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Sustainability Labels as Heuristic Cues

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Abstract (EN)

Title: Sustainability Labels as Heuristic Cues

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Summary: We know sustainability labels like Fairtrade and Organic are used by people to infer price, quality and ethicality of products. In this study we propose that these labels can be processed in a superficial way, working as heuristic cues to make inferences about the products.

Therefore, when in the presence of both sustainability labels and other more complex information regarding a product, conditions of high cognitive load should lead to an increase of the relative weight given to the sustainability labels to make judgments about that product.

Through an experimental study following a 2(Cognitive load: high; low) x 2(Sustainability label: present; absent) x 2(Product description: positive; negative) mixed-subjects design, it was possible to collect and analyze product evaluations from 125 participants , in different conditions of cognitive load. The cognitive load conditions (high or low) were manipulated to potentiate a more, or less intuitive processing of information of the consumers, and understand how they evaluate the products and use the sustainability labels in different conditions. In high cognitive load conditions, participants were asked to memorize 9-digits numbers, while in low cognitive load conditions, participants were asked to memorize 3-digits numbers.

The study revealed that sustainability labels are indeed being used by the consumers to make inferences of price, ethicality and quality. These inferences based on the labels are especially significant when the participants are in conditions of high cognitive load, suggesting that consumers use these labels as heuristics, especially when they cannot process other more diagnostic information regarding the products.

Keywords: Sustainability Labels. Fairtrade. Organic. Sustainable Consumption. Product Evaluation. Heuristics. Dual-Process Theories.

Resumo (PT)

Título: Uso de Símbolos de Sustentabilidade como Heurísticas

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Sumário: Sabemos que símbolos de sustentabilidade, como Fairtrade e Orgânico, são utilizados pelas pessoas para inferir preço, qualidade e ética de um produto. Neste estudo propomos que estes símbolos podem ser processados de forma superficial, representando pistas heurísticas para fazer inferências sobre produtos.

Como tal, quando na presença de símbolos de sustentabilidade e de outra informação mais complexa sobre a qualidade de um produto, condições de sobrecarga cognitiva devem aumentar o peso relativo dado aos símbolos de sustentabilidade para fazer julgamentos sobre esse produto.

Através de um estudo experimental 2(Carga cognitiva: alta; baixa) x 2(Símbolos de sustentabilidade: presentes; ausentes) x 2(Descrição do produto: positiva; negativa) foi possível analisar as avaliações de produtos de 125 participantes em diferentes condições de carga cognitiva. A manipulação da carga cognitiva (alta ou baixa) foi utilizada para potenciar um raciocínio mais, ou menos intuitivo dos participantes e perceber como estes avaliam os produtos e fazem uso dos símbolos de sustentabilidade em diferentes condições. No cenário de alta carga cognitiva os participantes tiveram de memorizar números de 9 dígitos, enquanto que no cenário de baixa carga cognitiva foi pedido aos participantes para memorizarem números de 3 dígitos.

O estudo demonstrou que os símbolos de sustentabilidade são de facto utilizados pelos consumidores para fazer inferências de preço, ética e qualidade. Estas inferências baseadas nos símbolos são especialmente fortes quando os participantes estão em condições de alta carga cognitiva, sugerindo que os consumidores usam os símbolos como heurística, quando não conseguem processar outra informação mais diagnóstica relativa aos produtos.

Palavras-chave: Símbolos de Sustentabilidade. Fairtrade. Orgânico. Avaliação de Produtos. Heurísticas. Teoria de Processo Duplo de Raciocínio.

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List of Abbreviations

CPE – Consumer Perceived Ethicality

H – Hypothesis

HCL – High Cognitive Load

LCL – Low Cognitive Load

RQ – Research Question

SL – Sustainability Label

SLs – Sustainability Labels

WTP – Willingness to Pay

Chapter 1: Introduction

1.1 Research Topic

In the last few years there has been an increasing interest in sustainability and sustainable consumption. Many articles have been published on this topic and many companies are making public statements and changing their practices to become more sustainable. Consumers' concern with the future of the planet and future generations has also been growing and so has the demand for sustainable products. Sustainable consumption is seen by consumers as a behavior they can have to help in preserving the planet and its resources, working as their contribution to a better world.

Sustainability labels (SLs) are used to signal sustainable or green products, and the stronger presence and exposure to these labels has led to consumers making inferences based on them. Inferences of price, quality and ethicality are usually made based on these labels.

The present study aims to explore the role of SLs in the inferences made by consumers regarding sustainable products and understand how they are processed. Specially we want to know if the labels are used by consumers as heuristics. Even though there are studies focusing on the role of such labels, to the best of our knowledge no study has been made regarding the use of SLs as heuristic cues.

1.2 Research Problem

The goal of this dissertation is to understand the impact that SLs can have on the evaluation of products carrying those labels, in terms of hedonic and utilitarian value, overall quality, healthiness, ethicality and price. And under which conditions these inferences are stronger.

Research Questions

RQ1: Do sustainability labels work as heuristics to infer quality, ethicality, and price of a product?

RQ2: In which conditions will the inferences made based on the sustainability label be stronger?

Hypothesis

H1: When a sustainability label is present, it will influence the inferences people make about the product.

H1a: People will infer more ethicality, because it is what the label means.

H1b: If the label is a heuristic it will also be used to make inferences of price and quality. People will infer higher price, higher hedonic and utilitarian value, more healthiness, as well as higher overall quality of the product.

H2: (If sustainability labels are used as heuristic cues) these inferences will be particularly strong when participants are in conditions of high cognitive load and cannot process additional diagnostic information.

What this means is that in conditions of high cognitive load, we expect that people will be less capable of processing diagnostic information but will be able to process the labels. So, in high cognitive load conditions, the inferences will be based more on the label than on other information available. Therefore, the labels will work as heuristics.

1.3 Dissertation Structure

The present dissertation is composed by five chapters. The first chapter is an introductory one, in which the research topic and questions are presented. The second chapter offers a comprehensive literature review on the most relevant topics for the development of this dissertation. The third chapter provides an explanation of the methodology used to collect the necessary data. The fourth chapter includes a detailed analysis of the data collected. The fifth and final chapter presents the main conclusions drawn from the study, research limitations and possibilities for future research.

Chapter 2: Literature Review

2.1 Sustainability and Sustainable Consumption

The most widely used definition of sustainability is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). A later formulation of the concept, known as the Triple Bottom Line, comprises three important dimensions: economic prosperity, social equity, and environmental quality (Elkington 1998). Other existing literature related to the topic of sustainability and sustainable consumption, focus on socially responsible behaviors, which can be defined as "actions taken by individuals to enhance societal well-being (do good) or to avoid harmful consequences for the collective (do no harm)" (Crilly, Schneider, & Zollo, 2008). Some examples of such behaviors include recycling, buying sustainable products, saving energy and other natural resources, or donating money to a cause (Cojuharenco et al., 2016). Sustainable consumption is therefore considered a socially responsible behavior, and the growing concern of consumers regarding their moral responsibility to preserve the environment (Caruana, 2007), has led to a considerable increase of the global market for environmentally friendly products (Mazar & Zhong, 2010).

The buying process of green and sustainable products has therefore gained increased attention of academics over the last few years (Bodur et al., 2014; Luchs et al., 2012; Luchs and Kumar, 2015; Peloza et al., 2013). The concern and attention of managers and policymakers to these topics has also increased, and sustainability is already seen as one of the defining business challenges of our times (Sheth et al., 2010). This growing focus on sustainability efforts can be specially interesting and challenging for marketers. One of the reasons for that is the that even though consumers are more aware of the importance of choosing social and environmentally friendly products and services, the ethical intention–behavior gap (where good intentions do not always translate into good behavior) is still big (Carrington et al., 2014). Additionally, other studies have shown that when questioned about purchasing habits, consumers will often say they are willing to pay more for ethical products, but most of the times this will not translate into real purchases (Luchs et al., 2010; Luchs et al., 2012; Luchs and Kumar, 2015; Carrigan and Atalla, 2001). Another reason, and a barrier that marketers should try to overcome, is the perceptions consumers have regarding sustainable products and sustainable consumption. Consumers often perceive the choice of a sustainable product as having a cost to the self, it can be an increased effort, a higher cost, inferior quality, or inferior aesthetics (Luchs et al., 2012).

In this study, these perceptions that consumers have about sustainable products are the main subject of interest.

2.2 Ethicality and Product Preference

Ethicality or sustainability are usually seen as positive desirable attributes of a product, and can increase product preference, but this is not always the case.

There are two main streams of research regarding preference (or not) for a product based on the presence of positive desirable attributes, in that product. One suggests that when a product includes a positive attribute, the positivity often extends to other product attributes. This is also called the halo effect (Asch, 1946; Nisbett and Wilson, 1977; Thorndike, 1920) or the affect heuristic (Finucane et al., 2000), and it means that when we consider a person or a product good or bad in one category, we are likely to consider them as good or bad in other categories. The halo effect is a cognitive bias where a trait of someone/something is used to make judgements about that someone/something on something completely unrelated to that previously observed trait. It does not work just for automatic or intuitive judgments, it is many times something processed rationally, a person can really believe in that halo effect and apply it in a situation, in a rational way (Kahneman, 2011). This would imply that if ethicality is valued and if the product is ethical, then other attributes of the sustainable product (e.g. quality, healthiness) will be viewed more positively as well. The other stream suggests that the presence of a desirable positive attribute can have a negative effect on the perception of other product attributes, as consumers may infer that products that are superior on one attribute will be relatively inferior on other attributes, it is a trade-off (Chernev and Carpenter 2001). For ethical products, this implies that the presence of a positive ethical attribute will result in the expectation of decreased performance on other attributes. Beliefs in the halo effects and in these trade-offs theory would imply a unidirectional effect of ethicality on product preference, meaning that sustainable products would be preferred if halo effects prevailed and not preferred if beliefs about trade-offs theory prevailed, but this seems to be a too simplistic view.

A more complex relationship between sustainability and product preference has been proposed by Luchs et al. (2010), which states that the preference for the product will vary depending on the benefit sought from that product. He argues that ethicality is positively associated with some types of benefits and negatively associated with other types of benefits. Specifically, the author suggests that usually consumers associate ethicality with more gentleness-related attributes (e.g. safety and health) but not with strength-related attributes (power and durability).

These findings strengthen the idea that increasing product ethicality does not always increase product preference. Even though consumers value ethicality, it does not necessarily mean that they will prefer sustainable products. Focusing on quality perceptions, which is something important for consumers when they are making a purchasing decision, several studies show that for green/sustainable products, this perception will vary depending on the product category and type of attributes valued by the consumers on that given product category. Therefore, there are some situations in which the benefit of sustainability is offset to such an extent that consumers prefer less sustainable products even though they may care about ethical issues. The challenge for managers and marketers is thus to understand in which cases ethical attributes are valued by consumers, and then work on increasing the appeal of sustainable products across all product categories (Luchs et al., 2010).

The present study aims to understand the perceptions consumers currently have about sustainable products and the inferences they are making intuitively about this type of products. Findings should help marketers in advertising and communicating these products in a more effective way, to generate more product preference.

2.3 Sustainability Labels

"Eco-labels" or "Sustainability labels", seek to inform consumers about the effects that the production, consumption and waste phases of the products or services consumed have on the environment. Their goal is to provide consumers with more information and transparency about these effects and encourage them to move towards a more environmentally friendly consumption. It also works to encourage producers, governments and other entities to increase environmental standards of products and services.

Today, several types of eco-labels/sustainability-labels exist and are used across many industries and product categories. According to the ecolabel index website (ecolabelindex.com) currently there are 463 eco-labels, across 199 countries and 25 industry sectors.

In recent years, there has been an increase in both public and private entities communicating sustainability-related information about food and drinks to consumers, by introducing labels and logos in-store and on-pack (Hoogland et al., 2007; Grunert et al., 2014). And that why we decided to study SLs in the context of food and drinks.

Among the more significant labels are the Fairtrade and Organic certifications, and it is not uncommon for products to bear the two labels simultaneously. In the perception of many consumers, Organic and Fairtrade are more or less the same, and although it is true that both

certifications are essentially ethical, "Organic" sets standards for agricultural methods and the use of natural resources, while "Fairtrade" sets standards for trade and the people involved in the process.

The Organic certification label can be found across a large variety of food products nowadays. All over the globe organic production has generated a growing interest and there has been an increase in demand for organic products in recent years. Products that have been labeled as organic must comply with certain standards that are maintained by a government agency or third-party certifier (Loureiro and Lotade, 2005). Organic farming is an agricultural method that aims to produce food using natural substances and processes. In the European Union (EU), for example, the objectives of organic farming include the use of energy and natural resources responsibly, the respect for biodiversity, and the establishment of a sustainable management system to preserve regional ecological balances (e.g. soils), as well as adhering to high standards of animal welfare (European Commission, 2019). Therefore, organic products are grown without synthetic pesticides, herbicides or chemical fertilizers that can be harmful to the earth (Loureiro and Lotade, 2005). The organic logo provides a coherent visual identity for organic products produced and sold in the EU. This aims to make it easier for European consumers to identify organic products as well as help farmers to market their organic products across all EU countries (European Commission, 2019).

