high) familiar brands using ecologically-designed packaging.

Regarding the plastic bottle, t-test results indicate that when participants have higher levels of engagement with social issues, they are more likely to purchase a plastic bottle from a low familiar rather than a high familiar brand (likelihood of purchase: $M_{\text{low familiar, high engagement, plastic}} = 5.34$, vs. $M_{\text{high familiar, high engagement, plastic}} = 4.16$; $t(111) = 2.79$; $p < .001$). Yet, when participants are next exposed to the ecologically-designed bottle, brand valuations become stronger. That is, those participants with higher levels of engagement are also more willing to pay for the eco-bottle of a low familiar rather high brand familiar brand ($M_{\text{low familiar, high engagement, eco bottle}} = 1.69$, vs. $M_{\text{high familiar, low engagement, eco bottle}} = 1.29$; $t(111) = 4.08$; $p < .01$), fully supporting hypothesis 1 (see Table 9 for detailed results).

These results are in line with the recent marketing literature in ethics (Herédia-Colaço et al., 2017), that show that brand familiarity plays an important role during purchase decisions, and suggest that consumers seem to become sceptical if a brand that is not traditionally positioned as an ethical brand suddenly adopts an ethical practice, such as changing from a plastic package to an ecological package. Also, our results indicate that when participants are exposed to the plastic bottle, indeed they show a likelihood of purchase the plastic bottle but their product valuations become stronger as seen in their willingness to pay for the ecologically-designed bottle of that brand.

Table 9: Independent samples t-test 2 way interaction Brand Familiarity and Engagement

		Conditions	Mean	SD	t-test
Likelihood of purchase	Plastic bottle	Low Brand Familiarity	5.34	1.599	2.79***
		High Engagement			
		High Brand Familiarity	4.16	1.447	
		Low Engagement			
Willingness to pay	Ecologically-designed bottle	Low Brand Familiarity	1.69	.82	4.08**
		High engagement			
		High Brand Familiarity	1.29	.70	
		Low engagement			

* $p < .05$; ** $p < .01$; *** $p < .001$

5.5.3. CPE as a mediator

H3: Consumer perceived ethicality (CPE) will mediate the relationship between brand familiarity and brand valuations, being this effect especially salient for plastic packaging.

According to Herédia-Colaço et al. (2017), CPE shows to be a mediator in the evaluation of products with ethical attributes. Following this premise, a simple mediation analysis was performed using brand familiarity as the independent variable, CPE as a mediator, and likelihood of purchase and willingness to pay as the dependent variables.

In order to test hypothesis 3 and to understand if CPE indeed mediated the relationship between brand familiarity and the dependent variables, we performed Hayes (2013, 2015) regression test. According to Hayes (2013, 2015), if results of the confidence intervals contain zero, there is no mediating effect. Contrarily, if the confidence intervals do not contain zero, we can be 95% confident that there is a mediating effect.

Bootstrap analysis ((Hayes, 2013, 2015), Model 4) indicates that CPE indeed mediates the effect of brand familiarity on likelihood of purchase the plastic bottle (see table 10). Both the impact of brand familiarity on CPE ($b = .48$, $SE = .13$, $p < .01$, 95% CI = [0.23, 0.73]) and the impact of CPE on likelihood of purchase the plastic bottle ($b = .86$, $SE = .095$, $p < .001$, 95% CI = [0.67, 1.05]) are significant. Subsequent testing of the conditional indirect effects (based on 5000 bootstraps) indicate that CPE mediates the effect of brand familiarity and likelihood of purchase the plastic bottle (*indirect effect* = .42, $SE = .11$, $p < .05$, 95% CI = [0.22, 0.66]). Yet, tests of the conditional direct effect of brand familiarity and likelihood of purchase the plastic bottle are significant (*direct effect* = 1.05, $SE = .18$, $p < .001$, 95% CI = [0.695, 1.40]), indicating that there is only a partial mediation of CPE on likelihood of purchase the plastic bottle (Hayes, 2013, 2015).

