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Chair of Consumer Behavior

Comparison of different eco-label formats in the dairy sector. Consumer perceptions and purchase intention for a new meta-sustainability label versus a combination of eco-labels.

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Abstract

Millions of customers globally, in response to the growing environmental challenges, are adopting more sustainable consumption patterns and expect companies to switch to more eco-friendly production methods as well as to communicate their green efforts transparently and effectively.

To this end, one possible communication tool that companies have been using for some years, especially in the food sector, are eco-labels: voluntary labels placed on product packaging to facilitate the identification of products that meet specific environmental performance criteria (European Commission, 2022; Taufique et al., 2014; US EPA, 2014).

To date, however, the market share of eco-labeled food products is very low, currently between one and five percent, in Europe, and the main reasons for the limited effectiveness of these communication tools are the lack of sufficient information about eco-labels and the certification process, and the lack of recognition, due to overcrowding: currently 457 eco-labels in 199 countries are monitored by the Eco-label Index, the largest global directory of eco-labels (Marrucci et al., 2021; Precedence Research, 2022; Rex & Baumann, 2007; Yokessa & Marette, 2019).

To address these issues, this study proposed the introduction of a unique label, the Meta-label, which summarizes information related to multiple sustainability attributes and eco-labels. Specifically, the following research question was investigated, "Do consumers express greater purchase intention (in terms of willingness to buy and willingness to pay) for a combination of eco-labels related to multiple sustainability attributes (environmental and social) or for a single meta-label, related to the same attributes?".

To answer this question, after selecting the most used eco-labels through a preliminary study, an online survey was conducted, in which respondents were shown two versions of a milk package: half of the respondents saw a combination of 4 eco-labels on it and the other a meta-label. Then questions were asked concerning mainly the liking and understanding of the stimuli (visual processing fluency) and the purchase intention. Results showed that customers had a better understanding and a higher purchase intention for the meta-label, therefore it is recommended to firms in the dairy sector to move towards a unique composite certification, on the example of

Granarolo's logo, Bontà Responsabile, but through a clear format, like the one adopted in this research. Future research could deepen the topic by integrating quantitative and qualitative research tools (in-depth interviews, focus groups, etc.), as well as neuromarketing tools such as eye-tracking, to measure, through field research in supermarkets, consumers' response to the meta-label (e.g., which aspects of the meta-label capture the most interest among consumers).

Chapter 1

1.1 THE LIMITED PURCHASE OF ECO-LABELLED PRODUCTS

The call to reduce the environmental impact of resource consumption and utilise resources more efficiently, while staying within the Earth's boundaries, is more pressing than ever, with agriculture accounting for one third of the total greenhouse emissions (Crippa et al., 2021).

As a response to the complex interplay between environmental, social, and economic challenges, the UN General Assembly adopted the 2030 Agenda in September 2015. To achieve Agenda 2030 17 SDGs, including "Responsible Consumption and Production" (SDG 12), is impellent that all parties contribute: International and National Institutions, as well as firms and civil society (Ferreira & Fernandes, 2022).

On the demand side, global consumers are gradually shifting towards more conscious behaviours and expect firms to simplify the process of identifying sustainable products. Indeed, during a 2021 Mastercard Global study conducted across 24 countries, 85% of the respondents said they're willing to take personal action to combat environmental and sustainability challenges (In Italy 95% of the respondents). In particular changes in global attitudes and actions have increased more rapidly as a direct result of the COVID-19 pandemic, also thanks to the role of digital media in educating consumers about climate change and environmental issues (Mastercard, 2021).

Given the pivotal role played by environmental and social issues, it is no surprise that customers prefer companies prioritizing corporate and social responsibility and able to communicate their efforts in the green sector in an effective and transparent way (Butler, 2018). This second objective can be achieved using eco-labels, which are, according to the definition of the USA EPA, voluntary marks placed on product packaging or in catalogues that reduce consumers' search costs, making it easy to identify products meeting specific environmental performance criteria. Eco-labels can be sponsored by NGOs, governments, or industry associations and can be single-attribute or multi-attribute, depending on weather they focus on a single lifecycle stage or on the entire lifecycle (manufacture, use, maintenance, disposal) of a product or service. In particular, according to the Global Eco-labelling Network (GEN), the most credible eco-labels are based on

the Life Cycle Assessment and quantify the environmental impact of a product through its entire lifecycle (European Commission, 2022; Taufique et al., 2014; US EPA, 2014).

In particular, food labelling is increasingly used globally, with a number of different nutrition, environmental and social responsibility labelling schemes in existence (European Commission, 2023a; Tobi et al., 2019).

Despite the importance of sustainable issues and the interest shown by consumers in this regard, which has emerged from previous research, to date the effectiveness of eco-labels in promoting sustainable consumer behaviour and actual purchases of green products is limited and is therefore the subject of many studies (Iraldo et al., 2020; Rex & Baumann, 2007).