The principle behind Fairtrade is that products are bought from farmers and producers at a fair price, which means they receive a value that covers at least their costs of production (FLO, 2019; Loureiro and Lotade, 2005). In practice, Fairtrade means buying products from farmers/producers in developing countries on terms that are more favorable to them and marketing this products in developing countries at an ethical premium (Bird and Hughes, 1997). For a product to carry the Fairtrade Certification Mark, producers and traders must meet the Fairtrade Standards, which include social, environmental and economic criteria, as well as progress requirements and terms of trade. Products with the Fairtrade certification usually carry the label on the package, even though this is done to make it easier for consumers to identify such products, it is not always the case (De Pelsmacker et al., 2005). Often, Fairtrade certification is not distinguished from other on-package information such as the brand name or nutritional information, or consumers do not distinguish Fairtrade certification from other existing ethical certification labels (e.g. Rainforest Alliance certification, UTZ certified, Organic certifications, Non-GMO certification), (Nilsson et al., 2004; Salzhauer, 1991; Teisl et al., 1999; Coelho do Vale et al., 2017).

These labels are intended to be used as a superficial cue to summarize the Fairtrade or Organic production processes. Whether they are understood this way, and whether they are used this way (that is, superficially) by consumers, we don't know yet.

2.4 What Sustainability Labels Mean to Consumers

Some consumers still don't understand fully the meaning of sustainability labels, but most of them are aware they exist, and are used to see them frequently when shopping (Coelho do Vale et al., 2017).

Regarding what people infer from sustainability labels, specifically from the Fairtrade certification, there has been previously research exploring how this label can affect product valuations (Coelho do Vale et al., 2017). In the study of Coelho do Vale and colleagues, they were interested in understanding the impact that Fairtrade certifications can have on product valuations, more specifically this was measured in terms of package evaluation, product quality perceptions, CPE-consumer perceived ethicality, and WTP-willingness to pay. Their studies followed a 2(Fairtrade Certification: yes; no) x 2(Brand Familiarity: low; high) x 2(Fairtrade Expertise: low; high) randomized between-within latin squares design. The main results of the studies revealed that the label can in fact contribute to more positive overall evaluations of a product, being a significant differentiating element for brands, but this effect was especially strong when the label was present in low familiarity brand products. Interestingly, for high familiarity brands the same did not happen, and the presence of Fairtrade label seemed to affect negatively product evaluations, with consumers indicating a lower WTP for products featuring the label on-pack. This seems to indicate that even though the presence of a SL can have a positive impact on product valuations, when the brand is a well-known one, consumers can also be influenced by a set of cognitive and affective associations they previously had with that brand. Additionally, it was found that the higher the Fairtrade expertise, the higher the WTP for products with Fairtrade label.

Regarding if sustainability labels are used and processed superficially, as heuristics, that is what we intend to study in this thesis, because to the best of our knowledge no one has done it yet. In order to study this, in this research, the Fairtrade label will be the label used as stimuli. This label was chosen because it was the one used in the study of Coelho Do Vale and colleagues (2017), and because nowadays the Fairtrade certification is one of the most widely used ethics-label (Jaffee et al., 2010), specially by food brands, and in products like chocolate, coffee and soft-drinks. Therefore, this certification has been chosen with the goal of increasing the chances

of consumers having been exposed to it before, which is the first pre-requisite for it to be used as a heuristic.

2.5 Heuristics and Dual Process Theories

Heuristics are rules of thumb or cognitive shortcuts that people use to guide their decisions or behavior (Drolet et al., 2009).

Dual process theories correspond to the idea that cognitive processes can be partitioned into two main families – traditionally called intuition and reason (Kahneman & Frederick, 2005).

In this study, the notion of a SL as a judgmental heuristic is examined within the framework of dual-process theories, specifically the heuristic-systematic model (Chaiken, 1980; Chaiken et al., 1989) and the Two-Systems model (Stanovich and West, 2002; Kahneman, 2003), but there are many other authors exploring dual-process theories of reasoning (Epstein, 1994; Evans, 1984; Evans & Over, 1996; Sloman, 1996; Gilbert, 1999).

The heuristic-systematic model (Chaiken, 1980; Chaiken et al., 1989) considers two simultaneous ways of processing information. One is the Systematic processing, which is conceptualized as a comprehensive and analytic way of information processing, where subjects carefully consider and process the content of the message. Systematic processing requires cognitive capacity, and thus depends on the processor's willingness and ability to allocate the necessary resources. When capacity to process is adequate, the motivation to allocate processing resources is also a major determinant of systematic processing. However, it seems like systematic processing may be more the exception than the rule. Most of the times, in our day-to-day life, judgement situations are routine rather than personally involving, and usually there are multiple tasks competing for our limited processing capacity. Considerations of cognitive economy suggest that under such conditions, subjects will prefer less effortful means of assessing the validity of a message or the quality of a product (Chaiken, 1980; Maheswaran & Meyers-Levy, 1990; Petty & Cacioppo, 1984). The other way of processing information is the Heuristic processing, which corresponds to a limited information processing. When processing heuristically, people assess the validity of a message or the quality of a product through a superficial consideration of cues available at that moment. For example, by using the surface or structural characteristics of the message (e.g. length or number of arguments) or the communicator characteristics (e.g. expertise or likeability) to make a decision (Chaiken, 1980; Chaiken et al., 1989). Examples of heuristics in this context are "experts' statements can be trusted" and therefore nothing else is verified or further processed by the subject, or "length

implies strength" where long messages are automatically associated with better quality. Such heuristics allow people to evaluate the probable validity of a message without having to fully process its semantic content. What this study aims to understand is if this is happening in the context of SLs (specifically Fairtrade and Organic), meaning, if by seeing a Fairtrade or Organic symbol in a product, consumers are already inferring ethicality, healthiness, quality or price, superficially without having to absorb and process more information (e.g. nutritional information, price).

It is important to note that for heuristics to work there needs to be a previously stored mental representation, which can later be (or not) activated in a certain situation. The output of this is then available for use in assessing the validity of a message or in the formulation of judgments, therefore, heuristics can be thought of as structures that generate information, on which a decision about acceptance or rejection of something (e.g. a product) can be made (Maheswaran, Mackie & Chaiken, 1992). In the specific case of Fairtrade label, for a person to use it as an heuristic, this person has to have seen the label before, associated with something (e.g. a high price product or a high quality product), and then when the person is in contact again with the label then he/she will be able to infer something automatically from the label as he/she will recall the thing that was associated with it before (e.g. high price or high quality). Heuristics have largely been studied in the context of persuasive messages (Petty & Cacioppo, 1984), and later in the context of brand names (Maheswaran, Mackie & Chaiken, 1992). Regarding this later one, it is proposed that knowledge structures, such as the name of a brand, can generate expectations about a product by providing diagnostic information regarding the product's likely quality. In Chaiken's study, participants' motivation level was manipulated in order to test if brand names were used as a heuristic cue to make products evaluations and understand in which circumstances this happened. Initially participants of the study were told they would be evaluating a new product, the "CT-100" cordless telephone. Each participant received a four-page booklet with information regarding the new product which was used for the experimental manipulations. Through a small text introduction in the first page of the booklet, participants were assigned to either a high-task importance or a low-task importance scenario. After, brand name valence was manipulated by presenting participants with either a favorable ('AT&T', presented as a pioneer in the field of Telecommunications) or an unfavorable brand name ('Cobra', presented as a small and recent entrant in the field of Telecommunications). In the two last pages of the booklet, attribute importance was manipulated by presenting participants with different description versions of the product. For the important attributes condition participants read that the telephone featured several important attributes, and the description

contained five important attributes and one unimportant attribute (e.g. number of colors). While in the unimportant attributes condition participants read that the telephone featured several unimportant attributes, and the description contains five unimportant attributes and one important attribute (e.g. multiple channel capacity). Therefore, both descriptions mentioned six attributes, all with positive connotations. The congruency of the information was also varied by orthogonally manipulating brand name valence and attribute importance. Congruent conditions were a combination of favorable brand name with important attributes, or unfavorable brand name with unimportant attributes. Incongruent conditions featured favorable brand name with unimportant attributes, or unfavorable brand name with important attributes. Then, participants had to evaluate the product, by expressing their intentions to buy and attitudes towards the "CT-100". More positive evaluations were obtained in the conditions where brand name was favorable, and the product description mentioned important attributes. When task-importance was high there has no brand name effect, and the impact of the attribute information was higher. When task-importance was low, attribute information had only a marginal influence on the product evaluations, and subjects made more references to the brand name. Overall, the study showed that when individuals' motivation to process information is low, brand names can serve as heuristic cues, and a favorable brand name will lead to better product evaluations than an unfavorable brand name (Chaiken et al., 1992).

In the specific case of this thesis, we want to understand if SLs can be used as heuristic cues, the same way as brand names in Chaiken's study, but we will use cognitive load manipulation (Gilbert, 1989) instead of motivation manipulation.

Additionally, the results of Chaiken's study add to previous research regarding the additivity and attenuation assumptions of the heuristic-systematic model. Rather than suggesting that individuals engage in either heuristic or systematic processing, this model proposes that under some circumstances heuristic and systematic processing can co-occur, and there are two possible interactive effects, the attenuation effect and the additivity effect. In the attenuation effect, consumers may initially process the heuristic cue, but a subsequent systematic processing of the semantic content of the communication will minimize the heuristic cue's judgmental impact. This is specially true in situations where the systematic processing yields information that contradicts the validity of the heuristic decision rule. For example, if there is consensus information indicating that most people like a product, but a subsequent processing of information about the product's attributes contradicts this expectation, consumers might discount the consensus heuristic. In that situation, the product evaluation will be mainly affected by the content of the communication and not by the heuristic (Maheswaran & Chaiken, 1991).

On the other hand, there is another interactive effect, the additivity effect, which proposes that when the heuristic cue and the systematic processing do not yield highly contradictory information, the attitude judgments can be influenced by both (Chaiken et al., 1989; Maheswaran & Chaiken, 1991).

Building on what was mentioned before, in the scope of dual-process theories, and heuristics and biases in decision-making processes there are many other well-known studies published (Tversky & Kahneman, 1974; Kahneman and Tversky, 1982; Gilovich, Griffin, and Kahneman, 2002; Stanovich and West, 2002). Focusing on the Two-Systems model (Stanovich and West, 2002; Kahneman, 2003), more generic labels were adopted for the two processes, 'System 1' and 'System 2', these systems differ in speed, controllability, and contexts in which they operate. System 1 is fast, shallow, effortless and intuitive (it is Chaiken's heuristic processing), while System 2 is slower, effortful, deep, reflective and controlled (it is Chaiken's systematic processing). Although System 1 is more primitive than System 2 it does not mean it is less capable. On the contrary, complex cognitive operations eventually migrate from System 2 to System 1 as proficiency and skill increase. When someone becomes an expert on something, effortful serial processing is replaced by automatic and intuitive processing (Kahneman, 2002). Regarding heuristic decision-making, it is interesting to understand in which conditions people are more intuitive, and therefore make more use of heuristics. The best indicator of whether a mental process should be assigned to System 1 or System 2 is the difference in effort. For example, if people are occupied by a demanding mental activity, like trying to hold in mind several digits, they are much more likely to respond to another task by blurting out whatever comes to mind (Gilbert, 1989), and therefore to be more intuitive, making use of System 1 (Kahneman, 2002).

The findings regarding the conditions for the use of intuition or rationality are similar across all dual-process theories. Findings suggest that "when motivation and ability to engage in issue relevant thinking are low, heuristic processing dominates, and in these situations simple cues are very likely to influence judgments" (Chaiken et al., 1992). Moreover, the reliance on System 2 (Systematic/Rational processing) requires motivation, time and cognitive resources, meaning, working memory capacity, while System 1 (Heuristic/Intuitive processing) relies on associative memory and includes low capacity processes.

2.6 Summary

We started by defining sustainability and highlighting the huge relevance the topic has nowadays, which was the main reason for the choice of such topic of study. This was followed by an exposure of how sustainability is usually a desirable attribute to consumers but does not

always drive product preference. Sustainable products are usually identified using SLs which are intended to be used as superficial cues to summarize information, such as the type of production processes used (e.g. Fairtrade or Organic), so a section was dedicated to these labels. As the main goal of this study was to understand how these SLs are processed by consumers, and drawing on the aforementioned streams of literature we chose to do it within the framework of dual-process theories, contrasting systematic and heuristic processing, so there was also a section of our literature review focused on this theories. As we postulate that the SLs can be processed heuristically, we propose that their use should be insensitive to cognitive load manipulations, while the systematic processing of other cues should be reduced in conditions of high cognitive load. And all the above allowed us to develop the following research hypothesis:

H1: When a SL is present, it will influence the inferences people make about the product.

H1a: People will infer more ethicality, because it is what the label means.

H1b: If the label is a heuristic it will also be used to make inferences of price and quality. People will infer higher price, higher hedonic and utilitarian value, more healthiness, as well as higher overall quality of the product.

H2: (If SLs are used as heuristic cues) these inferences will be particularly strong when participants are in conditions of high cognitive load and cannot process additional diagnostic information.

More precisely, to test these hypotheses we will manipulate the level of cognitive load of the participants, by asking them to memorize either 3-digits numbers (low cognitive load condition) or 9-digits numbers (high cognitive load condition). The reason to have a 9-digits number is that people can only remember 7 (+2 or –2) digits in their short-term memory at a time (Miller, 1956). Participants will be randomly assigned to either the LCL (low cognitive load) condition, which will be our control condition, or to the HCL (high cognitive load) condition. By putting participants in a condition of HCL we want to reduce their ability to engage in systematic thinking, making them process information more heuristically. Participants will then be asked to evaluate products with different combinations of SL (present or absent) and type of description (positive or negative). Each participant will evaluate four juices: one with a SL and a positive product description, one with a SL and a negative product description, one with no SL and a positive description and one with no SL and a negative product description. Product evaluations will be made regarding hedonic value, utilitarian value, overall quality of the

product, healthiness, ethicality, price perception and WTP. By comparing evaluations made in conditions of low and high cognitive load we hope to further understand if the SLs are used by consumers as heuristic cues to make product evaluations.

