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How is affect towards organic or natural cosmetics build?

The relevance of packaging design and environmental and health concerns

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Católica Porto Business School

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How is affect towards organic or natural cosmetics build? The relevance of packaging design and environmental and health concerns

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Abstract

In recent years there has been an increase in the number of organic/natural cosmetic brands in Portugal. Being a relatively new and expanding market in Portugal, it is very relevant for brands to understand the behaviour of their potential consumers.

This study aims to understand the relationship between consumers' environmental or health concerns and their affect for this category of organic products. Taking that into consideration, we also analysed to what extent can packaging influence perceptions about the healthiness and environmental friendliness of cosmetics. The study was carried out through an online survey, with 192 valid responses.

The results of this analysis led to the conclusion that consumers consider glass packaging to be healthier and more environmentally friendly than plastic packaging. On the other hand, colour (red vs. green) had no influence on consumers' perceptions. Additionally, consumers showed more affect for organic cosmetics which are perceived as healthier and more environmentally friendly. However, while health concerns proved to be a moderating variable in this relationship, environmental concerns had no influence. Finally, both concerns (environmental and health) influence the level of affect a Portuguese consumer has for an organic or natural cosmetic, with health concerns being more influential. These findings provide organic cosmetic brands relevant insights on how to adapt their strategy to serve their target audience and be more competitive more effectively.

Key Words: Health Concerns, environmental concerns, affect, organic or natural cosmetics, perceived healthiness, perceived environmental friendliness, packaging.

Number of words: 9978

Resumo

Nos últimos anos tem havido um aumento no número de marcas de cosméticos orgânicos ou naturais em Portugal. Sendo um mercado relativamente novo e em expansão em Portugal, é do interesse das marcas perceber o comportamento dos seus potenciais consumidores.

Este estudo pretende perceber qual a relação entre as preocupações ambientais ou com a saúde dos consumidores com o afeto que têm a esta categoria de produtos orgânicos. Tendo isso em consideração, analisamos também se a embalagem influencia o facto destes cosméticos serem percebidos como mais ou menos saudáveis e amigos do ambiente. O estudo foi feito através de um inquérito online, tendo 192 respostas válidas.

Os resultados desta análise permitiram concluir que os consumidores consideram as embalagens de vidro mais saudáveis e mais amigas do ambiente do que as embalagens de plástico. Por outro lado, a cor (vermelho vs. verde) demonstrou não ter qualquer influência na perceção dos consumidores. Adicionalmente, os consumidores demonstraram ter mais afeto por cosméticos orgânicos que são percebidos como mais saudáveis e mais amigos do ambiente. No entanto, enquanto a preocupação com a saúde demonstrou ser uma variável moderadora desta relação, a preocupação com o ambiente não teve qualquer influência. Por fim, ambas as preocupações (ambientais e com a saúde) influenciam o nível de afeto que um consumidor português tem por um cosmético orgânico/natural, sendo que a preocupação com a saúde tem uma maior relevância. Os resultados deste estudo permitem às marcas de cosméticos orgânicos compreender como devem adaptar a sua estratégia de modo a melhor responderem às preocupações do seu público-alvo.

Palavras-Chave: Preocupações ambientais, preocupações com a saúde, afeto, cosméticos orgânicos ou naturais, embalagem.

Número de palavras: 9978

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Introduction

The global cosmetics market is expected to grow in the following years (Petruzzi, 2022). In 2021, its' global revenue increased by over eight billion dollars, and according to the Statista Consumer Market Outlook, the market is estimated to surpass 100 billion dollars by 2022 and by 2026 reach annual revenue of around 131 billion U.S dollars. Moreover, the organic cosmetics industry has been growing in the last few years and is estimated to have a positive increase until 2027 (Statista, 2022).

In several European countries, organic or natural cosmetics growth and consumption started around 2015 (Statista, 2021), and the tendency has already arrived in Portugal. In the last years, several new cosmetic brands, such as [Ph]act, MPL Beauty or Organii, claiming to be organic or natural, have emerged in the Portuguese market. In addition, several brands previously established in the cosmetics industry launched new lines of more organic, natural, or simply more sustainable products to be aligned with the new market demand. L'Oreal, for example, launched in 2020 their solid shampoo and in 2018 created a new organic brand, 'La Provençale Bio' for the French supermarket sector. Likewise, Herbal Essences launched in 2017 their Herbal Essences Bio shampoo line and The Body Shop, launched this year (2022), their Wellness line with 100% natural essential oils.

Therefore, it is vital to understand the consumers of this type of product and what drives their behaviour. The rapid growth of the urban population across

the globe and the rise in disposable income can explain the growth of this industry. However, the rise in health consciousness and environmental concern are also crucial factors behind the expanding demand for organic personal care and cosmetic products.

Sustainability has been cited as the primary issue of this century (Aguilera et al., 2007). Companies have placed sustainability as a central issue in the development of their management strategies (Durand et al., 2019) and by increasing environmental efficiency, firms build on their reputation (Thorpe & Prakash-Mani, 2003).

To differentiate themselves from the growing competition, many brands support their marketing campaigns of natural cosmetics on sustainable claims. Some brands, such as Lush or The Body Shop, adopt a “Zero Waste” strategy by fostering the re-use of their packaging. On the other hand, Apivita or Guerlain communicate their environmental concern by supporting and protecting the development of bees. However, is the environmental concern the primary motive for the Portuguese consumers to be attracted to organic cosmetics?

Concern with health and well-being is also growing among consumers. Consumers are more aware of their health and try to live a more balanced life by exercising more, eating better, having more mental health, and balancing their family and social life with work. Consequently, their consumption behaviours are also changing throughout numerous industries.

According to (Observador, 2020) and (Jornal Médico, 2020) economy and health were rated as the two main concerns of the Portuguese consumers in 2020. In 2021, in a study of the consequences of COVID-19, Diário de Notícias referred to health as the third main concern of the Portuguese population. However, according to a study by Medis (2021), 46% of Portuguese consumers consider that they do not have a pro-health attitude, meaning that they do not do enough to take care for their health. Attending these figures, one can ask: Is the demand for

organic cosmetics related to a health consciousness? Therefore, it is essential to understand what influences the affect of Portuguese consumers towards organic cosmetics, to tailor the marketing campaigns and marketing mix strategies.

Packaging is considered by some authors as an integral part of the "product" component of the 4 P's (product, price, place and promotion) of marketing and it is often used to convey characteristics of the product itself and generate feelings, thoughts, and memories about the brand (Agariya et al., 2012). Consumers are giving more value to brands that are aligned with their values and priorities ((Martins, 2023), and sustainability is nowadays a very important factor for most consumers in their purchasing decision (The State of Fashion 2020) In fact, according to an inquiry from Smurfit Kappa (2021) almost half of the consumers consider that the use of sustainable packaging materials plays a key role when purchasing fashion items online and many customers are willing to pay more for sustainable products with high-quality, environmentally friendly packaging (Martins, 2023)

When assessing the brand image, corporate social responsibility can also be a dimension of packaging. As consumers value more social and environmentally friendly brands, they expect more ethical product and packaging alternatives. With the growth of new brands and competition in the organic cosmetics industry, it becomes vital to choose how a brand will differentiate and position itself in the market. Many organic/natural cosmetics brands use a branding alluding to nature, sustainability, or purity, (including the choice of the packaging material and use of colours accordingly), while others use a different approach (see examples in Appendix 1).

Therefore, it is particularly relevant to understand if consumers value a packaging design that alludes to sustainability. Does an organic cosmetic with non-sustainable packaging induce a lower level of affect than one with sustainable packaging?

This study aims to understand how packaging elements influence the Portuguese affect towards organic or natural cosmetics. Moreover, this study aims to understand if consumers health and sustainability concerns influence their judgement of organic cosmetic packaging. The aim is that this research allows companies and marketers to better understand consumers and provides guidelines on how organic cosmetic brands should adapt their packaging to their target audience and the message they want to convey.

Chapter 1

Literature Review

1.1 Cosmetics and cosmetics consumption

According to the Cambridge Dictionary (2021), cosmetics are “substances that you put on your face or body intended to improve your appearance”. In Portugal, the Infarmed uses a similar definition, namely “any substance or mixture intended to be placed in contact with the external parts of the human body or with the teeth and the mucous membranes of the oral cavity with a view exclusively or mainly to cleaning them, perfuming them, changing their appearance, protecting them, keeping them in good condition or correcting body odours”.

Nowadays, a few giant multinational players such as L’Oréal S.A., Johnson & Johnson, Unilever, Estée Lauder, and Procter & Gamble Co (P&G) control this industry and with such a competitive market, companies must be aware of key trends of the market and changes in consumer behaviours to position themselves the right way. According to Hennigan (2020) consumers consider more the ingredients’ safety, cleanliness, and shelf life. Female consumers are getting more conscious of the ingredients in cosmetics and seek safe products, which triggers a natural movement in this industry (Hennigan, 2020).

1.1.1 Organic or natural cosmetics

The seeking of natural ingredients and the concern for the environment has grown the natural and organic market in the last years. According to Liobikienė & Bernatoniienė, (2017) consumers are already having considerations on environment and ethics when purchasing cosmetics, although the primary driver is still the personal preferences. Still, as consumers are becoming more environmentally conscious, they are influencing some brands to become greener which also pushes other brands through media and marketing strategies to follow the same example (Csorba & Boglea, 2011).

The younger population growing focus on physical appearance and aesthetics is expected to boost the demand for the organic personal care and cosmetic products too. The easy availability and growth of supply of organic or natural cosmetics also exponentially drives the market growth globally (Dinesh & Roshan, 2022).