Table 10: CPE as a mediator on the effect of brand familiarity on likelihood of purchase the plastic bottle

Outcome	Indirect effect paths	Indirect effect	Lower CI	Upper CI
1	Brand familiarity → CPE	.48**	.23	.73
2	CPE → Likelihood of purchase plastic bottle	.86***	.67	1.05
3	Brand familiarity → CPE → Likelihood of purchase plastic bottle	.42*	.22	.66
	Direct effect paths	Direct effect	Lower CI	Upper CI
4	Brand familiarity → Likelihood of purchase plastic bottle	1.05***	.70	1.40

* $p < .05$; ** $p < .01$; *** $p < .001$

A similar yet stronger pattern of results was obtained for the WTP variable. That is, a full mediation effect of CPE was observed on the relationship between brand familiarity and the WTP dependent variable: *indirect effect* = .03, $SE = .19$ $p < .05$, 95% CI = [0.00, 0.08]). Tests of the conditional direct effect of brand familiarity and willingness to pay for the plastic bottle became non-significant when CPE was included in the regression (*direct effect* = -.02, $SE = .06$ $p = n.s.$, 95% CI = [-0.15, 0.10]).

Table 11: CPE as a mediator on the effect of brand familiarity on WTP the plastic bottle

Outcome	Indirect effect paths	Indirect effect	Lower CI	Upper CI
1	Brand familiarity → CPE	.48**	.23	.73
2	CPE → WTP plastic bottle	.07	-.00	.13
3	Brand familiarity → CPE → WTP plastic bottle	.03*	.00	.08
	Direct effect paths	Direct effect	Lower CI	Upper CI
4	Brand familiarity → WTP plastic bottle	-.02	-.15	.10

* $p < .05$; ** $p < .01$; *** $p < .001$

To test if the same pattern of results was obtained for the ecologically-designed bottle, our results indicate that CPE indeed mediates the relationship between brand familiarity and the likelihood of purchase of the ecologically-designed bottle (*indirect effect* = .07, $SE = .02$, $p < .05$, 95 % CI = [0.04, 0.12]) (see table 12). But, no mediating effects are observed for the WTP for the ecologically-designed bottle, supporting our predictions that package design plays an important role during consumers' valuations (see table 13). That is, participants' initial perceptions about the ethicality of the brand using plastic packaging seem to interfere with their

likelihood and willingness to pay for that brand. Yet after these initial ethical perceptions, consumers seem to have been compensated by ecological package alternative selected as stimuli, fully supporting H3.

Table 12: CPE as a mediator on the effect of brand familiarity on Likelihood of purchase the eco bottle

Outcome	Indirect effect paths	Indirect effect	Lower CI	Upper CI
1	Brand familiarity → CPE	.11***	.06	.16
2	CPE → Likelihood of purchase eco bottle	.66***	.48	.85
3	Brand familiarity → CPE → Likelihood of purchase eco bottle	.07*	.04	.12
	Direct effect paths	Direct effect	Lower CI	Upper CI
4	Brand familiarity → Likelihood of purchase eco bottle	.17***	.11	.24

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 13: CPE as a mediator on the effect of brand familiarity on WTP for the eco bottle

Outcome	Indirect effect paths	Indirect effect	Lower CI	Upper CI
1	Brand familiarity → CPE	.11***	.06	.17
2	CPE → WTP eco bottle	.08	-.04	.21
3	Brand familiarity → CPE → WTP eco bottle	.01	-.00	.03
	Direct effect paths	Direct effect	Lower CI	Upper CI
4	Brand familiarity → WTP eco bottle	.03	-.01	.08

* $p < .05$; ** $p < .01$; *** $p < .001$

5.5.4. The importance of branded package design on consumers' willingness to pay for products at events.

As initially mentioned in this dissertation, brands like Super Bock and Heineken have been adopting sustainable techniques to sell beer in festivals, using eco-cups instead of plastic cups. Eco-cups are reusable, and help reducing the environmental impact of the festival. But it is also recognized that festivals continue to sell plastic bottles, which still accounts for the waste that is generated on the environment and thus, is an unsustainable practice. Yet, like in any type of event it is also expected that the price people are willing to pay for products (e.g., snacks during event breaks) is higher (Gursoy, Kim & Uysal, 2004; Thrane, 2002) since they are experiencing a special occasion and products that are displayed are also part of the engagement with the event. Therefore, a fourth hypothesis is suggested as follows:

H4: Like in any (music) event consumers are more likely to purchase and willing to pay more for products, especially those that are more innovative like ecologically-designed product packages.

H4a: Consumers behaviour change at events is manifested in their willingness to pay extra for this type of products.