Chapter 3: Methodology

3.1 Pre-test

To test the materials for the main study, a pre-test was conducted.

3.1.1 Research Instruments

A pre-test, done in Qualtrics, was conducted with the goal of testing the adequacy of the materials (four juices) to be used in the main survey. This survey was shared using mainly Whatsapp and Messenger and was developed only in English (Appendix A).

3.1.2 Research Participants

This survey was distributed to 25 participants, all volunteer. No specific target was defined.

3.1.3 Research Materials & Procedure

The survey started with a question regarding the brand of the juices, the goal was for the brand to be unknown so that there was no brand effect on the evaluations that would be made by participants on the main survey. We had the initial idea that the brand selected, "Odwalla", was an unknown brand in Portugal, as it is only sold in the USA but to test this, a picture of a juice from this brand and a picture of the brand logo zoomed-in were both presented to the participants, together with the question: "How familiarized are you with this brand?" with a 7-point Likert scale (where, 1 = *Not at All* and 7 = *Extremely Familiarized*).

Afterwards, to tested whether four different juice flavors led to similar quality and ethical judgments, participants were presented with four images of juices with different flavors (Orange, Mango and fruit blend, Strawberry and fruit blend, and a Green fruit blend) all presenting the Fairtrade label. On a 7-point Likert scale (1 = *Do not agree at all* and 7 = *Totally agree*) participants judged each juice and rated their agreement with the following sentences: "This product has high quality", "This product seems to taste good", "I would like to try this product", "I like this flavor very much"; "This packaging is very attractive"; "This product is environmentally friendly" and "This product is socially responsible".

3.1.4 Pre-test Findings

Brand Familiarity:

To make sure the brand was not a familiar brand, a one-sample t-test was run for the question "How familiarized are you with this brand?". As the answer was in a 7-point Likert scale, the middle point or 'test value' was defined as 3.5. The test showed that the brand was an unfamiliar brand ($M = 1.20$; $SD = 1$; $t\,(24) = -11.500$, $p < .001$)

Quality Perceptions:

A new variable for overall quality was created doing a mean of the answers to the questions: "This product has high quality", "This product seems to taste good", "I would like to try this product", "I like this flavor very much" and "This packaging is very attractive", for the four juices (juice A, juice B, juice C and juice D). A main effect for juice was not found ($F(1, 22) = .290$, $p = .833$, $\eta 2 = .012$), and evaluations of quality were similar for the four juices (M_{juiceA}= 5.73 , SD_{juiceA}= .94; M_{juiceB}= 5.80 , SD_{juiceB}= 1.08; M_{juiceC}= 5.72 , SD_{juiceC}= .81 ; M_{juiceD}= 5.64 , SD_{juiceD}= .95).

Sustainability Perceptions:

A new variable for sustainability was created by doing a mean of the answers to the questions: "This product is environmentally friendly" and "This product is socially responsible". There was not a main effect of juice ($F(1, 22) = 1.145$, $p = .337$, $\eta 2 = .046$), and evaluations of sustainability were similar for the four juices (M_{juiceA}= 6.54 , SD_{juiceA}= .89; M_{juiceB}= 6.48 , SD_{juiceB} =.87; M_{juiceC}= 6.54 , SD_{juiceC}= .92 ; M_{juiceD}= 6.42 , SD_{juiceD}= .94).

3.2 Main Study

To investigate the hypothesis developed, an experimental study was conducted.

3.2.1 Research Instruments

The main survey was developed using the platform Qualtrics and shared through social media (Facebook and LinkedIn) and messaging apps (WhatsApp and Messenger). The online survey method and these channels of communication were chosen because of the several advantages they offer. Being the main ones, the possibility to obtain a high number of responses in a short amount of time, allowing for anonymity of the participants, which promotes their honesty, and finally, cost-efficiency. The survey was available both in English and Portuguese so that people that feel less comfortable with the English language could still answer it (Appendix B).

3.2.2 Research Participants

Participants of this study were all volunteers. In total, 429 participants started to fill-out the survey. However, only 221 respondents completed the survey entirely. From those, after data cleaning, only 125 answers were considered valid and analyzed.

No specific target was previously defined for this study. The goal was to have a broad range of people, quickly and inexpensively, so no restrictions of age, nationality or education level were imposed. Therefore, the sampling technique used was a non-probabilistic one, more precisely

it was a convenience sampling. The survey was mainly distributed among friends, family and colleagues.

3.2.3 Research Materials

Independent variables:

-*Cognitive load level*. A task, which demanded cognitive effort, was used to manipulate the participant's ability to engage in issue-relevant thinking (Maheswaran, D., Mackie, D. M., & Chaiken, S., 1992; Chaiken, S., & Trope, Y., 1999; Chaiken, S., & Ledgerwood, A., 2012).

-*Presence of sustainability label*. SL was manipulated by presenting subjects with a version of a product with or without SL. In the condition with SL, participants saw a product with a Fairtrade and Organic label, while in the condition without SL they saw a product without any labels.

-*Type of product description*. Product description was manipulated by using either a positive or a negative product description. In the positive description, the product was portrayed as having several positive characteristics and no negative characteristics. In the negative description, the product was described as having several negative characteristics and no positive characteristics.

The positive product description stated:

> "100% natural fruit juice, no additives. No artificial colors or preservatives. No artificial flavors. Rich in vitamins and minerals. Low in calories. No added sugars*. (*Only contains natural sugars from the fruit). Energy per 100ml: 18kcal. Total sugars per 100ml: 5g"

The negative product description stated:

> "Blend of fruit juices/purées from concentrate with added ingredients. Contains artificial colors (E110, E122, E142) and preservatives (sodium benzoate). With artificial flavors. Low in vitamins and minerals. Not a reduced calorie food. Contains sucralose (E955). Energy per 100ml: 46kcal. Total sugars per 100ml: 25g"

The presence of SL and the type of product description were orthogonally manipulated, for the information to be varied. As a result, each participant saw a product with label and positive description, a product without label and a positive description, a product with label and negative description, and a product without label and negative description. The combination of label,

description and juice, as well as the order by which the products appeared to each participant were randomized to avoid biases.

Dependent Variables:

To measure participants perceptions about the products, the question "What is the likelihood of this product containing the following characteristics:" was presented followed by a total of fourteen sentences to be answered using seven-point scales (1 = *Not at all* and 7 = *Totally*). Most of the scales used were adapted from previous literature. Dependent variables were presented in the order described below.

-*Hedonic Value*. To measure the hedonic value perception, two sentences were used "It provides enjoyment" and "It's tasty".

-*Utilitarian Value.* For the utilitarian value perceptions, two sentences were used "It's nutritive" and "It's useful". In the context of the survey, because the products evaluated were juices, the usefulness was associated with the juice delivering what it was supposed to deliver, which could be "feeding" the person if she was hungry, satiation when the person feels thirsty, or refreshing if the person drinks it with that purpose.

-*Healthiness*. To measure the perceived healthiness of the product four statements were presented: "It's healthy", "It's not artificially flavored", "It does not contain preservatives" and "It's safe" (Coelho do Vale et al., 2017).

-*Quality*. The perceived overall quality of the product was measured using a very direct sentence "It has quality".

-*Ethicality*. In order to measure the participants' perceived ethicality of the products, some indicators were adapted from the CPE Scale (Brunk, 2012), "It is socially responsible" and "It respects moral norms". Additionally, another statement related to sustainability was considered useful and therefore added to the scale: "It is environmentally friendly".

-*Price.* Price perception of participants regarding the different juices was measured by using the sentences "It is expensive" and "It has a high price". Even though these two are similar, the first one intends to understand if participants felt that the juice was expensive compared to other products of the same category, and the second one intended to understand if participants thought the product had a high-value price.

-*Willingness to Pay* (*WTP)*. After evaluating each product, participants were asked about their WTP for the juice previously presented, this was an open question expressed in euros. The question used was "What would be the price you would be willing to pay for this product (€)?" (Coelho do Vale et al., 2017).

-*Number Recall.* To check if participants were focused on the task of memorizing the number, and because it was crucial for the cognitive load manipulation, an open question was administrated so that participants could write down the number. This would also show the participants the importance of memorizing the number, if they were not asked to write it down there was the possibility that they would ignore the task.

-*Cognitive Load control.* In order to check if cognitive load manipulation had the predicted effect, participants were presented with the question: "Remembering the digits took a lot of my energy" on a 7-point Likert scale (where 1 = *Completely Disagree* and 7 = *Completely Agree).*

3.2.4 Research Procedure

At the beginning, all participants saw a welcome text explaining the scope of the study, they were informed that there were no right or wrong answers and they were assured that all responses would be kept confidential, anonymous and used only for academic purposes. Participants gave their consent by actively pressing the button to move forward after seeing the message: "By moving forward you agree to voluntarily participate in this study".

First, participants were randomly assigned to one of the conditions, HCL or LCL. Here, participants were told they were participating in a study about memory, instead of being told they were participating in a study about SLs as heuristics, so that they would not be biased in their answers. They were informed that their main task would be to memorize numbers (9-digits numbers for HCL condition, 3-digits numbers for LCL), and that after the presentation of each number they would be presented with some secondary tasks that could distract them and make their memorization of the number more challenging. Secondary tasks consisted of evaluating four juices, and after evaluating each juice participants were asked to write down the number they had been previously asked to memorize.

There were four different juice flavors (Appendix C: Orange, Mango and fruit blend, Strawberry and fruit blend, and a Green fruit blend) from a real brand "Odwalla" (the idea was for it to be an unknown brand to the participants of the study).

We made sure that all juices were paired with both conditions of label and description. This was made to cancel any possible effects of flavor differences and to avoid always having the same juice with the same description and resulted in eight different survey versions (4 HCL, 4 LCL). In each scenario participants had to evaluate four different juices: one with SL and positive description; one with SL and negative description; one without SL and positive description; one without SL and negative description. No participant saw the same juice more than once, and each juice and respective questions were in a different block. The blocks were randomized, so that the order by which the products appeared didn't have any influence on the evaluation made. In each block participants were asked to evaluate the juices in terms of hedonic aspect, utilitarian aspect, healthiness, ethicality, price and WTP.

After this there was a question to control for cognitive load, where participants had to report if they felt that remembering the number took a lot of energy.

Subsequently, to test if participants were familiarized with the SLs, they were presented with both the Fairtrade and Organic label and had to answer questions regarding familiarity with the labels.

At the end participants were asked to provide demographic data (nationality, gender, age and occupation). Finally, participants that successfully finished the survey were able to see an automatic "Thank you" message.

3.2.5 Research Design

The experiment followed a 2(Cognitive Load: high; low) x 2(Sustainability Label: present; absent) x 2(Product Description: positive; negative) mixed-subjects design.

Initially, participants were randomly assigned to one of two conditions: HCL or LCL, this was a condition between-subjects. After being assigned to one of the conditions, participants were assigned to a survey, where they had to evaluate four different juices, and which was constructed following a 2(Sustainability Label: present; absent) x 2(Product Description: positive; negative) within-subject design.

	Positive Description	Negative Description
Sustainability Label	Product with a sustainability label and positive description	Product with a sustainability label and negative description
No Sustainability Label	Product without a sustainability label and positive description	Product without a sustainability label and negative description

Table 1. 2x2 Within-Subject Design

Chapter 4: Analysis of Results

4.1 Data Collection

The main study had a total of 125 valid responses. From those, 51 correspond to participants that were assigned to the HCL condition and 74 correspond to participants assigned to the LCL condition.

4.2 Data Screening

Before proceeding to the analysis of the data collected, the results of the survey were subject to data cleaning. From a total of 429 participants who initiated the questionnaire, only 221 completed 100% of the survey (all questions were mandatory), and from those only 125 were eligible for further analysis (the criteria used was: valid answers to WTP open questions, remembering at least two-thirds of the number, exclusion of participants who answered without variability on their data and of participants who did not know the Fairtrade label at all).

4.3 Data Reliability

To check the reliability and internal consistency of the multi-item scales used in the questionnaire, the Cronbach's alpha was measured (Peterson, 1994).

The scales of hedonic value, which included the questions "It provides enjoyment" and "It's tasty" (on a 7-point Likert scale), showed a high level of internal consistency ($\alpha = .942$). The scales of utilitarian value, which included the questions "It's nutritive" and "It's useful" (7-point Likert scale), also showed a high level of internal consistency ($\alpha = .850$). The scales for healthiness, which included the questions "It's healthy", "It's not artificially flavored", "It does not contain preservatives" and "It's safe" (7-point Likert scale), also showed a high level of internal consistency ($\alpha = .884$). The scales used for ethicality, which included the questions "It is socially responsible", "It respects moral norms" and "It is environmentally friendly" (7-point Likert scale), also showed a high level of internal consistency ($\alpha = .915$). The scales for price, which included the questions "It is expensive" and "It has a high price" (7-point Likert scale), also showed a high level of internal consistency ($\alpha = .977$).

As all the alphas were above .70 there was no need to delete items from any of the scales.

4.4 Sample Characterization

Regarding sample demographics, from all the 125 valid respondents, 94,4% were Portuguese and only 5,6% were from other nationalities. The distribution between female and male respondents was quite balanced with 40% men and 60% women. The two major age groups were represented by people between 21-30 years old (44%) and 41-50 years old (25,6%).

Regarding occupation of the participants, 39 were students (31,2%), 84 were employed (67,2%), one was unemployed, and one was retired.