However, there is still some confusion regarding the difference between cosmetics with a sustainable and more natural concern. Luisa Baims explained to *Observador*, (2017) that “the natural (cosmetic) does not contain parabens, artificial fragrances or colourings, petroleum derivatives, silicones, and other ingredients [...] but may have a small percentage of synthetic ingredients in its composition. Organic cosmetics, on the other hand, in addition to having a natural formula, are completely free of genetically modified and synthetic ingredients”. Overall, an organic cosmetic is a regulated term (across the US, EU, UK and Australia) associated with a certification and a natural cosmetic is less regulated.

Some brands make it quite difficult for consumers to understand how pure or environmentally friendly their cosmetics are. While Weleda or Caudalie have some 100% organic products, brands such as The Body Shop, Origins or Aveeno may deceive the consumer with their marketing strategy.

As it is difficult for consumers to differ between organic or natural cosmetics, and as there is not yet a regulation in Portugal that clearly separates them, this study will be focusing on both, and will not make a distinction between the concepts.

1.1.2 Organic/natural cosmetics in Portugal

The organic/natural cosmetics market has been growing in the last years in Portugal, and several brands have emerged to follow this trend. MPL beauty or Unii are examples of national brands that were created 3 and 4 years ago, to try to answer to a lack of supply in the market. According to Público (2019) the growing demand of these cosmetics in Portugal is driven by greater consumer concern for animals and by the use toxic chemicals in conventional cosmetics.

The increased number of organic/natural cosmetic players in the Portuguese market in the last years, forces each one to try to follow a differential strategy. Looking at different brands worldwide and in Portugal, it is visible that they use different marketing strategies. Although some are eco-friendly (being organic/natural), other highlight more their natural and pure components on social media, and focus on health and wellness (Ex. 8950*¹, Ursamajor Skincare, Ringana*; see Appendix 2, A)) and others emphasize their care for the environment as their main focus (Ex: Phact*, Miritstica*, Ignae*; see Appendix 2, C)) and some adopt a more fun a colourful strategy, also focusing on wellbeing but without such strong relationship with health or environment (Ex. Beauty Bible*, Freshly Cosmetics*, Rosen skincare, see Appendix 2, B)). But what about their packaging? Is it transmitting the same message?

¹ *Brands sold in Portugal

1.2 Packaging

According to Giovannetti (1995) packaging is the container that is in direct contact with the product itself, which holds, protects, preserves, and identifies the product as well as facilitating handling and commercialisation.

First impressions and physical appearances matter when choosing products, as people normally tend to acquire objects that have appealing appearances (Adofo, 2014). Packaging design is a very powerful tool to persuade consumers to purchase a certain product given its role in the identification and differentiation of the brand, and because consumers evaluate the products even when viewing them on shelves, close to its competitors. (Karimi et al., 2013)

From the consumer perspective, packaging plays an essential role, as it is the first thing that consumers see before making their purchase decision (Giovannetti, 1995), and provides information so that they can immediately identify which product is inside (Agariya et al., 2012). In fact, packaging is often called the “silent salesman”, as the role of a sales assistant of informing and advertising a product’s qualities and benefits has been transferred to it (Sonsino, 1990; Giovannetti, 1995).

Creusen & Schoormans, (2005) and Agariya et al., (2012) describe different packaging design roles. For Agariya et al., (2012) a good packaging design aims to fulfil three different goals, whereas Creusen & Schoormans, (2005) suggest that packaging performs six purposes. Both agree that the first role of packaging design is to draw the attention of the buyer and make the product stand out among the other products, and Agariya et al., (2012) add that marketeers should use shape, colour, and other features of the packaging accordingly.

According to Agariya et al., 2012 communication with the customer is the second purpose of the packaging, which may be direct (description of the product and its benefits) on indirect (use of shape, colour and design to convey

inherent attributes, such as elegance, masculinity, femininity, purity or value). To communicate elegance, cosmetic products often use pastel colours, black or gold, and pharmaceutical products are mostly in light colours or white background to denote cleanliness, purity, and efficacy (Agariya et al., 2012)

Finally, Agariya et al., (2012) defend that a good packaging design should convince the consumer that the product satisfies his/her needs and wants and, thereby, induce buying behaviour and create the desire to repeat the purchase.

Numerous package cues, which can be categorized as visual stimuli, informative elements, and functionality qualities, can serve as the basis for judgments about perceived quality, **healthiness**, naturalness, **sustainability**, and superiority (Gómez et al., 2015). The visual components include artwork, **colour**, size, and shape of the packaging in addition to information about the **material** and technology utilized in the packs (Steenis et al., 2017).

1.2.1 Packaging material and consumers' perception

Depending on the product category, consumers may value and prefer various packaging attributes differently. One of the attributes that consumers take into consideration when evaluating a packaging is the material. In fact, in a study on consumers' perceptions of food packaging (Venter et al., 2011a), the material was one of the packaging dimensions most often mentioned, namely associated with the effectiveness and functionality of the products. Participants stated that the material should be strong, and allow the product to be fresh, and preferably recycled or eco-friendly.

One of the most used packaging materials for consumer goods is plastic. In Europe, 40% of the total demand for virgin plastic can be attributed to the packaging industry (Plastics Europe, 2020). With the global growing concern on environmental sustainability, consumers play a role in mitigating this crisis and with the increased access to the information available for consumers, packaging

has changed radically (Sandu, 2014) and now sustainability plays a bigger role, than it did years ago.

According to several studies, the environmental aspects of packaging design play a significant role in consumers' choice behaviours (Rokka & Uusitalo, 2008) and purchase intentions (Magnier & Schoormans, 2015; Pancer et al., 2017; Magnier et al., 2016). Many consumers are willing to pay more for sustainable products with high-quality, environmentally friendly packaging (Business News Daily, 2022).

Moreover, packaging material may also have a significant impact on consumer's perception of the product itself (Spence, 2016; Spence, 2012; Spence & Velasco, 2018). In a study by Venter et al., (2011b), some of the participants associated carton boxes and plastic pouches with lower quality food products in comparison with a glass packaging. Additionally, Smurfit Kappa (2021) reveals that 43% of Europeans consider recycled packaging as a major indicator for the sustainability of a brand. In fact, the report of the global web index also states that 21% of the US and UK respondents consider sustainable and recyclable packaging important when buying cosmetics products. Furthermore, Swedish consumers for example, believe that paper-based packaging materials have the least negative environmental impact, followed by glass, while plastic and metal have the greatest negative environmental impact (Lindh et al., 2016).

These evaluations put pressure on more and more manufacturers that are asked to weigh the environmental impact (Banar & Cokaygil, 2008) of their packaging decisions. There are several cosmetic brands that are adapting their packaging for them to be more ecological weather by switching for more ecological materials, by changing them to be recyclable or by investing on re-usable/ rechargeable packaging.

An example is Chanel, that is switching their materials to a moulded pulp made from bamboo for their new Chanel nr^o 1. In terms of re-usable packages,

according to (Gallon, 2019), there are different ways to implement this model. Some brands do it through a dual inventory in-store, with a host packaging and a refill cartridge or else. This concept has been developed by many brands, including Fenty Beauty, Charlotte Tilbury, and L'Occitane. Kim Kardashian also joined this movement, designing her new Skincare line, SKKN, promising to be more sustainable with and a refillable packaging. However, Kardashian is now being accused of greenwashing because the packaging is not as environmentally friendly as it appears (Pizza, 2022).

In fact, it is not easy to evaluate if a packaging is indeed sustainable and consumers as well as companies are confused about what constitutes “sustainable packaging” (Jerzyk, 2016). For instance, in a study (Young, 2010) on the soft drink market, glass packaging was incorrectly thought to be more environmentally beneficial than plastic packaging. This appeared to be driven by shoppers’ greater certainty that plastic can be recycled. In fact, subsequent research revealed that more than 90% of Americans perceive that plastic can be recycled, as opposed to only 74% who consider glass to be recyclable.

For this reason, this study is not looking to assess whether a packaging is in fact more sustainable than another, but only the reaction of the consumer according to their perception of a sustainable packaging. Thus, considering the findings of prior studies, the following hypothesis was formulated:

H1: The packaging material will influence the perceived environmental friendliness of an organic / natural cosmetic in such way that packaging in glass will be perceived as more environmentally friendly than packaging in plastic.

The pollution caused by plastic is not only a threat to the environment (Bergmann et al., 2019; Jambeck et al., 2015) but also for human health (Wright & Kelly, 2017). In 2016 the European Food Safety Authority (EFSA) gave a warning

of increased risks to human health from micro-plastic pollution in commercial fish (Trowsdale et al., 2017). Consumers do not want to buy plastic packages, according to (Bang et al., 2012) because of safety and health concerns about the migration of toxic components into food products.

Moreover, the packaging material can also have an impact on consumers when assessing the healthiness of a product. Findings on a study on the packaging influence on children's (Elliott, 2018) and elderly's (over the age of 60) (Świda et al., 2018) perception on the healthiness of milk, suggest that milk on a glass or glass bottles was ranked healthier as milk on a plastic bottle. Similarly, in the case of juices, most participants thought that juices in glass bottles were with higher quality, safest, **healthiest**, and that they were also the most commonly bought. Moreover, Aday & Yener, (2014) found that 75.9% of 324 young Turkish consumers preferred glass packages, with 69.75% choosing it for its healthy nature, and Fernqvist et al., (2015) also discovered that some respondents considered plastic to be "unhealthy."