In order to test hypothesis four, paired sample t-tests were performed to compare the likelihood of purchase means for both the ecologically-designed-bottle and for the plastic bottle at the music concert. Results show that, at the music concert, the likelihood of purchase the ecologically-designed bottle is higher than the likelihood of purchase the plastic bottle (Likelihood of purchase: $M_{\text{eco-bottle, music concert}} = 4.91$, vs. $M_{\text{plastic bottle, music concert}} = 3.35$; $t(205) = 7.16$; $p < .001$) (see table 14).

As far as the willingness to pay dependent variable is concerned, the paired samples t-test results clearly show that the willingness to pay for an ecologically-designed-bottle at a music concert is also higher than the eco-bottle presented in the first scenario (Willingness to pay: $M_{\text{eco-bottle, music concert}} = 2.03$, vs. $M_{\text{eco-bottle}} = 1.60$; $t(205) = -16.13$; $p < .001$) (see table 14), fully supporting H4.

Table 14: Results paired samples t-test for willingness to pay

	Plastic bottle		Ecologically-designed bottle		<i>t-test</i>
	Music concert		Music concert		
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Likelihood of purchase	3.35	1.96	4.91	2.01	7.16***
	Ecologically-designed bottle		Ecologically-designed bottle		<i>t-test</i>
	bottle		Music concert		
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Willingness to pay	1.60	.82	2.03	1.04	-16.13***

* $p < .05$; ** $p < .01$; *** $p < .001$

In order to test H4a, participants were asked how much extra they would pay for the ecologically-designed bottle, considering that the plastic bottle would cost 2.50€ at the music concert. Results show that on average, they would pay 1.44€ **extra** to buy the ecologically-designed bottle, instead of the plastic bottle. Furthermore, results indicate that the maximum **extra** participants would pay would be 4.50€, which would make the eco-bottle value 7€ (see Table 15, fully supporting H4a).

Table 15: Willingness to pay frequencies

	Willingness to pay			
	<i>Mean</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
Plastic bottle	.94	0.44	0.10	2.50
Eco-bottle	1.60	0.82	0.20	5.0
Eco-bottle at the concert	2.03	1.04	0.00	5.00
Eco-bottle extra at the concert	1.44	1.09	0.00	4.50

Overall, our results indicate that even at special (entertainment) events, people are more likely to purchase and more willing to pay for the ecologically-designed bottle, fully supporting hypothesis 4. Interestingly, when examining the willingness to pay variable, specifically the minimum and maximum values people would spend on the ecologically-designed bottle, and the average amount, people would pay less than 1€ for the plastic bottle, and 1.60€ for the eco-

bottle ($M_{WTP\ plastic\ bottle} = 0.94$, vs. $M_{WTP\ eco-bottle} = 1.60$, vs. $M_{eco-bottle, music\ concert} = 2.03$). Also, the maximum that participants are willing to pay for the plastic bottle is 2.50€, and for the ecologically-designed bottle would be 5€, which reveals important finding for event producers and brand managers involved in sponsoring events (see table 15).

6. Conclusions and Implications

The present dissertation objective was to understand the impact that changing from a plastic to an eco-bottle has on consumers' brand valuations (RQ1), and if this impact varies when consumers' have different levels of brand familiarity (RQ2).

Answering to the first research question (RQ1), the study suggests that brands that change from mainstream to ecologically-designed bottles have higher chances to increase consumers' valuations. Specifically, consumers are more likely to purchase, and also more willing to pay for ecologically-designed bottles. Consumers' ethicality perceptions about brands using different package designs are also determinant cues during brand valuations and is in line with the marketing literature on ethics (Brunk, 2010a; Brunk & Bluemelhuber, 2010; Herédia-Colaço et al., 2016; Singh et al., 2012).

RQ2 was addressed by following the sustainable behaviour literature that focuses on the ethical conduct adopted by many brands (Herédia-Colaço et al., 2017; Minton, et al., 2017). When it comes to social issues, people may become sceptical with high familiar brands that are not traditionally associated with CSR behaviours. Normally, people already have a set of associations with the brands they are familiar, being more sceptical when brands change behaviours, or adopt ethical behaviours. Our results show that participants are even more likely to purchase, and more willing to pay for ethical products that come from low familiar brands, which indicates that people with knowledge about social issues can demonstrate changes in their attitudes (Petty, 1995).