4.5 Manipulation Check

Regarding the manipulation check, in order to control the cognitive load manipulation, an independent samples t-test was run for the question "Remembering the numbers took a lot of my energy", and it was expected that there was a difference between the HCL and the LCL group ($M_{low\ load}$= 2.68, $SD_{low\ load}$ = 1.49 ; $M_{high\ load}$ = 5.77, $SD_{high\ load}$ = 1.39 ; t (123) = -11.688 , p < .001). If the manipulation worked it was expected that the mean was higher for the HCL group, which was verified.

	N	Mean	Std. Deviation
LCL	74	2,6757	1,49068
HCL	51	5,7647	1,39411

Table 2. Descriptive Statistics: Cognitive Load Control

Additionally, to further control for the cognitive load, the recall task was also analyzed using an independent samples t-test, and it was expected that there were more perfect recalls for the LCL task than for the HCL task. First the recall task answers were recoded into a dummy variable, where 1=perfect recall; 0=not perfect recall. The t-test was significant which means there was a difference between the LCL task and the HCL task ($M_{low\ load}$= 0.93 , $SD_{low\ load}$ = 0.13 ; $M_{high\ load}$ = 0.61 , $SD_{high\ load}$ = 0.37 ; t (123) = 6.771 , p = .000). For the manipulation to work the mean had to be higher for the LCL group, which was verified.

	N	Mean	Std. Deviation
LCL	74	0,9291	0,12768
HCL	51	0,6127	0,37187

Table 3. Descriptive Statistics: Recall Task

The first manipulation allowed to check if people felt that they were doing an effort, while the second one allowed to verify if it translated into the actual answers people gave on the recall task, meaning if they were really memorizing the numbers and if there was a difference between an easier task (3-digits recall) and a harder task (9-digit recall).

4.6 In-depth Analysis

The statistical analysis performed to evaluate the data collected for the main study is presented below. The statistical tests used included ANOVAS at a 95%confidence level to find the effects

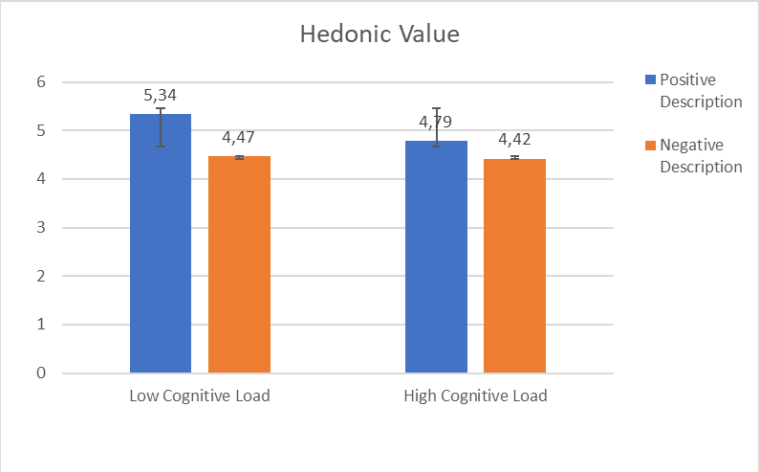
of the independent variables on the dependent variables of interest, and t-tests to further understand the differences between conditions.

4.6.1 Hedonic Value

-*Label*. The ANOVA revealed a main effect of label (F(1, 123) = 8.83, p = .004, η2 = .067). The presence of label leads to higher evaluations of hedonic value (M = 4.90, SD = 1.38) compared to not having the presence of label (M = 4.66, SD = 1.27).

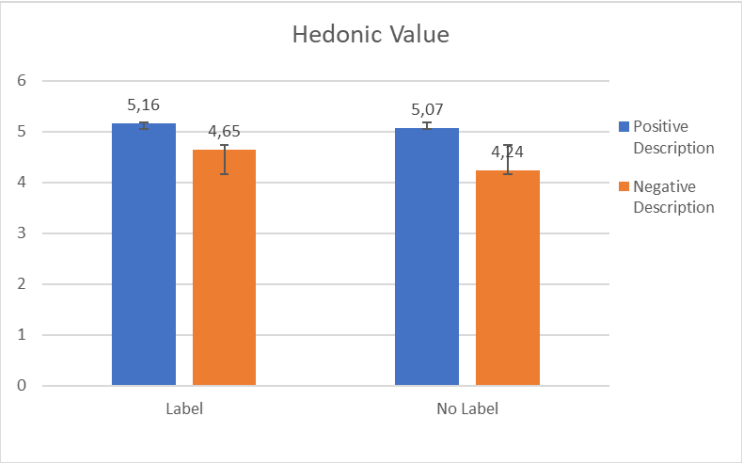
-*Description*. A main effect was found (F(1, 123) = 35.94, p < .001, η2 = .226). Positive description leads to higher evaluations of hedonic value (M = 5.12, SD = 1.30) compared to negative description (M = 4.45, SD = 1.35).

-*Interaction Description-Cognitive Load.* Interaction was found to be significant (F(1, 123) = 5.829, p = .017, η2 = .045). The weight that both the positive and negative descriptions have on the evaluations of hedonic value is lower in the condition of HCL ($M_{positive}$= 4.79 , $SD_{positive}$ = 1.57 ; $M_{negative}$= 4.42, $SD_{negative}$= 1.35) than in the condition of LCL ($M_{positive}$= 5.34 , $SD_{positive}$ = 1.02 ; $M_{negative}$= 4.47, $SD_{negative}$= 1.37). This interaction suggests that under HCL conditions it is more difficult to process the product descriptions.



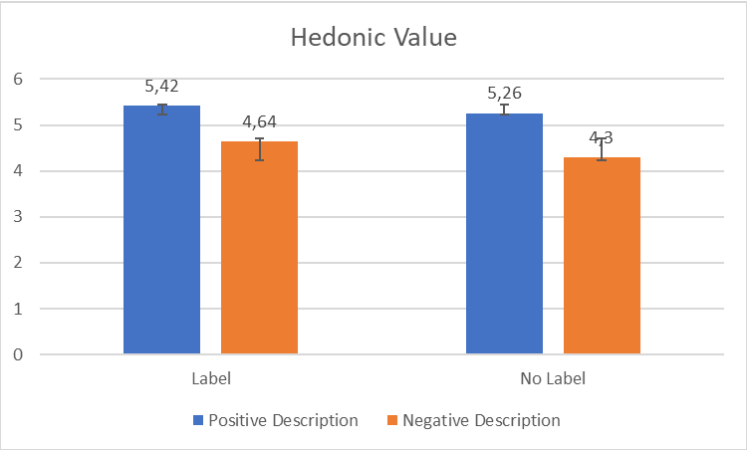
Graph 1. Interaction Description-Cognitive Load

-*Interaction Label-Description.* Interaction was found to be significant (F(1, 123) = 5.048, p = .026, η2 = .039). The difference between positive and negative description is lower when there is the presence of label ($M_{positive}$= 5.16 , $SD_{positive}$= 1.32 ; $M_{negative}$= 4.65, $SD_{negative}$= 1.44) compared to when there is no presence of label ($M_{positive}$= 5.07 , $SD_{positive}$= 1.27 ; $M_{negative}$= 4.24, $SD_{negative}$= 1.27), indicating an additive effect of description and label. The information conveyed in the label is added to the description, therefore the negative description becomes more positive with the addition of the label.

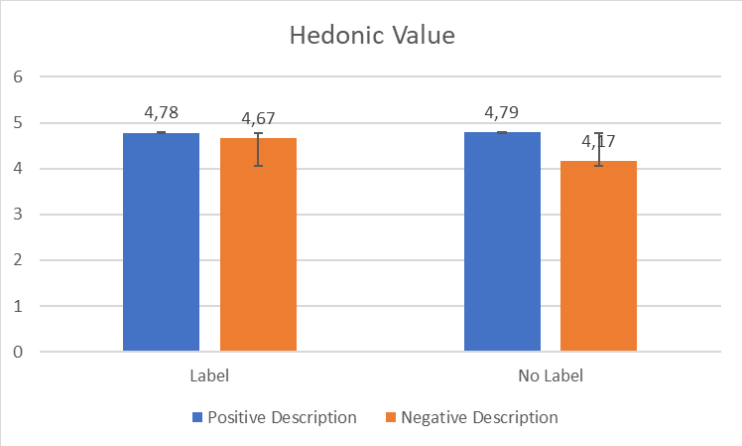


Graph 2. Interaction Label-Description

-Even though the interaction between label, description and cognitive load was not statistically significant (F(1, 123) = 1.129, p = .290, η2 = .009), in the condition of LCL the positive description leads to higher evaluations of hedonic value than the negative description, both when there is no label ($M_{positive}$= 5.26 , $SD_{positive}$= 0.99 ; $M_{negative}$= 4.30 , $SD_{negative}$= 1.29 ; t (73) = 6.236 , p < .001), and when the label is present ($M_{positive}$= 5.42, $SD_{positive}$= 1.05; $M_{negative}$= 4.64, $SD_{negative}$= 1.45; t (73) = 4.792 , p < .001). In conditions of HCL, people infer more hedonic value in products with positive description compared to products with negative description if there is no label ($M_{positive}$= 4.79, $SD_{positive}$= 1.56 ; $M_{negative}$= 4.17, $SD_{negative}$= 1.25 ; t (50) = 2.807 , p = .007), but when the label is present, participants stop inferring such a higher hedonic value in the positive description compared with the negative description ($M_{positive}$= 4.78, $SD_{positive}$= 1.58 ; $M_{negative}$= 4.67, $SD_{negative}$= 1.44 ; t (50) = .605 , p = .548). In other words, the label seems to be contributing more to a favorable evaluation of hedonic value when people are in HCL than when they are in LCL (Graphs 3 and 4). In HCL conditions the judgements of hedonic value seem to be less influenced by the description, and more based on the label. Suggesting that the label is being processed in a more superficial way, meaning it is being used as a heuristic to make inferences of hedonic value about the products.



Graph 3. Low Cognitive Load Condition



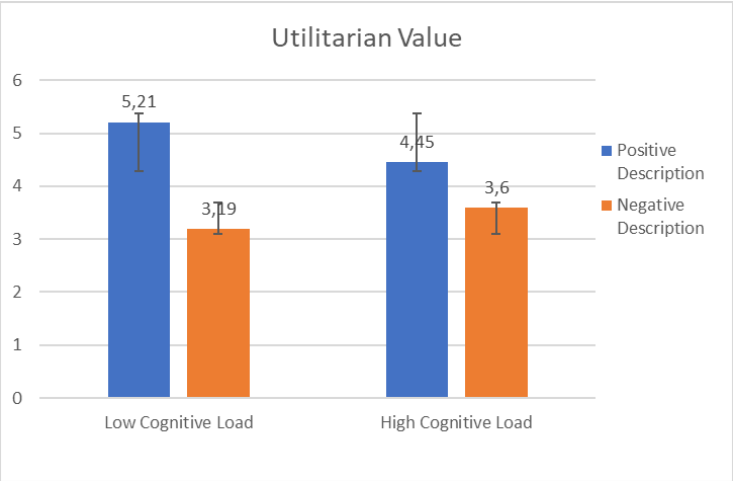
Graph 4. High Cognitive Load Condition

4.6.2 Utilitarian Value

-*Label*. A main effect was found ($F(1, 123) = 30.911$, $p < .001$, $\eta 2 = .201$). The presence of label leads to a higher evaluation of utilitarian value ($M = 4.39$, $SD = 1.52$) compared to the absence of label ($M = 3.87$, $SD = 1.29$).

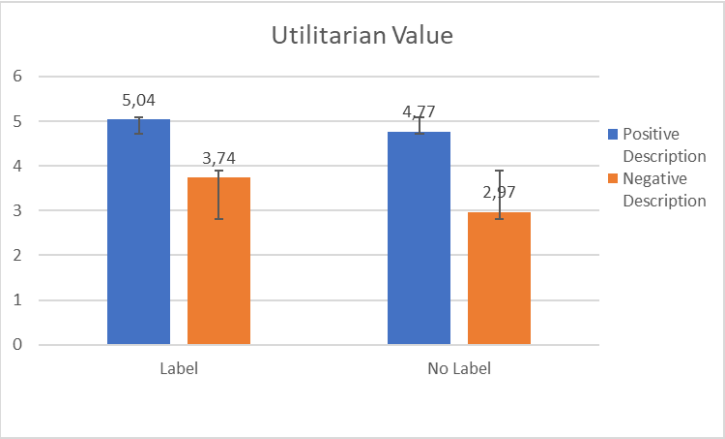
-*Description.* A main effect was found ($F(1, 123) = 136.839$, $p < .001$, $\eta 2 = .527$). The presence of a positive description leads to a higher utilitarian value ($M = 4.90$, $SD = 1.43$) than a negative description ($M = 3.35$, $SD = 1.38$).

-*Interaction Description-Cognitive Load.* Interaction was found to be significant ($F(1, 123) = 22.742$, $p < .001$, $\eta 2 = .156$). The difference between evaluations of utilitarian value between the positive and the negative description is lower when participants are in HCL ($M_{positive} = 4.45$, $SD_{positive} = 1.61$; $M_{negative} = 3.60$, $SD_{negative} = 1.47$) compared to when participants are in LCL ($M_{positive} = 5.21$, $SD_{positive} = 1.20$; $M_{negative} = 3.19$, $SD_{negative} = 1.31$). Which suggests that in HCL they are not processing the description with so much detail and attention, as in the LCL.