Thus, the following hypothesis was conducted:

H2: The packaging material will influence the perceived healthiness of an organic / natural cosmetic in such way that packaging in glass will be perceived as healthier than packaging in plastic.

1.2.2 Packaging colour and consumers' perception

"In one way or another everyone is interested in colour" (Colour Observed, 1980). According to several studies, vision is a humans' most powerful sense, and from all visual cues, colour is the most important one when analysing packaging (Lynn, 1981), as it is responsible for 62-90% of the consumers' purchase decisions

(Singh, 2006; Seher et al., 2012). Colour plays a vital role in catching the consumer's attention (Neman, 1988; Marshall et al., 2006; Woggon, 1973), which is known for many as the "First Moment of Truth" (Louw and Kimber, 2011). Moreover, the packaging colour of most FMCGs sets expectations about the product or its properties (e.g., Kauppinen-Räsänen, 2014; Schifferstein, 2006; Spence, 2016; Garber et al., 2003; Lynn, 1981; Velasco et al., 2015).

Another interesting feature about colour is that its meaning may vary in different cultures and product categories (Wan et al., 2014) and it may be associated with a specific brand (ex. purple Cadbury's Dairy Milk). The colour red for example may be used for sweetness in yoghurt drinks, (Tijssen et al., 2017), with spiciness (Tu et al., 2016) or link to the Coca-Cola brand in the beverage's aisle (Garber et al., 2000). It is therefore difficult to say how the consumer is interpreting a colour and if is interpreting it the way it was intended by the brand. For this purpose, other elements of packaging and the context where it is seen may help to constrain the meaning of a particular set of colours (Garber et al., 2008; Madden et al., 2000).

Among the several studies already conducted to analyse the influence of colour on consumer behaviour, one variable that was also studied (by (Rozin, 2015; Rozin et al., 2004) was the naturalness perceived by the consumers.

The concept of naturalness can be easily linked with green, eco-friendly, and organic. This connection has been used by marketing and communication strategies using emotional dimensions for example with nature images (Hartmann et al., 2005) or information on the environmental impact of such products. Other reflections state that naturalness can be expressed through natural ingredients (Evans et al., 2010) or through the colour green, which is usually used to represent nature and evoke the sense of environment-friendliness (Parguel et al., 2015). On the other hand, bright colours such as red are usually

negatively associated with environment-friendliness (Luchs MG et al., 2010). Considering the prior studies, the following hypothesis was formulated:

H3: The packaging colour will influence the perceived environmental friendliness of an organic / natural cosmetic in such way that green packaging will be perceived as more environmentally friendly than red packaging.

Several studies were also conducted to analyse the impact of colour on the naturalness (and healthiness) of products and on consumer behaviour. Deliza & Macfie, (1996) for example, concluded in their PhD research, that a juice on an orange packaging was considered by the participants to be sweeter than a juice on a white packaging, although both juices were the same. Moreover, the juice on the white packaging was considered to be more pure, fresh, refreshing and natural.

Another study (Lu, 2015) developed on 40 North American students pretended to evaluate the apparent healthiness and sweetness of four different foods (breakfast cereal, ice-cream, iced tea, and yoghurt) presented in blue, green, and red packaging. The findings demonstrated that students considered the products in the red packaging to be sweeter (and less healthy) than the same products in a green or blue packaging.

For this reason, and following the examples above, (where green was seen to be more natural, pure and healthy, and red less healthy) the following two hypothesis was conducted:

H4: The packaging colour will influence the perceived healthiness of an organic / natural cosmetic in such way that green packaging will be perceived as healthier than red packaging.

1.3 Perceived environmental friendliness and environmental concern

In the past years the world has been understanding the need for a sustainable way of life. According to the United Nations Environment Programme (2007), the impacts on the environment are already visible and the climate is changing. This issue has been a topic of concern for several activists and media, and several treaties and reports have already been made (eg. Paris Agreement, 2016), to discuss and implement social, economic, and environmentally sustainable practises. Environmental consciousness has also been a hot topic on social media, and several well-known public figures, such as Leonardo Di Caprio, have been speaking up about climate and the need for a change in consumption habits. As the topic continues to be discussed and the planet continues to face natural disasters the societies' environmental concern is growing.

Environmental concern can be defined as a 'strong attitude for protecting the environment' (Crosby et al., 1981) or as 'the degree to which people are aware of problems regarding the environment and support efforts to solve them or indicate the willingness to contribute personally to their solution' (Dunlap & Jones, 2002, p.482). Several studies suggest that environmental concern and consciousness significantly impact consumer's attitude towards the eco-friendly products and services (Aman et al., 2012; Hartmann & Apaolaza-Ibáñez, 2012; Peattie, 2001; Schlegelmilch et al., 1996), which further influences their purchase intention (Mostafa, 2007). Consequently, environmentally conscious consumers are willing to change their buying behaviours for benefit of the environment (Chase, 1991).

Several authors (Brugarolas Mollá-Bauzá et al., 2005; Makatouni, 2002; Smith & Paladino, 2010) identified environmental concern as one of the main reasons that lead to a positive consumers' attitude towards organic food, and Mostafa,

(2009) adds its' crucial role in influencing the consumers' willingness to buy (other) green products.

Thus, previous studies indicate that green consumption is influenced by consumer's environmental consciousness, (M. J. Polonsky et al., 1995), and that the latter is also a major determinant of consumer attitudes and behaviour towards organic products (Paladino, 2005). In fact, Smith & Paladino, (2010) demonstrated a favourable correlation between organic attitudes and environmental concern. Therefore, we propose the following hypothesis:

H5. Environmental concerns will have a positive impact on consumers' affect towards organic/natural cosmetics.

Moreover, the perceived environmental friendliness of a packaging will have an influence on consumers' attitude towards the product. In Norway, for example, (Koenig-Lewis et al., 2014) discovered evidence of an emotional response to the alleged environmental advantages of a partially plant-based water bottle. Unsurprisingly, the perceived benefits of the packaging had a major impact on the happy emotions it elicited, and participants' uncertainty regarding the packaging's ecological benefits caused them to feel negatively. In another study in New Zealand, glass and jars were the most liked packages among consumers over the age of 60 (Duizer et al., 2009).

Thus, based on the prior studies the following hypothesis was conducted:

H6. The level of perceived environmental friendliness will have a positive impact on consumers' affect towards organic/natural cosmetics.

It can also be hypothesised that the level of environmental concern will moderate this relationship between the level of affect towards perceived

environmentally friendly products. As previously mentioned, consumer attitudes toward environmentally friendly goods are greatly influenced by their environmental concerns (Aman et al., 2012; Hartmann and Apaolaza, 2012; Peattie, 2001; Schlegelmilch et al., 1996). Thus, the following hypothesis was formulated:

H7. The impact of the perceived environmental friendliness on consumers' affect towards organic/natural cosmetics will be positively moderated by the Portuguese's environmental concerns.

1.4 Health concern and perceived healthiness

According to Schifferstein & Oude Ophuis, (1998) health consciousness refers to "the degree of readiness to undertake health actions." Consumers with such concerns believe that their actions may affect their health and, consequently, adapt their lifestyle and consumption patterns accordingly (Schifferstein and Oude Ophuis, 1998; Becker et al., 1977, Newsom et al., 2005). The authors also concluded that organic food buyers have a significant level of health, but also of environmental consciousness. Nonetheless, according to several studies the main reason for organic food buying was found to be health (Worner and MeierPloeger, 1999; Chrysohoidis & Krystallis, 2005), although some factors such as age may affect the results. Wandel & Bugge, (1997) also defend that elder consumer prefer ecologically produced food mainly due to their concern for their own health rather than for environmental aspects. In fact, a study from Medis (2021) demonstrates that age is a factor that leads to health consciousness and that consumers over 65 years are the ones who tend to take more actions for the benefit of their health. The use of organic cosmetics is expected to grow among

the aging population, as they have traditionally more skin problems, which presumably will lead to opportunities for the players of this industry (The Allied Market Research Report, 2022). In Portugal specifically, the elder population will increase in the following years (INE, 2020) which may be an important factor for this industry to grow in the future.

In terms of the level and frequency of buying, Schifferstein and Oude Ophuis (1998) stated that for consumers with an incidental buying behaviour, health is the most important motive for purchasing organic food, whereas for heavy buyers, both health and environmental issues are equally important. The authors further argued that both health and environmental consciousness often coincide, and that it is, therefore, difficult to identify which is the more dominant motive for organic food buying. However, according to Magnusson et al., (2003) and Ghazali et al., (2017) research, consumers' attitudes about organic food were most strongly influenced by their concerns for their own and their families' health. Moreover, Photcharoen et al., (2020) discovered that health concerns had a considerable favourable impact on Thai consumers' attitudes toward organic coconut cosmetics. Thus, the following hypothesis was proposed:

H8. Health concerns will be positively related to consumers' affect towards organic/natural cosmetics.

In addition, consumers tend to have a greater affect towards organic products, as they perceive them as healthier. According to the Allied Market Research (2022), consumers tend to prefer organic personal care products due to the rising awareness about the ill-effects of chemical-based and synthetic products on the skin. Furthermore, Han & Chung, (2014) discovered that attitudes toward buying organic cotton clothing are significantly influenced by the perceived health benefits. Having this in mind, the following hypothesis was conducted:

H9. The level of perceived healthiness will influence positively consumers' affect towards organic/natural cosmetics.