Interestingly, our mediation results are of extreme importance to the recent ethicality literature (Sierra et al., 2015; Herédia-Colaço et al., 2017). Our findings reveal an indirect effect between brand familiarity and likelihood of purchase through consumer perceived ethicality (CPE). These results indicate that consumers have already formed their ethical perceptions about the product they are likely to buy, and therefore, companies that want to adopt a sustainable practice, such as start selling a sustainable product, need to build prior and consistent sustainable and socially responsible attitudes, to transmit positive ethical behaviours to the consumer (Minton et al., 2017; Herédia-Colaço, 2017).

6.1.Theoretical Implications

This study contributes to the literature on brand familiarity, engagement with social issues, sustainability, and consumer perceived ethicality, by studying the impact of different types of brand familiarity on consumers' brands valuations when the package design changes to a more sustainable package (Avio et al., 2016; Brunk, 2010, 2010a; Herédia-Colaço et al., 2017; Hoverstad & Howard-Pitney, 1986; Kuhlman, 2010; Lindgreen et al., 2009; Minton et al., 2017; Petty, 1995; Petty & Cacioppo, 1986a; Sankar et al., 2001; Schalanger, 2017; Sierra et al., 2015; Thompson et al., 2009).

Overall, the findings follow the literature on brand familiarity (Herédia-Colaço et al., 2017; Minton et al., 2017; Sierra et al., 2015) by considering a high familiar brand that engages a sustainable practice, versus a low familiar brand that engages in the same sustainable practice. Our findings are in line with recent literature examining the effects of brand familiarity on consumers' valuations (Herédia-Colaço et al., 2017), and show that consumers have higher brand valuations for low familiar brands, which is associated with the fact that consumers' had already built their perceptions about the brands they are familiar with.

Our findings also follow the literature on information perception (Hoverstad & Howard-Pitney, 1986; Petty, 1995; Petty & Cacioppo, 1986a), suggesting that individuals that are personally involved with a topic, will more likely change their behaviour in accordance with that same topic. Our findings suggest that when participants have higher levels of engagement with social issues, their brand valuations will also be higher.

Our findings are also a contribution to the CPE and corporate social responsibility literature (Brunk, 2010, 2010a; Brunk & Bluemelhuber, 2010; Herédia-Colaço et al., 2017; Lindgreen et al., 2009; Sankar et al., 2001; Sierra et al., 2015; Singh et al., 2012) since it considers how brands' promoting ethical behaviours, such as changing from an unsustainable package (plastic bottle) to a sustainable package (ecological bottle), will be perceived as ethical. Results show that CPE is of great importance on consumers brand package valuations. Specifically, when they are likely to buy a product, they will have in consideration their ethical perception of the product or the brand offering the product, and will judge the product based on their ethical knowledge. Furthermore, costumers are more likely to purchase and more willing to pay for the ecological packages, which confirms that when companies promote corporate social responsibilities and ethical behaviours, costumers are more likely to become loyal to the brand,

which has a direct and positive influence on consumers' perception of the company, on product sales, and on the success of the company (Brunk, 2010; Mascarenhas, 1995; Singh et al., 2012).

Also, the study expands the literature on sustainability and consequent plastic impact on the environment (Avio et al., 2016; Giddings et al., 2002; Kuhlman, 2010; Parag & Roberts, 2009; Schalanger, 2017; Sheth et al., 2010; Thompson et al., 2009), confirming that plastic bottles are perceived as unsustainable (Kuhlman, 2010; Schalanger, 2017; Thompson et al., 2009), and considering that ecological bottles are perceived as sustainable alternatives to plastic.

6.2. Managerial Implications

This dissertation contributes with several and extreme relevant insights for brands that sell plastic bottles, precisely to find an ecological alternative to package made out of plastic, since consumers show more willingness to pay are more likelihood to purchase an ecologically-designed bottle. With these insights, and by changing from plastic to a sustainable package, brands are meeting consumers' expectations by engaging in ethical and social responsible practices, reducing its environmental footprint, and consequently increasing consumer perceived quality of the product, and product sales (Magnier et al., 2016; Mascarenhas, 1995).

Our findings also show that consumers' initial perceptions about the ethicality of a brand interferes with their likelihood of purchase and willingness to pay for that brand, which is of extreme importance when brands are considering to change a product, or to start adopting sustainable and ethical practices. Brands need to be consistent on the way they communicate and adopt ethical behaviors, since consumers will become skeptical with brands that adopt ethical behaviors but are not traditionally associated with the topic (Herédia-Colaço et al., 2017).