Graph 5. Interaction Description-Cognitive Load

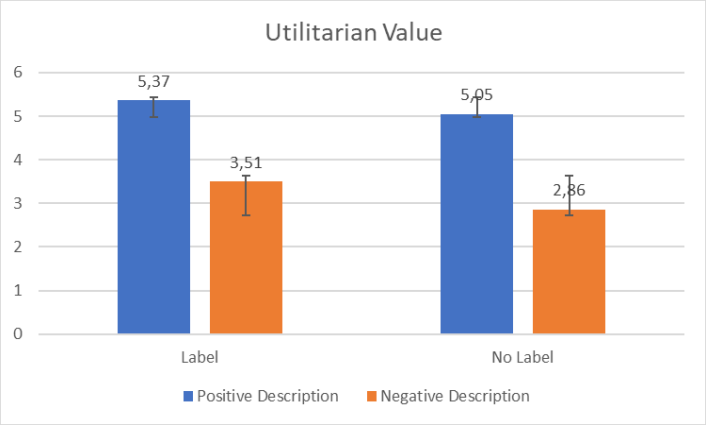
-*Interaction Label-Description.* Interaction was found to be significant ($F(1, 123) = 13.044$, $p < .001$, $\eta 2 = .096$). For the evaluations of utilitarian value, the difference between positive and negative description is lower when there is the presence of label compared to when there is no presence of label.



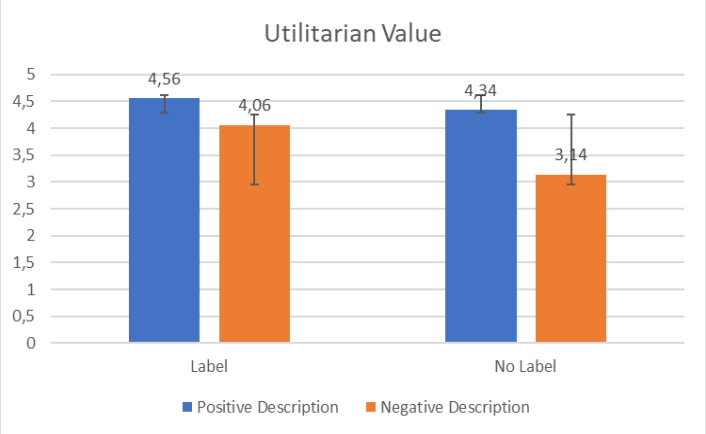
Graph 6. Interaction Label-Description

-Just like in the hedonic value, the interaction between label, description and cognitive load was not significant ($F(1, 123) = 1.622$, $p = .205$, $\eta 2 = .013$). In the condition of LCL the positive description leads to higher evaluations of utilitarian value than the negative description, both when there is no label ($M_{positive} = 5.05$, $SD_{positive} = 1.22$; $M_{negative} = 2.86$, $SD_{negative} = 1.13$; $t(73) = 12.016$, $p < .001$), and when the label is present ($M_{positive} = 5.37$, $SD_{positive} = 1.19$; $M_{negative} = 3.51$, $SD_{negative} = 1.49$; $t(73) = 10.908$, $p < .001$). The same happens in conditions of HCL, people infer more utilitarian value in products with positive description compared to products with negative description both when there is no label ($M_{positive} = 4.34$, $SD_{positive} = 1.48$; $M_{negative} = 3.14$, $SD_{negative} = 1.31$; $t(50) = 5.500$, $p < .001$), and when the label is present ($M_{positive} = 4.56$, $SD_{positive} = 1.73$; $M_{negative} = 4.06$, $SD_{negative} = 1.63$; $t(50) = 2.093$, $p = .041$), but, the difference

between positive and negative description seems to be reduced when label is present in the HCL condition.



Graph 7. Low Cognitive Load Condition



Graph 8. High Cognitive Load Condition

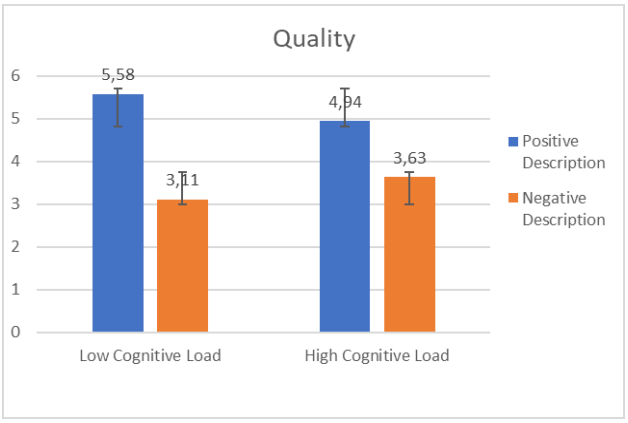
4.6.3 Quality

-*Label.* A main effect was found ($F(1, 123) = 30.423$, $p < .001$, $\eta 2 = .198$). Evaluation of overall quality of the product is higher when the label is present ($M = 4.68$, $SD = 1.65$) compared to when the label is not present ($M = 3.97$, $SD = 1.41$).

-*Description.* A main effect was found ($F(1, 123) = 190.419$, $p < .001$, $\eta 2 = .608$). When the description is positive, evaluations of overall quality are higher ($M = 5.32$, $SD = 1.53$) than when the description is negative ($M = 3.33$, $SD = 1.54$).

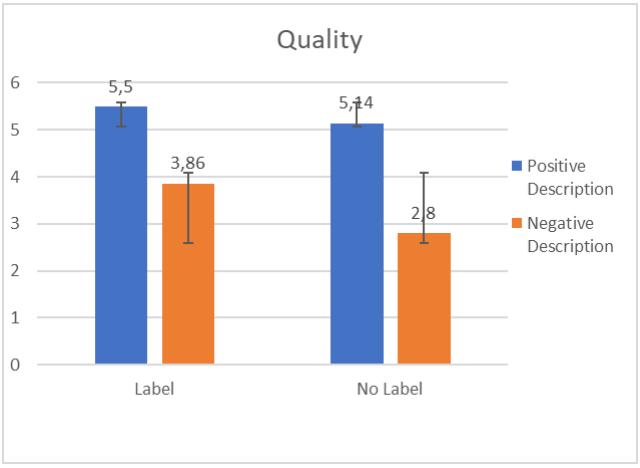
-*Interaction Description-Cognitive Load.* Interaction was found to be significant ($F(1, 123) = 18.098$, $p < .001$, $\eta 2 = .128$). The weight that positive and negative description have on evaluations of overall quality is lower in the HCL condition, compared to the LCL condition. Meaning the difference noticed between the positive and the negative description is lower when

participants are in HCL, this suggests they are processing the description less, and might be relying more on superficial cues like the label, in such condition.



Graph 9. Interaction Description-Cognitive Load

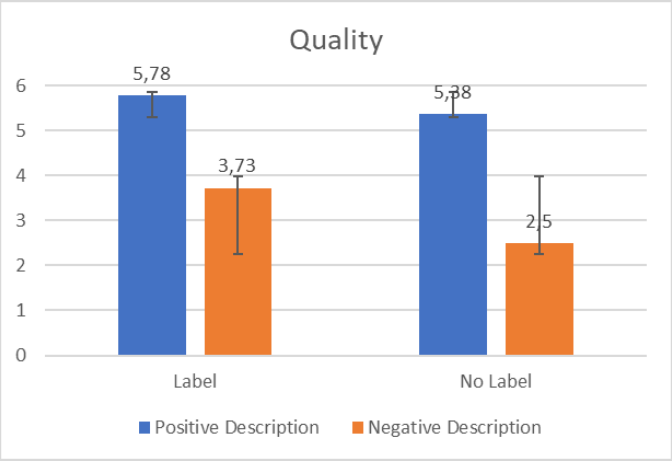
-*Interaction Label-Description.* Interaction was found to be significant ($F(1, 123) = 19.148$, $p < .001$, $\eta 2 = .135$). When the label is present, evaluations of overall quality, both with positive and negative description are higher than when the label is not present.



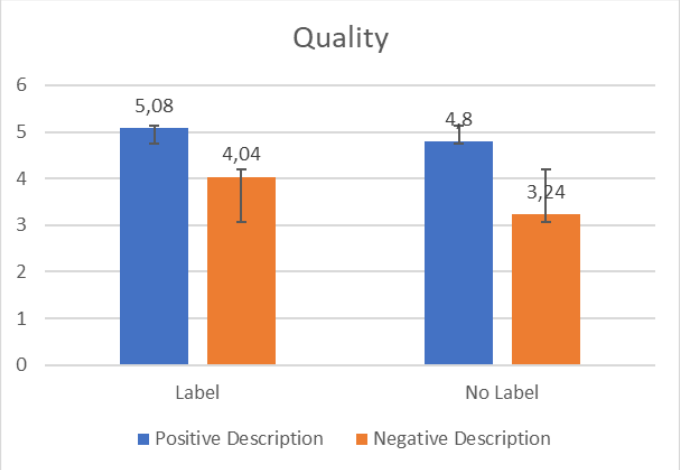
Graph 10. Interaction Label-Description

-For overall quality, the interaction between label, description and cognitive load was found to be not significant ($F(1, 123) = .909$, $p = .342$, $\eta 2 = .007$). Both in conditions of high and low cognitive load, the presence of label leads to higher evaluations of quality. In LCL the positive description leads to higher evaluations of quality than the negative description, both when there is no label ($M_{positive} = 5.38$, $SD_{positive} = 1.08$; $M_{negative} = 2.50$, $SD_{negative} = 1.21$; $t(73) = 2.418$, $p = .018$), and when the label is present ($M_{positive} = 5.78$, $SD_{positive} = 1.26$; $M_{negative} = 3.73$, $SD_{negative} = 1.66$; $t(73) = 10.524$, $p = .000$). The same happens in conditions of HCL, people infer more quality from products with positive description compared to products with negative description both when there is no label ($M_{positive} = 4.80$, $SD_{positive} = 1.84$; $M_{negative} = 3.24$, $SD_{negative} = 1.46$; t

(50) = 6.031 , $p < .001$), and when the label is present ($M_{positive}$= 5.08 , $SD_{positive}$= 1.92 ; $M_{negative}$= 4.04 , $SD_{negative}$= 1.79 ; t (50) = 4.050 , p = .000). However, looking at Graphs 11 and 12, it seems like in HCL, the difference of quality evaluations between positive and negative description is lower than in LCL. It might be that the description is not being processed so much in the HCL, because participants are not able to do it, and they look for other superficial cues to help them make judgments, they might be using the label to help them make judgments of quality of the product, when in HCL.



Graph 11. Low Cognitive Load Condition



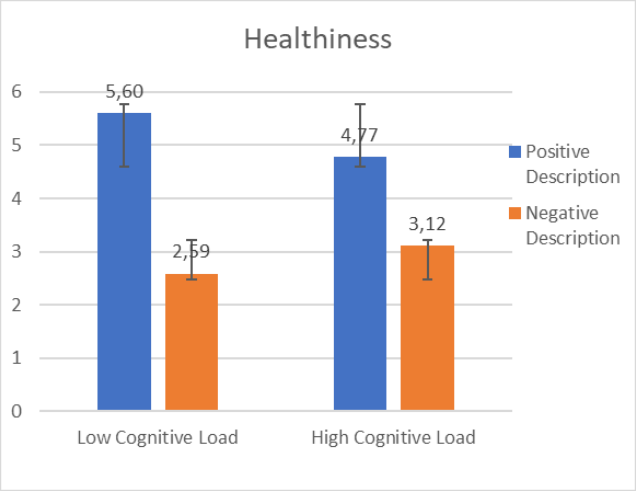
Graph 12. High Cognitive Load Condition

4.6.4 Healthiness

-*Label.* A main effect was found (F(1, 123) = 27.361, $p < .001$, η2 = .182). The evaluations of healthiness are higher when the label is present (M = 4.32, SD = 1.63) compared to when the label is not present (M = 3.75, SD = 1.41).

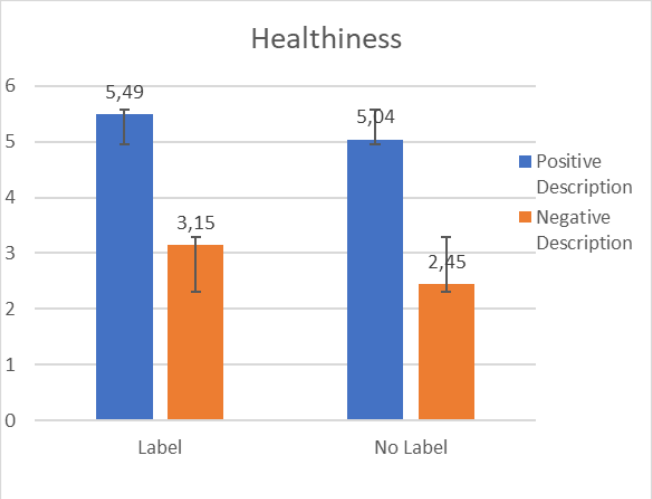
-*Description.* A main effect was found (F(1, 123) = 211.471, p < .001, η2 = .632). The evaluations of healthiness are higher when the description is positive (M = 5.27, SD = 1.65) compared to when the description is negative (M = 2.8, SD = 1.39).

-*Interaction Description-Cognitive Load.* Interaction was found to be significant (F(1, 123) = 17.907, p < .001, η2 = .127). For the HCL condition, the difference between positive and negative description is smaller than for the LCL, which suggests that description is less used to make inferences of healthiness in HCL.