Finally, it can also be hypothesised that the level of health concern will moderate the relationship between the level of affect towards perceived healthy products. Chrysohoidis & Krystallis, (2005) for example, found that health concern had an impact on the influence that organic claims had on purchase intention, as well as perceptions of the healthiness of foods. Hence, based on the above, this study hypothesizes that:

H10. The impact of the perceived healthiness of an organic/natural cosmetic on consumers' affect towards it will be positively moderated by their health concerns.

1.5 Conceptual Model

In Europe, sales of natural and organic cosmetics have grown at an average of +7% per year over the past five years and are expected to reach 5 billion euros by 2023 (Premium Beauty News, 2019). Indeed, organic cosmetic brands are known to be better for the environment and for health (The Sunday Guardian, 2022) and environmental and health concerns impact consumers' purchasing decision (Mostafa, 2007; Worner & Meier-Ploeger, 1999; Chrysohoidis & Krystallis, 2005). Thus, through this study we want to understand if these two concerns influence Portuguese consumers' affect towards organic cosmetics, and which of the two is more relevant.

Furthermore, the literature shows us that packaging is important in catching consumers' attention (Agariya et al., 2012), and that it can also have an influence on the evaluation of how sustainable (Lindh et al., 2016) and healthy (Huang and Lu, 2015) a product is. We know that colour is a relevant dimension of packaging and that it can influence how consumers evaluate how healthy and sustainable a product is (Parguel, 2015; Deliza, 1996). In this study we intend to analyse this relationship. Besides colour, material is also an attribute that consumers pay attention to when assessing the degree of sustainability (Venter et al., 2011b) and healthiness (Aday and Yener, 2014) of a product. Hence, we want to understand how material (glass vs. plastic) influences consumers' responses.

Thus, we assume that environmentally conscious consumers will not have the same level of affect for organic cosmetics in a packaging perceived as less sustainable and the same will happen for health-conscious consumers when exposed to a packaging perceived as unhealthy.

In sum, the proposed study hypotheses are the following:

H1: The packaging material will influence the perceived environmental friendliness of an organic / natural cosmetic in such way that packaging in glass will be perceived as more environmentally friendly than packaging in plastic.

H2: The packaging material will influence the perceived healthiness of an organic / natural cosmetic in such way that packaging in glass will be perceived as healthier than packaging in plastic.

H3: The packaging colour will influence the perceived environmental friendliness of an organic / natural cosmetic in such way that green packaging will be perceived as more environmentally friendly than red packaging.

H4: The packaging colour will influence the perceived healthiness of an organic / natural cosmetic in such way that green packaging will be perceived as healthier than red packaging.

H5: Environmental concerns will have a positive impact on consumers' affect towards organic or natural cosmetics.

H6: The level of perceived environmental friendliness will have a positive impact on consumers' affect towards organic or natural cosmetics.

H7: The impact of the perceived environmental friendliness on consumers' affect towards organic or natural cosmetics will be positively moderated by the Portuguese's environmental concerns.

H8: Health concerns will be positively related to consumers' affect towards organic or natural cosmetics.

H9: The level of perceived healthiness will influence positively consumers' affect towards organic or natural cosmetics.

H10: The impact of the perceived healthiness of an organic or natural cosmetic on consumers' affect towards it will be positively moderated by their health concerns.

Figure 1: Study hypotheses

Chapter 2

Methodology

2.1 Research Design and Method

To investigate the effects of the material and colour on consumers' perceptions of healthiness and environmental friendliness as well as their affect towards organic cosmetics, it was critical to create a conceptual model proposing relationships between the variables and to formulate hypotheses based on the literature review. To examine these hypotheses, we used a quantitative research approach and to develop an experimental study. The research study design, however, was quasi-experimental because it was not possible to guarantee a high level of control over the experiment (Thompson & Panacek, n.d.). The variables were manipulated through a quasi-experimental research design, so that their effects on the dependent variables could be evaluated. The data collection was made through an online questionnaire using Qualtrics, as it facilitates access to the participants and increases response rate, while ensuring credibility and participant confidentiality (Carbonaro & Bainbridge, 2000; Lefever et al., 2007). To gather as many participants as possible and ensure representativeness, the questionnaire was sent to a list of respondents from the researchers' contacts. A snowball sampling technique was used to recruit more participants to take part in the study, by asking people to mention preferably people who consumed organic/natural cosmetics.

2.2 Stimulus Selection

The stimuli presented in this study were specifically designed for this research with Adobe Photoshop CC. The packaging was manipulated according to the material used (glass vs. plastic) and colour (red vs. green) to test the conceptual model. Each respondent was only exposed to one set of stimuli, which was composed of two packages of two categories of cosmetics, to prevent the questionnaire from being exhaustive and to minimize bias brought on by response fatigue (Eggleston et al., 2011). This was possible through Qualtrics, which allowed the participants to have random access to the packaging and to ensure an impartial assignment of stimuli for each respondent. (Thompson & Panacek, 2006).

The stimuli are based on two modified samples of cosmetics packages belonging to a fictitious cosmetic brand, to minimize the effects of brand awareness. One of the packaging resembles a skincare packaging and the other a shampoo packaging. When choosing the packaging categories, the main objective was to include the most used cosmetics (Petruzzi, 2023). This study includes 4 stimuli and follows a 2 (red vs. green) x 2 (plastic vs. glass) design. Figure 2 represents the stimuli used in this research.



Figure 2: Stimuli design

The packaging design was kept as simple as possible so that each respondent would be able to focus on the material and colour and not on other details of the packaging design (such as, the logo, texture, etc). Moreover, packaging of two different product categories with distinct shapes were included to guarantee that the respondents would assess organic cosmetics packaging's as a whole and not only one specific shape.

2.3 Study Variables and Measurements

Through this study we intend to understand the impact of cosmetics' packaging (material and colour) on consumers' healthiness and environmentally

friendliness perceptions and how these perceptions influence affect towards organic cosmetics. Moreover, this study seeks to analyse the impact of health and environmental concerns on consumers' perceptions of healthiness and environmentally friendliness and on affect towards organic cosmetics. To conduct the study, we adapted scales from the literature and translated them to Portuguese as the experiment was conducted in Portugal.

As mentioned, one of the independent variables was the packaging material, which was manipulated, and we designed 2 sets of packages with 2 different materials. The packaging colour was the second independent variable, and so the same 2 sets of packages were manipulated with two different colours. This resulted in a total of 4 different sets of stimuli (plastic in green; plastic in red; glass in green; glass in red). Moreover, this study includes three dependent variables: perceived environmental friendliness, perceived healthiness and affect.

There are many scales to assess affect, hence we included in the study the items most often used in the literature (Chaudhuri & Holbrook, 2001; Strategies Author et al., 1999; Walsh et al., 2010), and a seven-point Likert type scale was used (1 = strongly disagree and 7 = strongly agree), where the respondents had to determine if they agreed that the cosmetics' packaging were pleasant, interesting, distinctive and if they liked the packaging. Perceived environmental friendliness and perceived healthiness were evaluated through the scale developed by (Binninger, 2017) and both were also measured through a seven-point Likert type scale (1= strongly disagree and 7= strongly agree).

Additionally, as presented in the conceptual model, this study includes two moderating variables: health concern and environmental concern.

As for health concern, in addition to being an independent variable, it should moderate the effect of perceived healthiness of the packaging on the affect towards organic cosmetics. To measure health concern, we adopted the scale from Schifferstein and Oude Ophuis (1998, p. 131).

Environmental concern is also an independent variable and should moderate the relationship between the perceived environmental friendliness of the packaging and the affect towards the organic cosmetics. To measure environmental concern, we adopted the scale from (Kilbourne & Pickett, 2008) and Lee, (2008). All scales can be verified in table 1, together with the original items and the items presented in the questionnaire (in Portuguese).

Finally, we also collected demographics data, such as the respondent's sex, age, education level, job and district of residence. In the questionnaire we also asked respondents what material they consider the packaging to be made of. In case the respondent failed to indicate the correct packaging material the questionnaire would not be considered valid.

<i>Variables</i>	<i>Items (pt)</i>	<i>Items (original)</i>	<i>References</i>
<i>Environmental Concern</i>	Eu sou muito preocupada/o com o ambiente.	I am very concerned about the environment.	Kilbourne e Pickett (2008); Lee (2008)
	Eu estaria disposta/o a reduzir o meu consumo para ajudar a proteger o ambiente.	I would be willing to reduce my consumption to help protect the environment.	
	São necessárias grandes mudanças sociais para proteger o ambiente.	Major social changes are necessary to protect the natural environment.	

	É necessária uma grande mudança política para proteger o ambiente.	Major political change is necessary to protect the natural environment.	
	Os seres humanos estão a abusar severamente do ambiente.	Humans are severely abusing the environment.	
	As leis antipoluição deveriam ser fortemente reforçadas.	Anti-pollution laws should be enforced more strongly.	
<i>Health Concern</i>	Tenho a impressão de que sacrifico muito pela minha saúde.	I have the impression that I sacrifice a lot for my health.	Schifferstein and Oude Ophuis (1998, p. 131)
	Considero-me muito consciente em matéria de saúde.	I consider myself very health conscious	
	Penso que a saúde é muito importante na minha vida.	I think that I take health into account a lot in my life.	
	A minha saúde é tão valiosa para mim, que estou preparada/o para sacrificar muitas coisas por ela.	My health is so valuable to me, that I am prepared to sacrifice many things for it.	
	Tenho a impressão de que as outras pessoas prestam mais atenção à sua saúde do que eu.	I have the impression that other people pay more attention to their health than I do.	
	Não me pergunto continuamente se algo me faz bem.	I do not continually ask myself whether something is good for me.	
	Não penso se aquilo que coloco na pele me faz bem.	I really don't think often about whether everything I put on my skin is healthy.	
	Muitas vezes, questiono-me sobre a minha saúde.	I often dwell on my health.	
<i>Affect</i>	Eu considero estes cosméticos agradáveis	I consider this bottle of wine to be pleasant.	(Chaudhuri & Holbrook, 2001; Samu et al., 1999; Walsh et al., 2010)
	Eu considero estes cosméticos interessantes.	I consider this bottle of wine to be interesting.	
	Eu considero estes cosméticos distintivos.	I consider this bottle of wine to be distinctive.	
	Eu gosto destes cosméticos.	I like this bottle of wine.	