Moreover, our results are important for event producers and brand managers involved in sponsoring events, since our findings show that even at entertainment events, people are more likely to purchase and more willing to pay for an ecologically-designed bottle. Therefore, even brands that are involved in sponsoring events can adopt sustainable practices. Since music festivals have already engaged in changing the plastic cups to eco-cups, this findings can be an opportunity to also change the plastic bottles sold at the same events.

6.3. Limitations and Future Research

While doing this study, some limitations were presented, mostly with respect to time and resources constraints.

First, a non-probability convenience sampling was chosen for this study, which makes the probability of bias occurrence large. Moreover, with this type of sample, it is not possible to represent the population (Hill et al., 1999). Also, although the study was made in two languages with the objective to try to aggregate a wider variety of nationalities, the majority of the respondents were Portuguese (97.6%), limiting the research results. Thus, future research would advantage from exploring a broader variety of nationalities.

Also, for future research, it would be interesting to study four scenarios separately (high familiar brand, plastic bottle; high familiar brand, eco-bottle; low familiar brand, plastic bottle; low familiar brand, eco-bottle), and study the impact of the package design as an independent variable. Also, only water was considered as the package's content, which opens an avenue for research other liquid and solid contents besides water and check whether these alter the results obtained.

Brands' Corporate Social Responsibility can also be explored in this context, since it is a strong value proposition that adds value to products, and promotes consumers' loyalty with the brand (Lindgreen et al., 2009; Mohr et al., 2005; Sankar et al., 2001; Singh et al., 2012). Further research could then analyse the change in the package design of a brand with a strong corporate social responsibility vs. a brand with no corporate social responsibility.

Last, and based on the recent literature about sustainability, plastic damaging effect on the environment, and Corporate Social Responsibility (Avio et al., 2016; Kuhlman, 2010; Lindgreen et al., 2009; Sankar et al., 2001; Schlanger, 2017; Sheth et al., 2010; Singh et al., 2012), further studies could also investigate which alternatives of packaging would more effectively substitute plastic bottles.

Appendices

Appendix 1: Survey Pilot Study

Introduction to the Survey Pilot Study

Thank you for contributing with your time to participate in this study.

This study is part of a Master thesis dissertation being undertaken at Católica Lisbon School of Business & Economics.

This study intends to perceive your personal opinions about water brands, bottles and cups. There are no right or wrong answers. Your responses are confidential.

It will take about 2 minutes to complete.

Second Part

You will be showed some logos from water brands.

On a scale from **1 = not all to 7 = very much**, please indicate how FAMILIAR are you with the following brands:



	1 = Not at all	2	3	4	5	6	7 = Very much
How familiar are you with this brand?	0	0	0	0	0	0	0



	1 = Not at all	2	3	4	5	6	7 = Very much
How familiar are you with this brand?	0	0	0	0	0	0	0



	1 = Not at all	2	3	4	5	6	7 = Very much
How familiar are you with this brand?	0	0	0	0	0	0	0

VOSS®
artesian water from norway

	1 = Not at all	2	3	4	5	6	7 = Very much
How familiar are you with this brand?	0	0	0	0	0	0	0



	1 = Not at all	2	3	4	5	6	7 = Very much
How familiar are you with this brand?	0	0	0	0	0	0	0



	1 = Not at all	2	3	4	5	6	7 = Very much
How familiar are you with this brand?	0	0	0	0	0	0	0

Third Part

Now, you will be shown some images of bottles.

On a scale **from 1 = not all to 7 = very much**, please indicate how SUSTAINABLE do you perceive the following bottles to be:

Glass bottle



	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

Disposable plastic bottle



	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

Tritan plastic* bottle



*Tritan plastic is a durable plastic that has much greater shatter resistance than other plastics and glass.

	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

Now, you will be showed some images of cups.

On a scale from **1 = not all to 7 = very much**, please indicate how SUSTAINABLE do you perceive the following cups to be:

Paper cup



	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

Disposable plastic cup



	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

Tritan plastic* cup



*Tritan plastic is a durable plastic that has much greater shatter resistance than other plastics and glass.

	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

Reusable plastic cup (more resistant than normal plastic)



	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

Thank you for your participation!

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Appendix 2: Main study

Introduction to the Survey

Thank you for contributing with your time to participate in this study. You can choose to answer this survey either in English or in Portuguese.