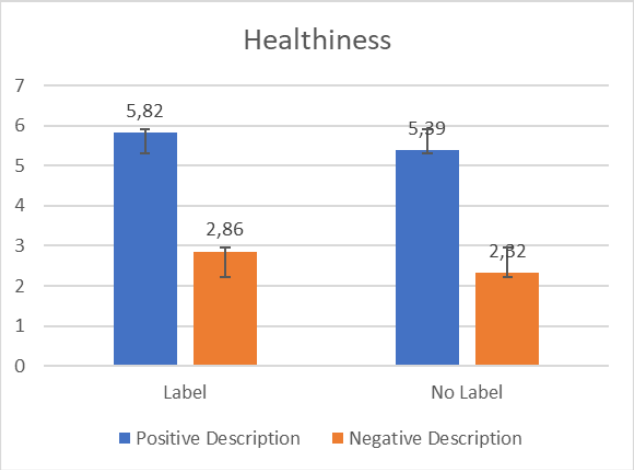
Graph 13. Interaction Description-Cognitive Load

-*Interaction Label-Description.* Interaction was found to be only marginally significant (F(1, 123) = 3.714, p = .056, η2 = .029). Still, it is possible to observe that the difference between positive and negative description is lower when there is the presence of label ($M_{positive}$= 5.49 , $SD_{positive}$ = 1.68 ; $M_{negative}$= 3.15 , $SD_{negative}$= 1.58) compared to when there is no label ($M_{positive}$= 5.04 , $SD_{positive}$= 1.61 ; $M_{negative}$= 2.45 , $SD_{negative}$= 1.20).

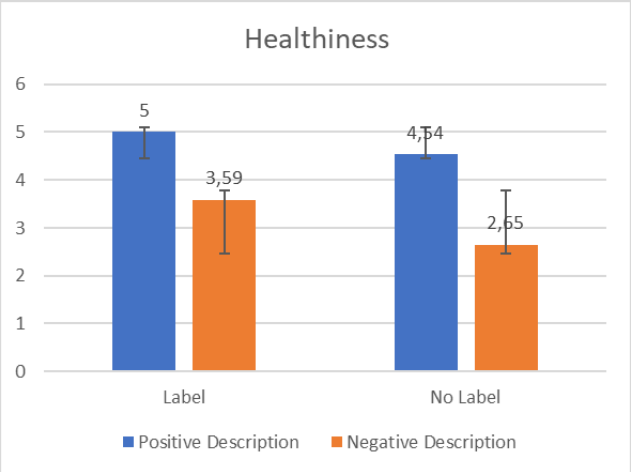


Graph 14. Interaction Label-Description

-The interaction between label, description and cognitive load is not significant (F(1, 123) = 1.371, p = .244, η2 = .011). In LCL conditions the positive description leads to higher evaluations of healthiness than the negative description, both when there is no label ($M_{positive}$= 5.39 , $SD_{positive}$= 1.43 ; $M_{negative}$= 2.32 , $SD_{negative}$= 1.12 ; t (73) = 14,537 , p < .001), and when the label is present ($M_{positive}$= 5.82 , $SD_{positive}$= 1.32 ; $M_{negative}$= 2.86 , $SD_{negative}$= 1.49 ; t (73) = 13.760 , p < .001). The same happens in conditions of HCL, people infer more healthiness from products with positive description compared to products with negative description both when there is no label ($M_{positive}$= 4.54 , $SD_{positive}$= 1.73 ; $M_{negative}$= 2.65 , $SD_{negative}$= 1.30 ; t (50) = 6.497 , p < .001), and when the label is present ($M_{positive}$= 5.00 , $SD_{positive}$= 2.03 ; $M_{negative}$= 3.59 , $SD_{negative}$= 1.63 ; t (50) = 4.725 , p < .001). Nevertheless, by looking at Graphs 15 and 16, it seems like in the LCL condition the difference in evaluations of healthiness between positive and negative description is higher than in the HCL condition. This might be because in the LCL condition people could read and process the description with more attention and the description was directly correlated to healthiness attributes.



Graph 15. Low Cognitive Load Condition



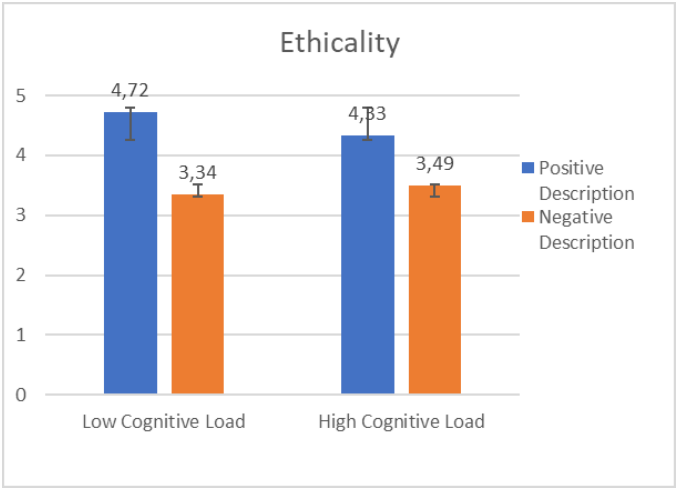
Graph 16. High Cognitive Load Condition

4.6.5 Ethicality

-*Label.* A main effect was found (F(1, 123) = 61.766 , $p < .001$, η2 = .334). When the label is present participants infer more ethicality of the product ($M = 4.81$, $SD = 1.82$) than when the label is not present ($M = 3.15$, $SD = 1.55$).

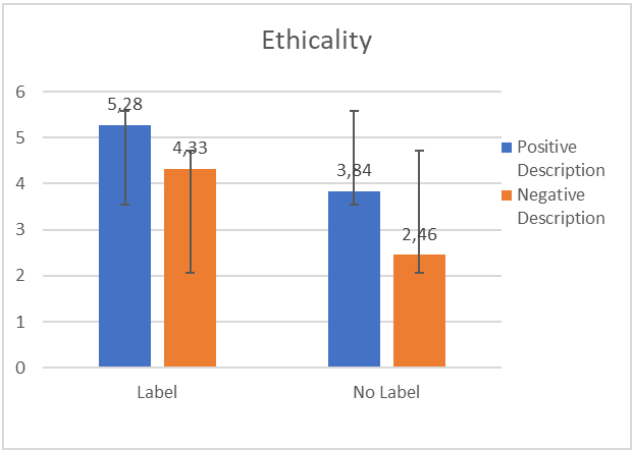
-*Description.* A main effect was found (F(1, 123) = 87.062 , $p < .001$, η2 = .414). When the description is positive ethicality is considered to be higher ($M = 4.56$, $SD = 1.66$) than when the description is negative ($M = 3.40$, $SD = 1.70$).

-*Interaction Description-Cognitive Load.* Interaction was found to be significant (F(1, 123) = 5.117 , $p = .025$, η2 = .040). In the HCL condition the difference in evaluations of ethicality level between positive and negative description is smaller than in the LCL condition. Which suggests that description is being less used to make inferences of ethicality when the person is in HCL. It might be that people are using more the label (which is a label that means ethicality) to make judgements, in conditions of HCL.



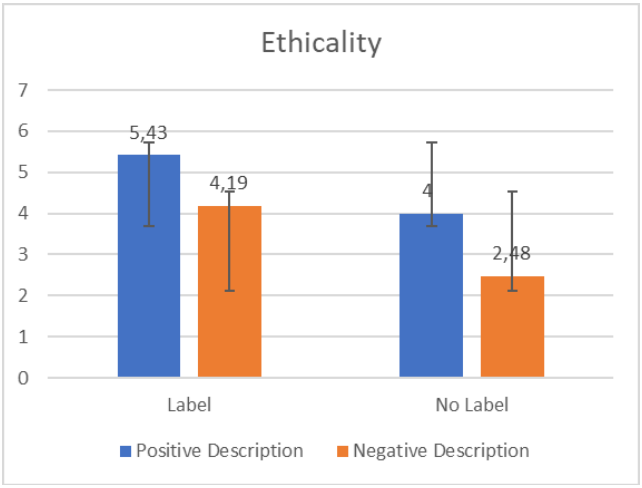
Graph 17. Interaction Description-Cognitive Load

-*Interaction Label-Description*. Interaction was found to be significant (F(1, 123) = 13.644 , $p < .001$, η2 = .100). The presence of label leads to higher evaluations of ethicality both with positive and negative descriptions ($M_{positive}$= 5.28, $SD_{positive}$= 1.66 ; $M_{negative}$= 4.33 , $SD_{negative}$= 1.97) compared to not having label ($M_{positive}$= 3.84 , $SD_{positive}$= 1.66 ; $M_{negative}$= 2.46 , $SD_{negative}$= 1.43). This was expected as the Fairtrade label means ethicality.

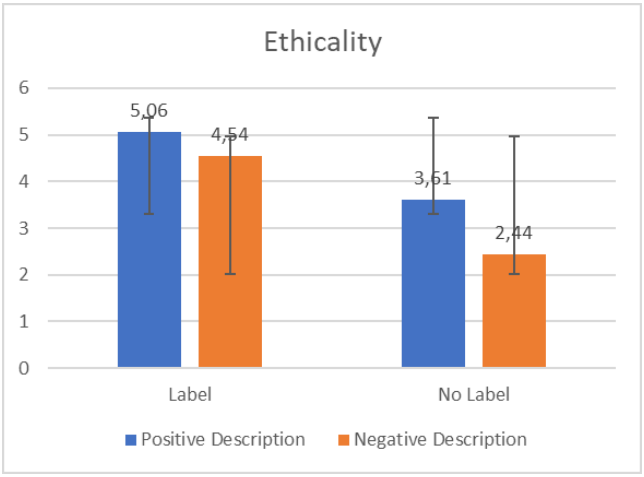


Graph 18. Interaction Label-Description

-The interaction between label, description and cognitive load was found to be not significant ($F(1, 123) = 1.969$, $p = .163$, $\eta 2 = .016$). Still, it is interesting to notice that both in conditions of HCL and LCL there is a significant difference in evaluations of ethicality, between having label and not having label, which seems to suggests that the label is being recognized as ethical independently of the cognitive load, this makes sense as this label implies ethicality.



Graph 19. Low Cognitive Load Condition



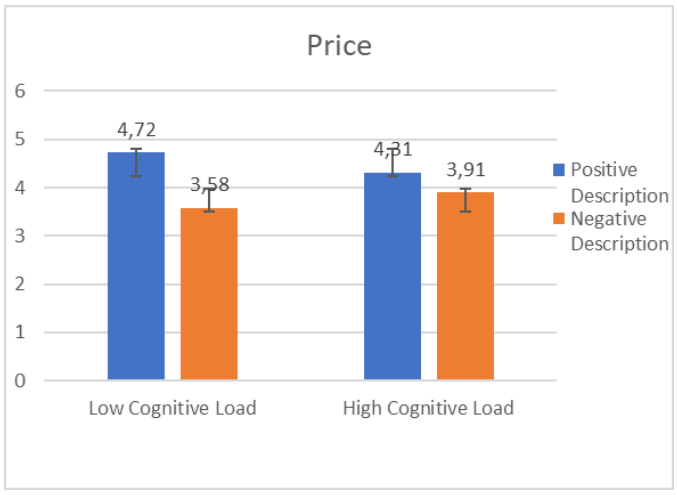
Graph 20. High cognitive Load Condition

4.6.6 Price

-*Label.* A main effect was found (F(1, 123) = 43.275 , $p < .001$, η2 = .260). When the label is present the evaluations of price are higher (M = 4.55, SD = 1.49) than when there is no label (M = 3.72, SD = 1.31). This seems to suggest that people associate the Fairtrade label with a higher price.

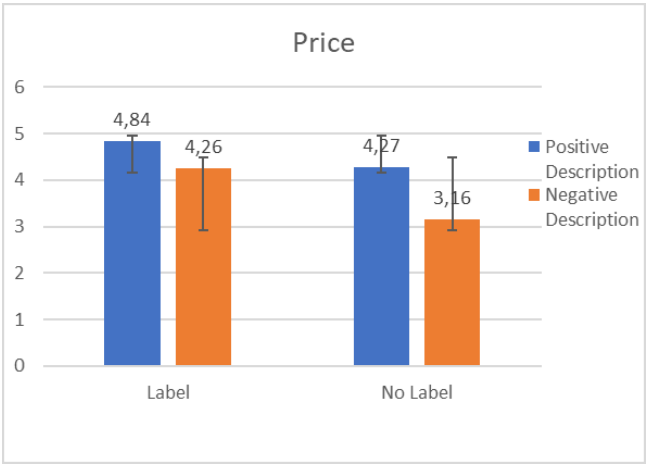
-*Description.* A main effect was found (F(1, 123) = 49.076, $p < .001$, η2 = .285). When description is positive evaluations of price are higher (M = 4.56, SD = 1.43) than when description is negative (M = 3.71, SD = 1.36).

-*Interaction Description-Cognitive Load.* Interaction was found to be significant (F(1, 123) = 11.054 , p = .001, η2 = .082). In HCL conditions, the difference of price perceptions between positive and negative description is smaller than in LCL conditions. This seems to suggest that in HCL participants are processing less the description and using other superficial cues (e.g. SL) to make inferences of price.



Graph 21. Interaction Description-Cognitive Load

-*Interaction Label-Description.* Interaction was found to be significant (F(1, 123) = 17.617 , $p < .001$, η2 = .125). When the label is present, both positive and negative descriptions lead to higher price evaluations ($M_{positive}$= 4.84 , $SD_{positive}$= 1.53 ; $M_{negative}$= 4.26 , $SD_{negative}$= 1.45) compared to when label is not present ($M_{positive}$= 4.27 , $SD_{positive}$= 1.34 ; $M_{negative}$= 3.16 , $SD_{negative}$ = 1.27). This seems to suggest an additive effect of label and description.