Table 1: Scales of independent variables

Chapter 3

Results

3.1 Sample description

The data were gathered in Portugal in June 2022 using an online questionnaire that was sent mostly via WhatsApp. Only 192 of the 405 valid responses to the survey match the study sample. 213 respondents were ineligible either because they did not complete the questionnaire or because they did not successfully answer the filter question.

3.1.1 Sociodemographic Characterization

From the final sample of 192 respondents, 179 are Portuguese and 11 have double nationality (6%). The majority (83%) of them are female and 31 are male (16%) and most answers (30,9%) came from participants with ages between 20 and 30 years old, which corresponds with the age of the researcher. 27,8% of the respondents preferred not to indicate their age, followed by 18% with ages between 51 and 60, 10,3% from 41 to 50 and 3,1% with more than 61 years old. Only one participant had between 15 and 20 years old. In respect to the educational level, results show that 43,8% of the participants have a bachelor's degree, 31,4% have a master's degree and 10,8% are high school graduates. 15 of the respondents (7,7%) have a post-graduation and only 2 have a basic education (1%). Regarding the field of work, 66 participants (34%) work in

Management/Economy/ Finance and 21 (10,8%) work within the area of arts / architecture/ design. The areas of marketing and communication, engineering/ science and health have each 18 respondents, representing 9,3% of the sample, followed by 8,8% of the participants that work in human sciences. Finally, most (74,7%) of the participants live in Porto, only 25 live in Lisbon (12,9%) and 6 in Vila Real (3,1%). Only one participant lives in Braga and another does not live in Portugal (see Table 2).

		<i>Frequency</i>	<i>Valid Percent</i>
<i>Age</i>	15-20	1	0.7
	21-30	60	42.9
	31-40	18	12.9
	41-50	20	14.3
	51-60	35	25.0
	+61	6	4.3
	Total	140	100
<i>Nationality</i>	Portuguese	174	91.6
	Double (Portuguese +1)	11	5.7
	Other	5	2.6
	Total	190	100
<i>Educational level</i>	Basic Education	2	1.1
	High School	21	11.1
	Bachelor's degree	85	44.7
	Post-Graduation	15	7.9
	Master's degree	61	32.1
	Other	6	3.2
	Total	190	100
<i>Occupation</i>	Management/ Finance/Economy	66	35.3
	Arts/Design/ Architecture	21	11.2
	Social and Human Sciences	17	9.1
	Marketing and Communication	18	9.6
	Engineering and Production	18	9.6
	Health	18	9.6
	Other	29	15.5
	Total	187	100

<i>Residence</i>			
Braga	1		0.6
Lisbon	25		14.0
Porto	145		81.5
Vila Real	6		3.4
Not in Portugal	1		0.6
Total	178		100

Table 2: Sociodemographic Characterization

3.1.2 Organic Cosmetics consumption characterization

Within the context of this research, it is particularly relevant to understand the respondents' relationship with organic/natural cosmetics. For this purpose, the questionnaire included four questions to evaluate the awareness and consumption of the participants of organic/natural cosmetics. Regarding the awareness, 98,4% of the participants knew what organic/natural cosmetics were. As for the frequency of purchase, 42,9% of the participants rarely buy organic/natural cosmetics, but 30,9% buy them several times a year. A few respondents (6,8%) purchase organic cosmetics several times a month and 2,6% buy them daily. There are 31 respondents (16%) that have never bought organic cosmetics. In terms of the usage of these products, 71,2% stated that they have already used an organic/natural cosmetic, 22,5% don't remember if they have or not them. Only 6,3% say they have never done so. Considering the respondents that have already used organic cosmetics, 37,5% use them on a daily basis, 27,9% use them rarely, 13,2% monthly and 9,6% have used them "one or two times" (see Table 3). Furthermore, in terms of the organic cosmetics category more frequently used, results show that skincare products are consumed the most (118 participants), followed by haircare products that are slightly more consumed

than bath Products (74 and 73 participants, respectively). The categories less used are manicure/pedicure, shaving products and perfumes (see Table 3).

Binomial Test

	Item	N	Total	Proportion	p
<i>Awareness</i>	Yes	188	191	0.984	<.001
	No	3	191	0.016	<.001
<i>Purchased in the past</i>	Never	31	191	0.162	<.001
	Rarely	82	191	0.429	0.060
	Many times a year	59	191	0.309	<.001
	Many times a month	13	191	0.068	<.001
	Many times a week	1	191	0.005	<.001
	Daily	5	191	0.026	<.001
<i>Usage</i>	I don't remember	43	191	0.225	<.001
	Yes	136	191	0.712	<.001
	No	12	191	0.063	<.001
<i>Frequency</i>	Daily	51	136	0.375	0.004
	Weekly	16	136	0.118	<.001
	Monthly	18	136	0.132	<.001
	Rarely	38	136	0.279	<.001
	Used it once or twice	13	136	0.096	<.001
<i>Category</i>	Sunscreen & Bronzers	38	136	0.279	<.001
	Skincare	118	136	0.868	<.001
	Manicure/ Pedicure	5	136	0.037	0.063
	Hair Care	74	136	0.544	<.001
	Baby Products	11	136	0.080	<.001
	Shower Products	73	136	0.537	<.001
	Shaving Products	6	136	0.044	0.031
	Perfumes	7	136	0.051	0.016
	Make-up	43	136	0.316	<.001
	Oral Higiene	31	136	0.228	<.001

Table 3: Organic cosmetics consumption characterization

3.2 Statistical Analysis

3.2.1 Coding

Before starting with the statistical analysis, it was necessary to code the categorical variables to work with the data in the IBM SPSS program. The

variables of packaging colour and packaging material were coded into dummy variables (see Table 4). Moreover, the health concern scale had three items (represented with an * in Table 5) that needed to be reversed so that the construct could be validated. Finally, it was also necessary to reverse the frequency of use, so that the growth in the scale (1 to 5) also represented an increase in frequency of use.

<i>Material</i>	Glass packaging	1
	Plastic packaging	0
<i>Colour</i>	Green packaging	1
	Red packaging	0

Table 4: Dummy variables

3.2.2 Measurement model

The validity of the measurement model was tested with the sample (n=192) and with a reliability scale test. According to Pallant (2011), the scale reliability refers to the extent to which a scale is free of random errors. To do so, the internal consistency was tested, using Cronbach's Alpha, which ranges from 0 and 1. Values closer to 1 indicate a higher reliability, however, it is usually considered that the value should be equal or higher than 0,7 (Nunnally, 1978; Pallant, 2011). After examining the reliability of the study variables, it is possible to conclude that the model has adequate internal consistency, as all variables have a Cronbach's Alpha (α) higher than the recommended value (0,7), and, thus, the model can be tested. Moreover, it should be noted that perceived environmental friendliness and affect have a very high Cronbach Alpha ($\alpha > 0,9$) having an excellent internal consistency (see Table 5).

Construct	Mean	Std. Deviation	N	Cronbach alpha (α)
Health Concern				0.702
<i>I have the impression that I sacrifice a lot for my health.</i>	4.0365	1.37049	192	
<i>I consider myself very health conscious</i>	4.8646	1.32728	192	
<i>I think that I take health into account a lot in my life.</i>	6.3750	1.02073	192	
<i>My health is so valuable to me, that I am prepared to sacrifice many things for it.</i>	5.3438	1.25183	192	
<i>I have the impression that other people pay more attention to their health than I do.*</i>	5.1302	1.37621	192	
<i>I do not continually ask myself whether something is good for me.*</i>	3.8021	1.84544	192	
<i>I really don't think often about whether everything I eat is healthy.*</i>	4.9531	1.78208	192	
<i>I often dwell on my health.</i>	3.9115	1.96233	192	
Environmental Concern				0.833
<i>I am very concerned about the environment.</i>	5.2448	1.32928	192	
<i>I would be willing to reduce my consumption to help protect the environment.</i>	5.5052	1.28624	192	
<i>Major social changes are necessary to protect the natural environment.</i>	6.2760	1.12182	192	
<i>Major political change is necessary to protect the natural environment.</i>	6.2969	1.07343	192	
<i>Humans are severely abusing the environment.</i>	6.3073	1.03060	192	
<i>Anti-pollution laws should be enforced more strongly.</i>	6.2083	1.06261	192	
Affect				0.915
<i>I consider this bottle of wine to be pleasant.</i>	5.1615	1.33027	192	
<i>I consider this bottle of wine to be interesting.</i>	5.2552	1.38143	192	
<i>I consider this bottle of wine to be distinctive.</i>	4.8385	1.47580	192	
<i>I like this bottle of wine.</i>	4.8958	1.47566	192	
Perceived Healthiness				0.891
<i>The nutrition qualities of this product are good for the health</i>	5.1875	1.39792	192	
<i>You can immediately see that this product is healthy</i>	4.1979	1.53234	192	
<i>This product is globally good for the health</i>	4.6250	1.40865	192	
<i>This product is healthy and natural</i>	4.9167	1.51893	192	
Perceived Environmental Friendliness				0.942
<i>This is an eco-friendly product</i>	4.6719	1.55582	192	
<i>This product respects the environment</i>	4.7031	1.61160	192	
<i>This product is one of those that really respect the environment</i>	4.5052	1.62441	192	
<i>You can immediately see that this product is ecological</i>	4.0573	1.68512	192	
<i>This product is more ecological than most</i>	4.5313	1.62734	192	