This study is part of a Master thesis dissertation being undertaken at Católica Lisbon School of Business & Economics.

This study intends to get peoples' opinions concerning products' consumption.

There are no right or wrong answers.

Your responses are confidential.

It will take about 10 minutes to complete.

High familiar brand Stimuli: Plastic & eco bottle (Example: Luso)



Luso is a brand of bottled still water.

Please indicate your **level of familiarity** with the Luso brand on a scale from 1 (= not at all) to 7 (= very much).

	1 = Not at all	2	3	4	5	6	7 = Very much
How familiar are you with Luso?	0	0	0	0	0	0	0

Please take a look at this LUSO **plastic water bottle**.



Please indicate **how sustainable** do you perceive this bottle to be, on a scale from 1 (= not at all) to 7 (= very much).

	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

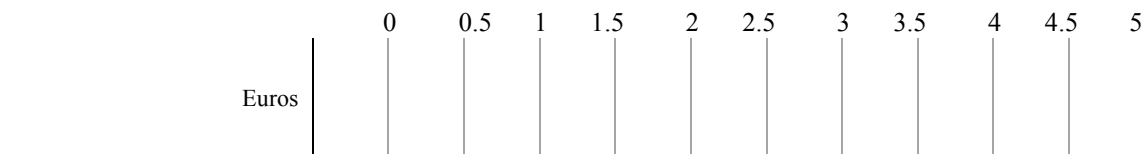
Considering the brand above, please indicate your **level of agreement** (1 = strongly disagree; 7 = strongly agree) with the following statements:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
This brand respects moral norms	0	0	0	0	0	0	0
This brand always adheres to the law	0	0	0	0	0	0	0
This brand is a socially responsible brand	0	0	0	0	0	0	0
This brand is a good brand	0	0	0	0	0	0	0
This brand cares about the environment	0	0	0	0	0	0	0

On a scale from 1 (definitely would not buy) to 7 (definitely would buy), please state **if you would buy** Luso.

	1 = Definitely would NOT buy	2	3	4	5	6	7 = Definitely would buy
I would buy Luso	0	0	0	0	0	0	0

How much are you willing to pay for a medium sized Luso water bottle (50cl)?



Now, imagine that LUSO changes the design of its water bottles, and instead of a regular plastic bottle, it now sells **ecologically-designed bottles**, which are environmentally friendly, durable and reusable.



Please indicate **how sustainable** do you perceive this bottle to be, on a scale from 1 (= not at all) to 7 (= very much).

	1 = Not at all	2	3	4	5	6	7 = Very much
How sustainable do you perceive this bottle to be?	0	0	0	0	0	0	0

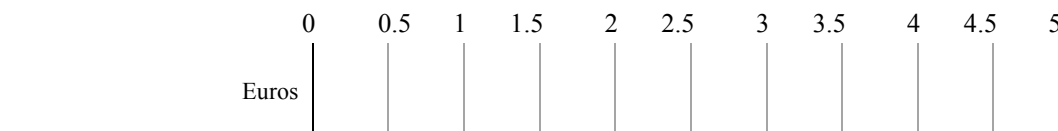
Based on this practice (changing from a plastic bottle to an ecologically-designed bottle), please rate your level of agreement (1 = strongly disagree; 7 = strongly agree) with the following statements:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
This brand respects moral norms	0	0	0	0	0	0	0
This brand always adheres to the law	0	0	0	0	0	0	0
This brand is a socially responsible brand	0	0	0	0	0	0	0
This brand is a good brand	0	0	0	0	0	0	0
This brand cares about the environment	0	0	0	0	0	0	0

On a scale from 1 (definitely would not buy) to 7 (definitely would buy), please state **if you would buy** Luso.

	1 = Definitely would NOT buy	2	3	4	5	6	7 = Definitely would buy
I would buy Luso	0	0	0	0	0	0	0

How much are you willing to pay **for this type** of bottle (50cl)?



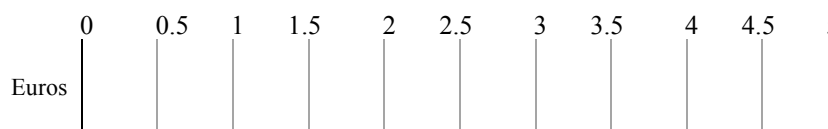
Now, imagine that you are **at a music concert**.