Graph 22. Interaction Label-Description

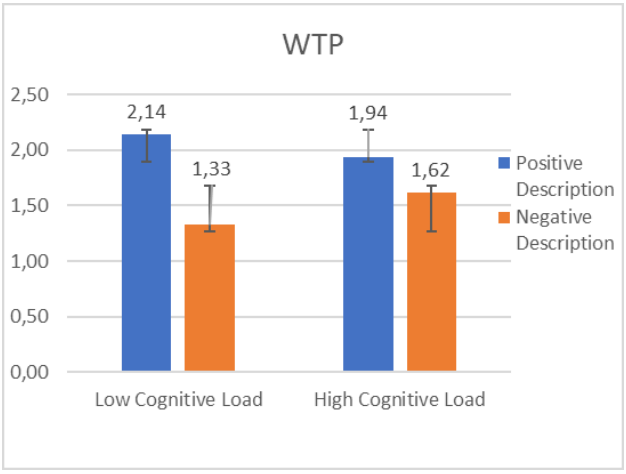
-The interaction of label, description and cognitive load is not significant ($F(1, 123) = 0.054$, $p = .816$, $\eta 2 = .000$). Still, in the HCL condition when the label is present the difference between positive and negative description is smaller ($M_{positive} = 4.63$, $SD_{positive} = 1.56$; $M_{negative} = 4.50$, $SD_{negative} = 1.32$; $t(50) = .610$, $p = .545$) than in LCL ($M_{positive} = 4.99$, $SD_{positive} = 1.49$; $M_{negative} = 4.10$, $SD_{negative} = 1.52$; $t(73) = 5.791$, $p < .001$). This seems to suggest that in HCL participants are less capable of processing the description and are relying on something else to make inferences of price. It might be the case that people feel they can use the superficial cue (SL) to infer price, as they already associate the label with high prices automatically, so they don't process so much the description in this case.

4.6.7 WTP

-*Label.* A main effect was found ($F(1, 123) = 24.429$, $p < .001$, $\eta 2 = .166$). When the label is present WTP is higher ($M = 1.88$, $SD = 0.91$) than when there is no label ($M = 1.64$, $SD = 0.90$).

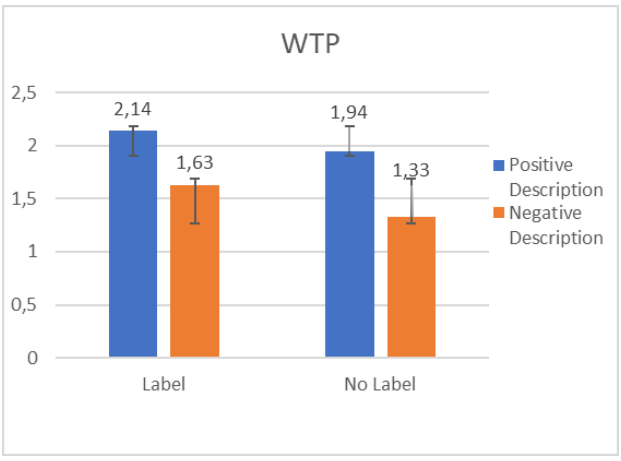
-*Description.* A main effect was found ($F(1, 123) = 81.329$, $p < .001$, $\eta 2 = .398$). When description is positive WTP is higher ($M = 2.04$, $SD = 0.94$) than when description is negative ($M = 1.48$, $SD = 0.87$).

-*Interaction Description-Cognitive Load.* Interaction was found to be significant ($F(1, 123) = 5.839$, $p = .017$, $\eta 2 = .045$). In HCL, the difference between positive and negative description is smaller than in LCL. Which suggests that the description has less weight in inferences of WTP when the person is in HCL.



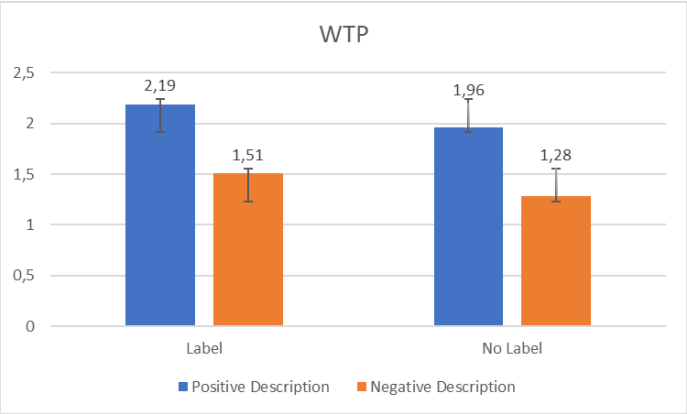
Graph 23. Interaction Description-Cognitive Load

-*Interaction Label-Description*. Interaction was found to be non-significant (F(1, 123) = 2.835 , p = .095 , η2 = .023). Still, when the label is present the WTP is higher both with positive and negative descriptions compared to when the label is not present.

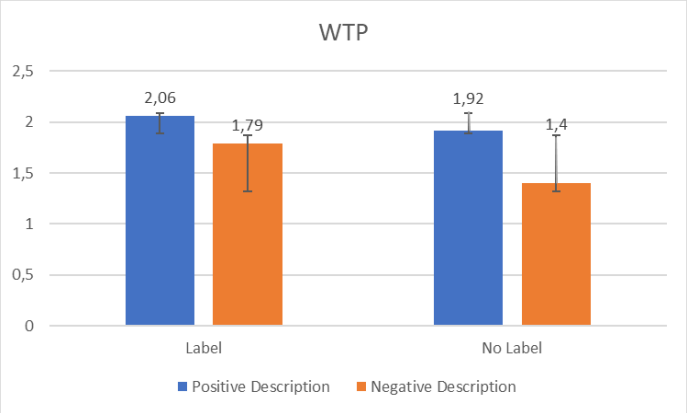


Graph 24. Interaction Label-Description

-The interaction between label, description and cognitive load is not significant (F(1, 123) = 3.040 , p = .084 , η2 = .024). Still, in the condition of HCL, when the label is present the difference between positive and negative description is lower than when the label is not present. While in LCL, when the label is present the difference between positive and negative description is similar to the difference when the label is not present. This seems to suggest that when people cannot process the description in detail (HCL) they rely on other elements, like the sustainability label, to indicate their WTP for the product. The label seems to be associated with a higher WTP.



Graph 25. Low Cognitive Load Condition



Graph 26. High Cognitive Load Condition

Chapter 5: Main Conclusions and Future Research

5.1 Discussion and Findings

In this study we wanted to understand if SLs are used by consumers as heuristics to infer quality, ethicality and price of products carrying those labels (RQ1) and understand under which conditions these inferences are stronger (RQ2).

The results of our study confirmed our hypothesis that SLs influence the inferences made by consumers (H1). When the labels were present participants inferred higher price and higher quality of the products (H1b), meaning that labels led to infer features they were not intended to, which suggests labels were used as heuristics. The fact that the labels were specially used in conditions of HCL also confirmed our hypothesis that SLs can be used as heuristics (H2), because as stated earlier, according to the heuristic-systematic model when the ability to engage in issue relevant thinking is low, heuristic processing will dominate, and simple cues (e.g. SLs) will be more likely to influence judgments. In our study when participants were in the condition of HCL their ability to process information in a systematic way was relatively low, and in these circumstances participants relied on the SLs to make judgments, instead of making the cognitive effort necessary to process other more diagnostic information in detail. On the contrary, in LCL conditions, participants had the ability to engage in a more systematic processing of information. In LCL conditions an additivity effect was also found, as both the description and the label were used together to make inferences about the products.

Additionally, a 'halo effect' (generalization made from one outstanding trait or attribute to form a favorable or unfavorable view of the whole (Thorndike, 1920)), of the description seems to also be present. A positive description (even though it only mentioned attributes related to 'healthiness') leads to a positive perception not only of healthiness but also of attributes of the product like the hedonic value, utilitarian value and quality. In the same way, a negative description (which also only mentions attributes connected to 'healthiness') leads to a more negative perception not only of healthiness of the product, but of all the other attributes as well.

For hedonic value, utilitarian value and quality the pattern found was the same. People tend to infer higher hedonic value, utilitarian value and overall quality of a product, when it carries a SL. As these labels do not directly guarantee more quality, hedonic value (e.g. better taste) or utilitarian value (e.g. more nutritive), it seems like the label is working as a heuristic for these attributes. As people associate Fairtrade or Organic as something positive and have probably

seen previously products carrying the label which have good quality, they now intuitively/automatically infer that a product with this label will have higher quality.

Regarding healthiness, evaluations are always better when the label is present, but this effect is especially true for conditions of HCL, which seems to suggest that when people cannot process more diagnostic information, they rely on the label to make judgments of healthiness of the product. These results confirm our hypothesis that the label is used as a low effort heuristic to infer healthiness. Consumers seem to be inferring that products carrying a SL are healthier products.

For ethicality, the effect of the label was also very strong. The presence of label always led to higher evaluations of ethicality, both with positive and negative descriptions. Also, both in conditions of HCL and LCL there was a significant difference between having a label or not, and the presence of label always led to higher evaluations of ethicality (H1a). It is not surprising that people are making such inferences because this is what the label is supposed to mean.

For price the results were especially interesting as it was possible to see that the label had a strong effect in price perceptions. In the condition of HCL the presence of label always led to perceptions of a higher price of the product, even if the description was negative. So, a product with a negative description but with a SL was perceived as more expensive than a product with a positive description and no label. This seems to indicate that people make a strong association between products carrying SLs and high prices, probably because they have seen before products that carry these labels and are expensive. There seems to be a 'sustainable product-high price' heuristic. WTP also increases when the label is present.

To conclude, it was interesting to observe that the labels always had an effect on the judgments made by people, especially in conditions of HCL, where people were not able to process the description and therefore had to use other more superficial and easier to process cues (e.g. SLs). In LCL conditions, where people were able to process information in a more systematic way, other relevant information (e.g. description) played a more important role, or the label and the description were used in combination. In LCL conditions, people seemed to focus too much on the description, something that in a real-life context does not happen, as people do not have the time to read every information available when buying a product. In real life context it is much more likely that people rely on more superficial cues, like symbols, labels or brands to make quick decisions.

It was also very interesting to see that our hypothesis holds and that consumers are using SLs as heuristics to guide them in their judgments and decision-making processes. These findings were similar to the ones from the study of Chaiken concerning brand names as heuristic cues.

5.2 Academic and Managerial Implications

With the growing concern for sustainability, and with most companies and brands investing in CSR and other sustainable practices, it is important for managers and specially for marketers to understand what are the perceptions of consumers regarding sustainable products and if they make any kind of differentiation between products that bear SLs and products which don't. These labels might be generating product preference in some way but also driving some consumers away from them, for example price sensitive consumers. As our study revealed, there is a strong association between sustainable products and higher prices, and that might be a reason for the low penetration of these kinds of products. The truth is nowadays it is possible to find Organic and Fairtrade products at more accessible prices (e.g. many private labels now offer these products), but because of the previous associations that people made between these products and high prices (which used to be always true) they do not even consider adding these products to their shopping carts. This heuristic of 'sustainable products-high prices' needs to be addressed by marketers if they want to attract less niche consumers (e.g. price sensitive consumers). These products need to be advertised in a different way, because even if they are slightly more expensive than regular products, they offer advantages which people recognize (e.g. usually healthier, less harmful to the environment, better conditions for farmers and producers), so people might be willing to pay a premium for these products, the problem is people think this 'premium' is very high, which is not always the case. A specific example of Fairtrade bananas can be used, when a regular consumer sees Fairtrade bananas in its regular supermarket he won't even consider them and will look away and proceed to get his regular bananas because he thinks the Fairtrade ones are much more expensive and he does not have the resources (e.g. he is time pressured, tired or stressed) to process all the information in detail (e.g. price). But truth is nowadays these bananas cost maybe 2 cents more each, and if the consumer did not have the heuristic of high price associated with this type of products he might consider them.

Additionally, these labels are not recognized by all consumers, some do not notice it at all, and others have seen it before but do not really know its meaning. For these problems two solutions can be implemented: an initial one of educating the consumers, by having awareness campaigns related to SLs, and a second one which would be to make sure the labels used are clear, visible,

and easily recognized by the consumers. Regarding the first one it would be important to educate consumers about the meaning behind each label so that they could associate them with their positive attributes, and reduce the negative associations that exist between the labels and the products (e.g. the association with high prices). Regarding the second one, ideally the labels used should be coherent across all brands and retailers, in order to simplify and generate less confusion among consumers. If each brand decides to use a different label/certification it will be very hard for consumers to distinguish them in the fast-paced shopping environment we find nowadays in most retailers.

These are actions that require investment but that can benefit both retailers and brands. If brands and retailers are investing in having the sustainable certification then it is essential that consumers can recognize and understand them, to then make purchasing decisions based on it. In the specific case of Fairtrade, everyone involved in the production process, including the farmers and producers in developing countries, gain if more Fairtrade products are chosen instead of regular ones.

The present study also adds to previous research regarding the application of the heuristic-systematic model. Our study showed that SLs effects are heuristically mediated, and that people's tendency to rely on SLs to make product evaluations reflect their use of simple heuristics like "if the product has a SL, it has good quality". The study also confirmed that this happens mostly in situations where the ability to engage in systematic processing is low.

5.3 Limitations and Future Research

Unfortunately, it was not possible to find a statistically significant interaction between label and cognitive load for any of the attributes tested. Even though it was possible to see differences in the inferences made between low and high cognitive load conditions, the difference in importance given to the label was not significantly different between one condition and the other. Ideally, we would have liked to see a bigger difference between conditions.