Table 5: Scales and Chronbach alfa (α) results

3.2.3 Hypothesis testing and correlation analysis

To test the hypotheses of the conceptual model, several analyses were conducted through the IBM SPSS software or through the Jamovi software. The first four hypotheses were tested with an independent T-test. The first independent sample T-test was conducted to compare the perceived environmental friendliness of plastic packaging and glass packaging. To conduct the T-test, it is first necessary to verify if the assumption that the variances are equal across groups can be validated through the Levene Test. The presence of equal variances across samples is referred to as variance homogeneity. If $p > 0.05$ we can assume the homogeneity, but if $p < 0.05$, we cannot. In case we cannot assume the equal variances, the test can still be significant, but we must look into the respective p value. In this case we cannot assume the equal variances ($p < 0.001$), and we must assume the values accordingly. There were significant differences (see Table 7) ($t(186.98) = 5.785$; $p = 0.001$) in the scores of the T-test, with the mean score for plastic ($M = 4.03$; $SD = 1.567$) being lower than glass ($M = 5.114$; $SD = 1.023$) (table 6). The magnitude of the differences in the means (mean difference = 1.084, 95% CI: 0.714 to 1.453) was significant, hence, H1 was supported, confirming that glass is perceived as more environmentally friendly than plastic.

	N	Mean	Std. Deviation
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<i>P_Env_friendliness</i>	Glass	82	5.1146	1.02272
	Packaging	110	4.0309	1.56737

Table 6: Mean differences - perceived environmental friendliness

		<i>Levene's Test for Equality of Variances</i>		<i>95% Confidence Interval</i>				
		Sig.	t	df	p	Mean difference	Lower	Upper
<i>P_Env_friendliness</i>	Equal variances not assumed	<.001	5.785	186.985	<.001	.18732	.71419	1.45326
	Equal variances assumed							

Table 7: T-test - Perceived Environmental friendliness & material (H1)

H2, which regards the relationship between the packaging material and perceived healthiness, was also confirmed ($t(187.5) = 4.191$; $p = 0,001$), and the mean score for glass ($m = 5.149$; $SD = 1.095$) is again higher than the mean of plastic ($m=4.420$; $SD=1.311$) (see Table 8). This time, according to the Levene's test, it was possible to assume the equal variances ($p < 0.103$) (Table 9). Moreover, H2 may be assumed as $p < 0.001$ and the difference in the means was again significant (Table 9) (mean difference = 0.1729, 95% CI: 0.386 to 1.072).

	N	Mean	Std. Deviation
<i>P_Healthiness</i>			
Glass	82	5.1494	1.09492
Packaging	110	4.4205	1.31109

Table 8: Mean differences - perceived healthiness

		<i>Levene's Test for Equality of Variances</i>			<i>95% Confidence Interval of Difference</i>			
		Sig.	t	df	p	Mean difference	Lower	Upper
<i>P_Healthiness</i>	Equal variances assumed	<.103	4.083	190	<.001	.172894	.37680	1.08108

Table 9: T-test - Perceived Environmental friendliness & material (H2)

However, regarding H3, although the Levene's test allows us to assume the equal variances ($p = 0.308$), the p-value of the T-test is $> 0,05$, meaning that we cannot reject the null hypothesis and cannot assume that there are significant differences between how red or green influence perceptions of environmental friendliness (see Table 10). H4 was also not confirmed (packaging colour and perceived healthiness), as the T-test p-value was also $> 0,05$ (see Table 10).

		<i>Levene's Test for Equality of Variances</i>			<i>95% Confidence Interval of Difference</i>			
		Sig.	t	df	One- Sided p	Two- Sided p	Lower	Upper
<i>P_Env_friendliness</i>	Equal variances assumed	.308	.410	190	.341	.682	-.3328	.50746
<i>P_Healthiness</i>	Equal variances not assumed	.039	-.552	189.57	.291	.581	-.4566	.25688

Table 10: Packaging colour - Perceived environmental friendliness / Perceived healthiness

To analyse the hypotheses H5, H6, H8 and H9, we used the Pearson correlation analysis. Starting with H5, results show (see Table 11) that the correlation between environmental concerns and affect towards organic/natural cosmetics is positive and statistically significant ($p < 0.001$). Although correlation is weak ($r = 0.246$), we can validate H5.

	N	Mean Rank	Std. Deviation	r	p
Environmental Concern	192	5.973	0.853	0.246**	<0.001
Affect	192	5.038	1.265	0.246**	<0.001

Table 11: Hypothesis - environmental concern x affect

Similarly, H8 intended to analyse the correlation between health concerns and affect towards organic/natural cosmetics. The correlation was found (Table 12) to be positive and statistically significant ($r = 0.311$; $p < 0.001$), meaning that the higher the health concerns the higher the affect towards organic/natural cosmetics. This correlation is also weak, although stronger than in the case of H5 ($0.311 > 0.246$).

	N	Mean Rank	Std. Deviation	r	p
Health Concern	192	4.802	0.867	0.311**	<0.001
Affect	192	5.038	1.265	0.311**	<0.001

Table 12: Hypothesis 9 - health concern x affect

The analysis of H6 and H9 was again carried out with a Pearson correlation. According to the results (Table 13 and 14), the correlation between perceived

environmental friendliness and affect is statistically significant ($r = 0.547$, $p < 0.001$), and the correlation between perceived healthiness and affect too ($r=0.689$, $p<0.001$). Both correlations are moderate, although the one between perceived healthiness and affect is stronger ($0.689 > 0.547$). Through the findings it is possible to conclude that the greater the perceived environmental friendliness or perceived healthiness, the greater the affect towards organic/natural cosmetics and, thus, H6 and H9 were confirmed.

	N	Mean	Std. Deviation	r	p
Affect	192	5.038	1.265	0.547**	<0.001
Perceived environmental friendliness	192	4.4938	1.461	0.547**	<0.001

Table 13: Hypothesis 6 - Pearson Correlation

	N	Mean	Std. Deviation	r	p
Affect	192	5.038	1.265	0.689**	<0.001
Perceived healthiness	192	4.732	1.273	0.689**	<0.001

Table 14: Hypothesis 9 - Pearson Correlation

Finally, to confirm H7 and H10, a moderation model was developed. Starting with H7, the model intended to confirm the relationship between environmental concerns and affect towards organic/natural cosmetics and how environmental concerns moderates the relationship between perceived environmental friendliness and affect (see Figure 3).

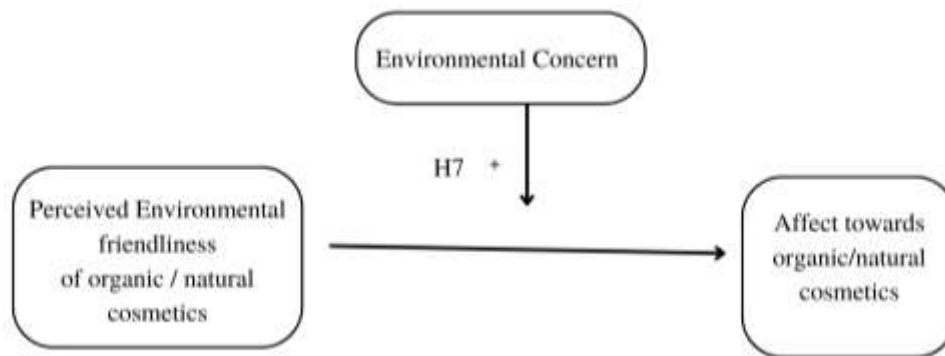


Figure 3: Moderation model - Perceived environmental friendliness x environmental concern x affect

Results show (see Table 15) that, in contrarily to our expectations, environmental concerns do not moderate the relationship between perceived environmental friendliness and affect towards organic/natural cosmetics ($p > 0,05$), and, thus, H7 is rejected. However, through the results (Table 15) we can observe that there is a relationship between affect and perceived environmental friendliness ($p < 0.001$) and affect and environmental concerns ($p = 0.004$).

		Estimat	SE	Z	p
Perceived environmental friendliness		0.4674	0.0519	9.01	< 0.001
Environmental Concern		0.2510	0.0872	2.88	0.004
Environmental Concern x Perceived environmental friendliness		-0.0709	0.0649	-1.09	0.275

Table 15: Hypothesis 7 - moderation

Lastly, H10 was developed to confirm if health concerns moderate the relationship between perceived healthiness and affect (see Figure 4). This moderation is confirmed (see Table 16), as results indicate that there is a relationship between perceived healthiness and affect ($p < 0.001$), between health concerns and affect ($p = 0.027$) and that the moderation is significant ($p = 0.029$).