Imagine that you purchase this **ecologically-designed bottle at the music concert**. Please rate your level of agreement (1 = strongly disagree; 7 = strongly agree) with the following statements:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
After purchasing this ecological bottle, I consider this bottle mine.	0	0	0	0	0	0	0
After purchasing this ecological bottle, I intend to re-use it in the future.	0	0	0	0	0	0	0
After purchasing this ecological bottle, I become attached to it.	0	0	0	0	0	0	0
The purchase of this ecological bottle reflects the kind of person I am.	0	0	0	0	0	0	0
The purchase of this ecological bottle gives me a sense of satisfaction.	0	0	0	0	0	0	0
The purchase of this ecological bottle is valued by other people.	0	0	0	0	0	0	0
The purchase of this ecological bottle helped me express my personal values.	0	0	0	0	0	0	0

How much are you willing to pay for **this type of water bottle (50cl)** at the music concert?



Now, assume that a **regular plastic bottle costs 2.50€ at the music event.**

And, the ecologically-designed bottle costs **3.50€**. Yet, if you purchase the ecological bottle, you have the opportunity to refill it at a cost of **0.50€/ refill**.

Considering this information,

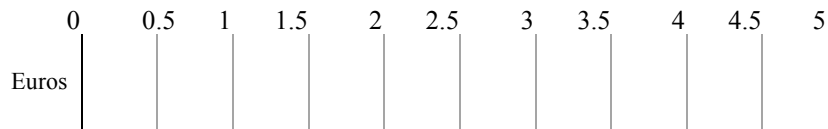
How likely would you buy the ecologically-designed bottle?

	1 Not at all	2	3	4	5	6	7 Very much
I would likely buy the ecologically-designed bottle	0	0	0	0	0	0	0

How likely would you buy the regular plastic bottle?

	1 Not at all	2	3	4	5	6	7 Very much
I would likely buy the regular plastic bottle	0	0	0	0	0	0	0

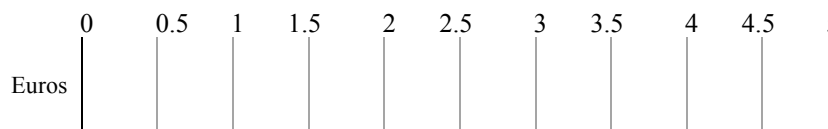
Taking into consideration that the **regular water plastic bottle costs 2.50€** at the music concert, how much **extra** (€) are you willing to pay for an ecologically-designed bottle?



Now, please indicate your willingness to purchase an ecologically-designed water bottle **instead** of a plastic water bottle:

	1 Not at all	2	3	4	5	6	7 Very much
I am willing to purchase an ecologically-designed bottle instead of a plastic bottle	0	0	0	0	0	0	0

On average, how much would you be willing to pay for an ecologically-designed water bottle (in Euros)?



On a scale from 1 (= never) to 5 (= always), please indicate how often you perform the following tasks:

	1 = Never	Sometimes	About half of the time	Most of the time	5 = Always
I take short showers to reduce water usage	0	0	0	0	0
When I go to the supermarket, I bring my own shopping bag	0	0	0	0	0
I recycle used paper	0	0	0	0	0
I use refillable/ reusable products	0	0	0	0	0
I recycle used plastics	0	0	0	0	0
I switch the light off when leaving a room	0	0	0	0	0
I buy bottled water, instead of drinking tap water	0	0	0	0	0
I use public transports to go to work/ university/ school	0	0	0	0	0
I turn off the water when I'm brushing my teeth	0	0	0	0	0

Demographics

Now, please answer some demographics about yourself.

What is your gender?

- Male
- Female

How old are you?

- Under 18
- 18 – 24
- 25 – 34
- 35 – 44
- 45 – 54
- 55 – 64
- 65 or older

What is your current occupation?

- High School Student
- University Student
- Employed
- Unemployed
- Retired

Where do you come from?

(List of countries)

What is your household current annual income (in Euros)?

- Less than €10,000
- €10,000 - €19,999
- €20,000 – €29,999
- €30,000 – €39,999
- €40,000 – €49,999
- €50,000 – €74,999
- €75,000 – €99,999
- €100,000 – €150,000
- More than €150,000
- Don't know

Thank you for participating in the survey!

Please do not discuss the nature of the study with any other participants, as it may bias future results.

Please click on the button below to end the survey.

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