Something that happened and which we didn't predict was the fact that the description ended up being too salient, in some cases it dominated the evaluations that people made of the products, causing a halo effect. Everything was seen as more positive when the product had a positive description, and less positive when the product had a negative description. In a real-life setting it is not very likely that description would have the weight it had on this study, as people don't usually process this amount of information in their daily life. This opens the possibility to repeat the study without the use of a description, testing just the presence of label

vs no label, in HCL and LCL conditions. Yet, other quality cues are likely to be present in a real-life setting, so it would also be interesting to explore how other heuristic cues (e.g. brand) would interact with SLs.

Another future research possibility is to do this study manipulating task importance and motivation instead of cognitive load (Maheswaran & Sternthal, 1990; Chaiken et al., 1992). This is a common manipulation in this type of experiments and could show good results. In that case it would be expected that people who are told that the task is very important, would put more effort into it and therefore would read and process every information available carefully (this group would be expected to base their answers more on the description, not relying so much on the label), while the low task importance group would probably not make the effort to read the description and would do a more superficial analysis of the product, relying on superficial salient aspects like the SL.

Additionally, it would be interesting to repeat this study with other food product categories (e.g. chocolate) or replicate it for completely different categories like shoes or clothes and focus on testing the quality perceptions associated with these products when they feature the presence of a SL or tag (e.g. EU-Ecolabel, H&M Conscious Collection).

Finally, we would have liked to have a bigger and more diversified sample for analysis to further test the reach and applicability of the results found.

Appendices

Appendix A: Qualtrics Survey Pre-Test

Section 1: Brand Familiarity

Q1

	Not at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Extremely familiarized 7 (7)
How familiarized are you with this brand? (1)	○	○	○	○	○	○	○

Section 2: Products' Evaluation

Q2 Please consider the product below and rate your level of agreement with the following sentences.

	Do not agree at alll 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally agree 7 (7)
This product has high quality (1)	○	○	○	○	○	○	○
This product seems to taste good (2)	○	○	○	○	○	○	○
I would like to try this product (3)	○	○	○	○	○	○	○
I like this flavor very much (4)	○	○	○	○	○	○	○
This packaging is very attractive (5)	○	○	○	○	○	○	○
This product is environmentally friendly (6)	○	○	○	○	○	○	○
This product is socially responsible (7)	○	○	○	○	○	○	○

Q3 Please consider the product below and rate your level of agreement with the following sentences.

	Do not agree at alll 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally agree 7 (7)
This product has high quality (1)	○	○	○	○	○	○	○
This product seems to taste good (2)	○	○	○	○	○	○	○
I would like to try this product (3)	○	○	○	○	○	○	○
I like this flavor very much (4)	○	○	○	○	○	○	○
This packaging is very attractive (5)	○	○	○	○	○	○	○
This product is environmentally friendly (6)	○	○	○	○	○	○	○
This product is socially responsible (7)	○	○	○	○	○	○	○

Q4 Please consider the product below and rate your level of agreement with the following sentences.

	Do not agree at alll 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally agree 7 (7)
This product has high quality (1)	○	○	○	○	○	○	○
This product seems to taste good (2)	○	○	○	○	○	○	○
I would like to try this product (3)	○	○	○	○	○	○	○
I like this flavor very much (4)	○	○	○	○	○	○	○
This packaging is very attractive (5)	○	○	○	○	○	○	○
This product is environmentally friendly (6)	○	○	○	○	○	○	○
This product is socially responsible (7)	○	○	○	○	○	○	○

Q5 Please consider the product below and rate your level of agreement with the following sentences.

	Do not agree at alll 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally agree 7 (7)
This product has high quality (1)	○	○	○	○	○	○	○
This product seems to taste good (2)	○	○	○	○	○	○	○
I would like to try this product (3)	○	○	○	○	○	○	○
I like this flavor very much (4)	○	○	○	○	○	○	○
This packaging is very attractive (5)	○	○	○	○	○	○	○
This product is environmentally friendly (6)	○	○	○	○	○	○	○
This product is socially responsible (7)	○	○	○	○	○	○	○

Appendix B: Qualtrics Survey Main Study

(Survey Example: Version 1 - High Cognitive Load)

General Introduction:

Dear Participant,

First of all, thank you for taking the time to participate in this study.

My name is Catarina Silva and the following survey was developed within the scope of my final Dissertation at Católica-Lisbon SBE. The goal of this study is to assess individuals' memory (capacity and limitations).

I really appreciate your honesty when answering these questions since they are all extremely important for the study. Please note that there are no right or wrong answers and that all responses will be kept confidential, anonymous and used only for academic purposes.

The survey will take approximately 5 to 7 minutes.

Thank you once again for your time and collaboration. In case you have any further questions, please contact me at: catarina.rs95@gmail.com (Catarina Ribeiro da Silva).

By moving forward, you agree to voluntarily participate in this study.

Section 1: Introduction High Cognitive Load

As stated before, in this survey we will be testing your memory.

You will be presented with 9-digit numbers that you have to keep in mind and recall later on.

Research has shown that one way to help memory is through mental rehearsal. We suggest you to keep rehearsing the number in your mind until we ask you to recall it.

After the presentation of each number, you will be presented with a series of tasks that might distract you and make your rehearsing more challenging.

The tasks will consist on seeing and evaluating several products. Try to answer these questions but remember that memorizing the number is your main task here.

After answering the questions associated to each product you will be asked to recall the 9-digit number you were memorizing. Please do not write this number anywhere! It’s really important that you try to memorize it without writing it down, if you do write it down, the whole survey

will lose its purpose and we will not be able to be successful in our study. So please keep rehearsing the 9-digit number.

Move forward to see the first number you have to memorize.

Section 2: Evaluation of first product

Q1 Please take a few seconds to memorize the following number and move forward when you think you are ready:

450318544

Q2 Below you will see a picture of a product that is being introduced in the market, and after you will be asked to evaluate it:

100% natural fruit juice, no additives. No artificial colors or preservatives. No artificial flavors. Rich in vitamins and minerals. Low in calories. No added sugars. (*Only contains natural sugars from the fruit). Energy per 100ml: 18kcal. Total sugars per 100ml: 5g*

Q3 What is the likelihood of this product containing the following characteristics:

	Not at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally 7 (7)
It provides enjoyment (1)	○	○	○	○	○	○	○
It's tasty (2)	○	○	○	○	○	○	○
It's nutritive (3)	○	○	○	○	○	○	○
It's useful (4)	○	○	○	○	○	○	○
It's healthy (5)	○	○	○	○	○	○	○
It's not artificially flavored (6)	○	○	○	○	○	○	○
It does not contain preservatives (7)	○	○	○	○	○	○	○
It's safe (8)	○	○	○	○	○	○	○
It has quality (9)	○	○	○	○	○	○	○
It is socially responsible (10)	○	○	○	○	○	○	○
It is environmental friendly (11)	○	○	○	○	○	○	○
It respects moral norms (12)	○	○	○	○	○	○	○
It is expensive (13)	○	○	○	○	○	○	○
It has a high price (14)	○	○	○	○	○	○	○

Q4 What would be the price you would be willing to pay for this product (€)?

_____

Q5 Please write down the number you were asked to memorize:

_____

Section 3: Evaluation of second product

Q6 Please take a few seconds to memorize the following number and move forward when you think you are ready:

570385633

Q7 Below you will see a picture of a product that is being introduced in the market, and after you will be asked to evaluate it:

100% natural fruit juice, no additives. No artificial colors or preservatives. No artificial flavors. Rich in vitamins and minerals. Low in calories. No added sugars. (*Only contains natural sugars from the fruit). Energy per 100ml: 18kcal. Total sugars per 100ml: 5g*

Q8 What is the likelihood of this product containing the following characteristics:

	Not at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally 7 (7)
It provides enjoyment (1)	○	○	○	○	○	○	○
It's tasty (2)	○	○	○	○	○	○	○
It's nutritive (3)	○	○	○	○	○	○	○
It's useful (4)	○	○	○	○	○	○	○
It's healthy (5)	○	○	○	○	○	○	○
It's not artificially flavored (6)	○	○	○	○	○	○	○
It does not contain preservatives (7)	○	○	○	○	○	○	○
It's safe (8)	○	○	○	○	○	○	○
It has quality (9)	○	○	○	○	○	○	○
It is socially responsible (10)	○	○	○	○	○	○	○
It is environmental friendly (11)	○	○	○	○	○	○	○
It respects moral norms (12)	○	○	○	○	○	○	○
It is expensive (13)	○	○	○	○	○	○	○
It has a high price (14)	○	○	○	○	○	○	○

Q9 What would be the price you would be willing to pay for this product (€)?

_____

Q10 Please write down the number you were asked to memorize:

_____

Section 4: Evaluation of third product

Q11 Please take a few seconds to memorize the following number and move forward when you think you are ready:

728460188

Q12 Below you will see a picture of a product that is being introduced in the market, and after you will be asked to evaluate it:

Blend of fruit juices/purées from concentrate with added ingredients. Contains artificial colors (E110, E122, E142) and preservatives (sodium benzoate). With artificial flavors. Low in vitamins and minerals. Not a reduced calorie food. Contains sucralose (E955). Energy per 100ml: 46kcal. Total sugars per 100ml: 25g

Q13 What is the likelihood of this product containing the following characteristics:

	Not at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally 7 (7)
It provides enjoyment (1)	○	○	○	○	○	○	○
It's tasty (2)	○	○	○	○	○	○	○
It's nutritive (3)	○	○	○	○	○	○	○
It's useful (4)	○	○	○	○	○	○	○
It's healthy (5)	○	○	○	○	○	○	○
It's not artificially flavored (6)	○	○	○	○	○	○	○
It does not contain preservatives (7)	○	○	○	○	○	○	○
It's safe (8)	○	○	○	○	○	○	○
It has quality (9)	○	○	○	○	○	○	○
It is socially responsible (10)	○	○	○	○	○	○	○
It is environmental friendly (11)	○	○	○	○	○	○	○
It respects moral norms (12)	○	○	○	○	○	○	○
It is expensive (13)	○	○	○	○	○	○	○
It has a high price (14)	○	○	○	○	○	○	○

Q14 What would be the price you would be willing to pay for this product (€)?

_____

Q15 Please write down the number you were asked to memorize:

_____

Section 5: Evaluation of fourth product

Q16 Please take a few seconds to memorize the following number and move forward when you think you are ready:

653071955

Q17 Below you will see a picture of a product that is being introduced in the market, and after you will be asked to evaluate it:

Blend of fruit juices/purées from concentrate with added ingredients. Contains artificial colors (E110, E122, E142) and preservatives (sodium benzoate). With artificial flavors. Low in vitamins and minerals. Not a reduced calorie food. Contains sucralose (E955). Energy per 100ml: 46kcal. Total sugars per 100ml: 25g

Q18 What is the likelihood of this product containing the following characteristics:

	Not at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally 7 (7)
It provides enjoyment (1)	○	○	○	○	○	○	○
It's tasty (2)	○	○	○	○	○	○	○
It's nutritive (3)	○	○	○	○	○	○	○
It's useful (4)	○	○	○	○	○	○	○
It's healthy (5)	○	○	○	○	○	○	○
It's not artificially flavored (6)	○	○	○	○	○	○	○
It does not contain preservatives (7)	○	○	○	○	○	○	○
It's safe (8)	○	○	○	○	○	○	○
It has quality (9)	○	○	○	○	○	○	○
It is socially responsible (10)	○	○	○	○	○	○	○
It is environmental friendly (11)	○	○	○	○	○	○	○
It respects moral norms (12)	○	○	○	○	○	○	○
It is expensive (13)	○	○	○	○	○	○	○
It has a high price (14)	○	○	○	○	○	○	○

Q19 What would be the price you would be willing to pay for this product (€)?

_____

Q20 Please write down the number you were asked to memorize:

_____

Section 6: Control Load Question

Q21

	Do not agree at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Completely Agree 7 (7)
Remembering the numbers took a lot of my energy (1)	○	○	○	○	○	○	○

Section 7: Sustainability labels familiarity

Q22 Please indicate your level of agreement with the following statements:

	Do not agree at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally Agree 7 (7)
I am familiar with this label (1)	○	○	○	○	○	○	○
I am confident that I totally understand what this label means (2)	○	○	○	○	○	○	○
This label represents Fairtrade products (3)	○	○	○	○	○	○	○
This label represents Organic products (4)	○	○	○	○	○	○	○

Q23 Please indicate your level of agreement with the following statements:

	Do not agree at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally Agree 7 (7)
I am familiar with this label (1)	○	○	○	○	○	○	○
I am confident that I totally understand what this label means (2)	○	○	○	○	○	○	○
This label represents Fairtrade products (3)	○	○	○	○	○	○	○
This label represents Organic products (4)	○	○	○	○	○	○	○

You are almost done! I just need some last information about you.

Section 8: Demographics

Q24 Are you Portuguese?

○ Yes (1)

○ No (2)

Q25 Gender:

- ○ Male (1)
- ○ Female (2)
- ○ Other (3)
- ○ Prefer not to say (4)

Q26 Age:

_____

Q27 What is your occupation?

- ○ Student (1)
- ○ Employed (2)
- ○ Unemployed (3)
- ○ Retired (4)

Appendix C: Materials used in the study

C1.Orange Juice (left: sustainability label version; right: no sustainability label version)

C2. Mango and fruit blend Juice (left: sustainability label version; right: no sustainability label version)

C3. Strawberry and fruit blend Juice (left: sustainability label version; right: no sustainability label version)

C4. Green fruit blend Juice (left: sustainability label version; right: no sustainability label version)

Appendix D: Sustainability labels used in the study

D1. Fairtrade label

D2. Organic label

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