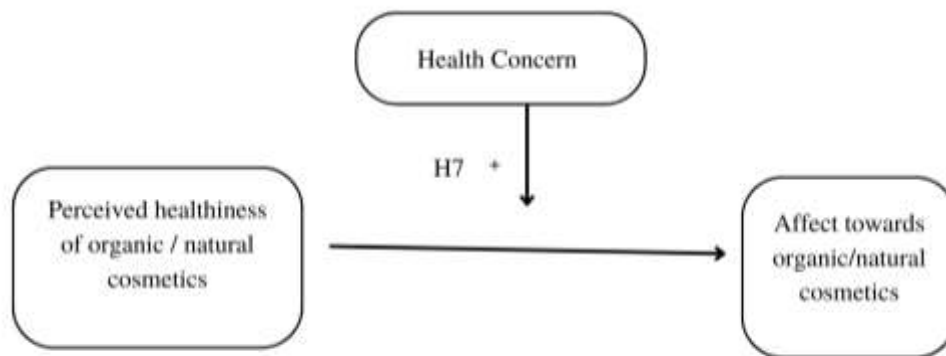


Figure 4: Moderation model - Perceived healthiness x health concern x affect

	Estimate	SE	Z	p
Perceived healthiness	0.644	0.0509	12.65	< 0.001
Health Concern	0.165	0.0745	2.22	0.027
Health Concern x Perceived healthiness	0.119	0.0548	2.12	0.029

Table 16: Hypothesis 10 - moderation

By analysing the estimate results, it is possible to conclude that this moderation exists in all levels (high (+1SD above the mean), average, low (-1SD below the mean) of health concerns ($p < 0.001$) and that the higher the health

concerns, the stronger the relationship between perceived healthiness and affect (see Table 17).

	Estimate	SE	Z	p
Average	0.644	0.0514	12.52	< 0.001
Low (-1SD)	0.541	0.0723	7.47	< 0.001
High (+1 SD)	0.747	0.0678	11.02	< 0.001

Table 17: Hypothesis 10 - moderation levels

Note. shows the effect of the predictor (P_Healthiness) on the dependent variable (Affect) at different levels of the moderator (Health_Concern_Main)

After analysing which hypotheses were confirmed, it was interesting to cross the findings with the sociodemographic data. A Spearman correlation analysis was conducted, and results show that there is no correlation between the age of the respondents and the dependent and independent variables, apart from environmental concerns (see Table 18). This correlation is positive, meaning that the older the respondents, the more concerned they are about the environment.

		<i>Environmental Concern</i>	<i>Health Concern</i>	<i>Perceived Healthiness</i>	<i>Perceived Environmental Friendliness</i>	<i>Affect</i>
Age_scale	Correlation Coefficient	.193*	-.090	.006	.094	-.035
	Sig. (2-tailed)	.022	.292	.939	.272	.685
	N	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

Table 18: Spearman correlation - Age

The Spearman correlation also allowed to conclude that there is a correlation between the frequency of use of organic/natural cosmetics and environmental

concerns, health concerns, affect, and perceived healthiness (see Table 19). However, we could not observe any the relationship with perceived environmental friendliness. Results show that there is a low ($p < 0.3$) but positive correlation between the variables (e.g., the higher environmental concerns, the higher the frequency of use of organic/natural cosmetics).

		Frequency
<i>ENV_Concern_Main</i>	Rho de Spearman	0.254 **
	p-value	0.003
<i>Health_Concern_Main</i>	Rho de Spearman	0.196 *
	p-value	0.022
<i>Affect</i>	Rho de Spearman	0.284 ***
	p-value	< .001
<i>P_Healthiness</i>	Rho de Spearman	0.272 **
	p-value	0.001
<i>P_Env_friend</i>	Rho de Spearman	0.156
	p-value	0.069

Table 19: Spearman correlation – Frequency of use

Through descriptive statistics it was also possible to observe that respondents working in marketing and communication were the ones having more health concerns, and, curiously, respondents working in the health sector were the ones caring the most for the environment (see Table 20).

	Occupation	N	Mean	Std. Deviation
<i>Health_Concern_Main</i>	Management/ Finance/Economy	66	4.73	0.975
	Arts/Design/ Architecture	21	4.92	1.011
	Social and Human Sciences	17	4.74	0.857
	Marketing and Communication	18	5.19	0.853
	Engineering and Production	18	4.65	0.787
	Health	18	4.77	0.617
	Other	29	4.81	0.718
<i>ENV_Concern_Main</i>	Management/ Finance/Economy	66	5.92	0.730
	Arts/Design/ Architecture	21	5.95	1.132
	Social and Human Sciences	17	5.87	0.953
	Marketing and Communication	18	6.11	0.810
	Engineering and Production	18	6.02	0.918

Occupation	N	Mean	Std. Deviation
Health	18	6.17	0.679
Other	29	6.00	0.969

Table 20: Descriptive Analysis – Occupation

The results did not show any relevant relationships between the study variables and the other demographic variables, such as city of residence, gender, nationality, or level of education.

Chapter 4

Discussion

This study allowed us to validate most of the hypotheses proposed in the literature review, although not all relationships were confirmed and significant. Surprisingly, we could not confirm that there is a significant relationship between packaging colour and perceived environmental friendliness (H3) or healthiness (H4) of an organic/natural cosmetic. According to Hagtvedt & Brasel (2017), the saturation of a colour has a great influence on consumers' perceptions and product preferences. Moreover, Meada and Richerson (2018) suggest that products with vivid colour packaging are considered less healthy than packaging with less saturated colour. Thus, it is possible that the saturation level of the colours chosen for this study was not aligned with the respondents' expectations, and this might have influenced our results. Still, the study concluded that packaging material has indeed an influence on the perceptions of environmental friendliness (H1) and healthiness (H2), in such a way that glass is perceived as more sustainable and healthier than plastic. This supports the findings from Lindh et al., (2016), and Swida et al., (2018).

Moreover, our findings are consistent with Koenig-Lewis et al's (2014), since the more consumers perceive an organic/natural cosmetic as environmentally friendly, the higher will be their affect towards the product (H6). The same happens regarding perceptions of healthiness (H9). Indeed, participants showed a higher level of affect when they perceived the organic/natural cosmetic as healthier. Furthermore, results show that perceived healthiness has a greater

influence on affect towards an organic/natural cosmetic than perceived environmental friendliness.

Through the literature review we found that environmental concerns also influence consumers' affect. For instance, Smith and Paladino (2010) found that there is a favourable correlation between organic attitudes and environmental concerns. Moreover, several authors (e.g., Magnusson et al., 2003; Ghazali et al., 's, 2017; Photcharoen et al., 2020) suggested that there is also a relationship between health concerns and affect. Our findings suggest that indeed both these correlations are true (H5 and H8), but that health concerns have a greater influence on affect towards organic/natural cosmetics than environmental concerns.

Besides understanding their impact on affect towards organic/natural cosmetics, this study also intended to verify if environmental concerns moderate the relationship between perceived environmental friendliness and affect (H7). Surprisingly the results show that environmental concerns do not moderate this relationship. Nevertheless, the findings did validate a moderating influence, namely the one of health concerns on the relationship between perceived healthiness and affect towards organic/natural cosmetics. These findings are aligned with Chrysochou & Grunert's (2014) study, as the authors found that health concerns had an impact on the influence that organic claims had on purchase intention, as well as on the perceptions of the healthiness of foods.

Literature findings also state that elder consumers prefer ecological food due to their health concerns rather than for environmental aspects (Wandel and Bugge, 1997). Though, we could not observe the same with organic/natural cosmetics. When analysing the socio-demographic data, we concluded that the elder the respondents, the higher their level of environmental concerns but the same was not observed with health concerns.

In terms of the level and frequency of buying, Schifferstein and Ophuis (1998) stated that for consumers with an incidental buying behaviour, health is the most important motive for purchasing organic food, whereas for heavy buyers, both health and environmental issues are equally important. Schifferstein and Oude Ophuis (1998) defend that the frequency of buying could be correlated with health concerns. Although we could not observe this specific correlation in this research, findings show that the frequency of usage has indeed a correlation with environmental concerns, health concerns, affect and perceived healthiness. Only the perception of environmental friendliness had no relationship with the frequency of usage.

Chapter 5

Conclusion

5.1 Theoretical and managerial implications

The conclusions of this research have concrete relevance, as no other empirical study was ever made on how packaging influences the level of affect of Portuguese consumers towards organic/natural cosmetics. Moreover, there is no other empirical study that analysed the relationship between health or environmental concerns of Portuguese consumers and their affect towards this category of products.

The findings have direct managerial implications, as they allow brands to better understand their public audience and adapt their strategies accordingly. For example, knowing that a specific packaging material, namely glass, is perceived as healthier and more environmentally friendly by the audience, managers may support their decision of changing their packaging from plastic to glass. On the other hand, knowing that colour has no influence on those perceptions, can, for example, support decisions of packaging innovation, by changing the packaging colour to other colours outside the spectrum of green. These information's are relevant, as they guide brands in development of their packaging to gain competitive advantage.

Moreover, as consumers' health concerns have a greater influence on affect than their environmental concerns, brands should adapt their marketing strategies accordingly. As affect towards organic/natural cosmetics is more influenced by perceived healthiness than by perceived environmental

friendliness, marketers should develop their brand communications more focused in health claims.

It was also interesting to conclude that environmental concerns do not moderate the relationship between perceived environmental friendliness and affect towards organic/natural cosmetics. This means that a consumer's affect towards an organic/natural cosmetic that is perceived as environmentally friendly will be higher than an organic/natural cosmetic that is perceived as not environmentally friendly, regardless of his/her environmental concerns. On the other hand, health concerns positively moderate the relationship between the perceived healthiness of an organic/natural cosmetic and consumer's affect towards it. For this reason, consumers with health concerns will be more sensitive to factors that influence the perceived healthiness of an organic/natural cosmetic, such as the packaging material. This may also be relevant for marketers of brands with strong health messages and customers with great health concerns, which should adapt their packaging and marketing strategies accordingly.

5.2 Limitations and suggestions for future research

This research allowed us to draw many conclusions, however, it had some limitations and room for improvements.

The packaging developed (namely the glass packaging) was not indicative enough of its material, which led 82 respondents to wrongly perceive it as a plastic packaging, and not be eligible for the study. This may be since nowadays several plastic cosmetics are transparent and through a picture the observer cannot distinguish the material being used. Also, regarding the packaging, the

colour saturation chosen might have had an impact on consumers' perceptions and evaluation of the packaging, influencing the results. In fact, several authors state that colour has three components, namely hue, brightness, and saturation, and all three convey meaning to the consumer (Gimba, 1998; Moller, Elliot, & Maier, 2009; Wright & Rainwater, 1962).

Another limitation is related to time and space constraints. Other variables that influence Portuguese consumers' affect towards organic/natural cosmetics could have been studied. However, a proper analysis of these variables, would require more time. Previous studies demonstrated that affect influences purchase intention (Mostafa, 2007); therefore, it would be interesting to apply this model to consumer purchase intention, as many of the respondents demonstrated a certain level of affect, despite having never purchased an organic/natural cosmetic. Moreover, a further study could verify if the variables "perceived healthiness" and "perceived environmental friendliness" mediate the relationship between the packaging elements analysed and consumers' affect. Since this industry is still quite new in Portugal, there are a lot of other analysis that could have been done. For instance, a further study could analyse other elements of packaging, such as the logo design, shape and the sustainable or health claims, to compare the influence these might have on affect towards organic/natural cosmetics.

As mentioned, brands use different social media strategies to target their public audience. Knowing that environmental and health concerns have influence on the Portuguese consumer's affect towards organic/natural cosmetics, it could be of relevant to analyse if these also influence how consumers perceive the social media strategies.

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Appendixes

Appendix I – Different packaging designs



Figure 5: Packaging designs. Source: Own construct

Appendix 2 – Different social media strategies

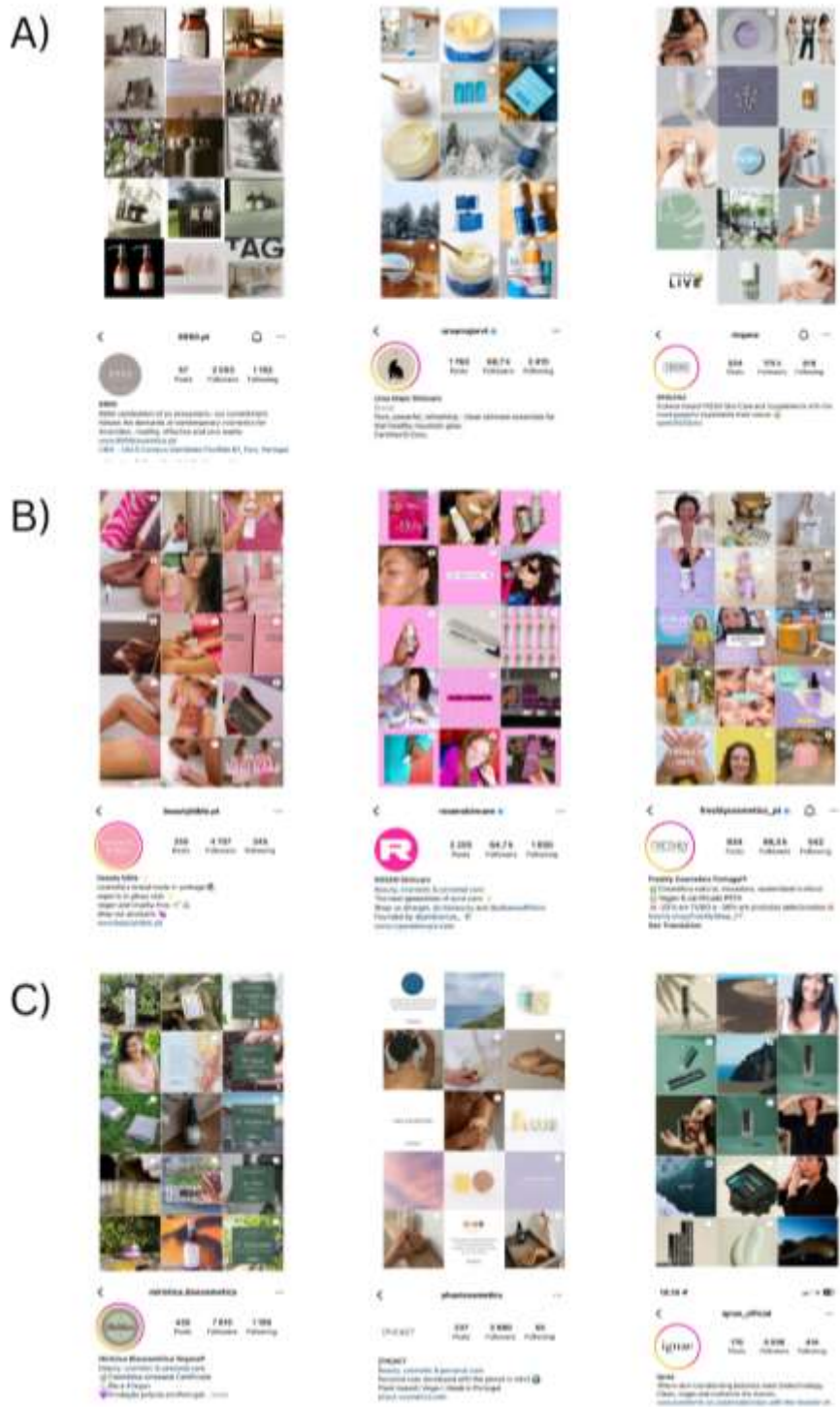


Figure 6: Social Media Strategies. Source: Instagram and own construct

Appendix 3 – Questionnaire

Q1- Environmental Concern - Por favor, classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	Eu sou muito preocupada/o com o ambiente.
2	Eu estaria disposta/o a reduzir o meu consumo para ajudar a proteger o ambiente.
3	São necessárias grandes mudanças sociais para proteger o ambiente.
4	É necessária uma grande mudança política para proteger o ambiente.
5	Os seres humanos estão a abusar severamente do ambiente.
6	As leis antipoluição deveriam ser fortemente reforçadas.

Q2- Health Concern - Por favor, classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	Tenho a impressão de que sacrifico muito pela minha saúde.
2	Considero-me muito consciente em matéria de saúde.
3	Penso que a saúde é muito importante na minha vida.
4	A minha saúde é tão valiosa para mim, que estou preparada/o para sacrificar muitas coisas por ela.
5	Tenho a impressão de que as outras pessoas prestam mais atenção à sua saúde do que eu.
6	Não me pergunto continuamente se algo me faz bem.
7	Não penso se aquilo que coloco na pele me faz bem.
8	Muitas vezes, questiono-me sobre a minha saúde.

Q3- Purchase Intention - Tendo em conta a embalagem e propriedades dos produtos acima demonstrados, por favor classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	Eu teria intenção de comprar estes cosméticos.
2	Eu recomendaria estes cosméticos a outras pessoas no futuro.
3	Se o seu preço for semelhante ao de outros cosméticos, eu preferiria estes cosméticos

Q4- Affection - Tendo em conta a embalagem e propriedades dos produtos acima demonstrados, por favor classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	Eu considero estes 2 cosméticos agradáveis
2	Eu considero estes 2 cosméticos interessantes
3	Eu considero estes 2 cosméticos distintivos.
4	Eu gosto destes 2 cosméticos.

Q5- Perceived healthiness - Tendo em conta a embalagem e propriedades dos produtos acima demonstrados, por favor classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	As propriedades deste produto são boas para a saúde

2	Percebemos imediatamente que este produto é bom para a saúde.
3	Este produto é globalmente bom para a saúde.
4	Este produto é saudável e natural.

Q6- Perceived Env Friend - Tendo em conta a embalagem e propriedades dos produtos acima demonstrados, por favor classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	Este produto é sustentável
2	Este produto respeita o ambiente
3	Este produto é daqueles que respeita mesmo o ambiente
4	Percebemos imediatamente que este produto é ecológico.
5	Este produto é mais ecológico que a maioria.

Q7 - Tendo em conta a embalagem e propriedades dos produtos acima demonstrados, por favor classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	Eu considero estes cosméticos agradáveis
2	Eu considero estes cosméticos interessantes
3	Eu considero estes cosméticos distintivos.
4	Eu gosto destes cosméticos.

Q8 - Tendo em conta a embalagem e propriedades dos produtos acima demonstrados, por favor classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	As propriedades deste produto são boas para a saúde
2	Percebemos imediatamente que este produto é bom para a saúde.
3	Este produto é globalmente bom para a saúde.
4	Este produto é saudável e natural.

Q9 - Tendo em conta a embalagem e propriedades dos produtos acima demonstrados, por favor classifique o seu grau de concordância com as seguintes afirmações (1=discordo totalmente; 7=concordo totalmente)

#	
1	Este produto é sustentável
2	Este produto respeita o ambiente
3	Este produto é daqueles que respeita mesmo o ambiente
4	Percebemos imediatamente que este produto é ecológico.
5	Este produto é mais ecológico que a maioria.

Q10 - De que material considerou que eram as embalagens que observou anteriormente?

Q11 - Já tinha ouvido falar em cosméticos naturais ou orgânicos?

Q12 - Já comprou cosméticos naturais /orgânicos?

Q13 - Já utilizou cosméticos naturais/ orgânicos?

Q14 - Com que regularidade utiliza?

Q15 - Que categoria/s já comprou ou utilizou?