These difficulties are evident by comparing the growth of the market for green products with the market share of eco-labelled products. The global green market is currently valued at 61 billion US dollars and is expected to more than double by 2026, also thanks to the increased concern in health and environment shown by customers in the post pandemic world, especially in the food sector (Precedence Research, 2022; Sajid et al., 2022).

In a 2021 study conducted by NielsenIQ, 78 percent of global consumers expressed interest in leading a healthier lifestyle and 72 percent emphasized the importance of companies providing access to healthier foods (NielsenIQ, 2021). Notably, this consumer interest in sustainable food systems is accompanied by substantial growth in market share, especially in the organic food market[1].

Indeed by 2029 the worldwide market for organic foods will increase from $157.48 billion in 2022 to $366.66 billion in 2029, at a CAGR of 12.83%, with North America and Europe accounting for 96% of global sales of ecological products (Fortune Business Insights, 2022; Łopacińska et al., 2022). While these data on the growth of the global green market , especially in the organic food sector, denote an increased consumer and industry interest in sustainable issues, the market share of eco-labelled food products in Europe is currently very low, between 1 and 5 percent, indicating the ineffectiveness of eco-labels as a tool for communicating a company's sustainable commitment (Rex & Baumann, 2007; Yokessa & Marette, 2019).

This issue also emerged in a study conducted by Deloitte in 2022 on a sample of 2,000 UK citizens. In fact, while participants showed that they had adopted more responsible behaviours in the previous year by, for example, recycling products (75%) when asked to define a sustainable product, 65% associated it with being biodegradable while only 27% connected it with having an

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[1] The term organic refers to foods produced without artificial chemicals, such us fertilizers or GMO and encompasses a wide variety of food categories, such as dairy products, vegetables or fruit (Rana & Paul, 2017).

environmental or ethical eco-label. In addition, half of the respondents claimed that the product feature that influences them the most when purchasing is durability, while only 18 percent of respondents are also influenced by the presence of eco-labels (Archer et al., 2022).

A similar trend was evident in a second study conducted by the same company the following year in the Netherlands, where 74 percent of consumers reported actively seeking information on sustainable issues, preferring the Internet (50 percent) as a source of information. Only 18 percent stated that they rely on the brand to communicate information about the product's environmental impact, with an even lower percentage of people considering such information reliable. These data then logically translated into a very low percentage of consumers willing to pay a premium for eco-labelled products and at a rather low premium, with 33% of consumers willing to pay only 5% and only 13% of consumers willing to pay a premium of 10%.

Therefore, preference for other product characteristics (e.g., durability) and brand credibility are the two main critical issues related to eco-labels highlighted in these two surveys (Deloitte, 2023). Another study conducted in Spain in 2021 showed that the majority of consumers (around 60%) are mainly driven by selfish motives, such as price, during their purchasing decisions, while only a limited percentage (23,3%) are willing to read sustainable labels and buy related products, as they are more interested in the impact of their purchases (Grymshi et al., 2022).

Other factors that influence consumers in the purchase of eco-labelled food products are product type, kind of message/dimension of sustainability being studied, format (text, logo, both), gender and level of education. These were studied in a meta-analysis conducted in 2021 in UK on a sample of 40 k respondents who were interviewed in person or given a questionnaire, administered either live, in stores or supermarkets, or on online platforms. The results of the research have identified a willingness to pay an average premium for eco-labelled products of PPP $3.79/kg, expressed in Purchasing Power Parity, with a clear preference for dairy and meat, for which respondents were willing to pay up to PPP $9.24/kg. These figures are indicative, as they refer to willingness to pay, not actual purchases, and thus represent more of a maximum threshold (Bastounis et al., 2021).

In terms of consumer choice, another systematic review conducted in 2021 in the food sector found that the presence of eco-labels had a positive effect on the selection, purchase, and consumption of corresponding products. Again, the results have to be taken consciously , since 41 out of 56 of the studies were conducted in hypothetical settings, witout real money transfer (Potter et al., 2021).

For more precise estimation of actual consumer purchases, some studies, for the moment rather limited, conducted in real world settings are more reliable. For example, a study conducted in the U.K. in 2022 in 38 worksite cafeterias over a period of about 4 months investigated whether the presence of an eco-label alongside each menu choice could influence consumer's decisions. For

the design of the eco-label, four environmental indicators were chosen, then summarized into a single environmental score, which was then used to rank foods from most sustainable, with score A, to least sustainable, with score E. The results from the 28 cafeterias that actually completed the study showed that the presence of eco-label on the menu did not influence consumers' purchasing decisions (Pechey et al., 2022).

Similar results were previously obtained from a 2016 study in Sweden across 17 retail stores that tested if labels reporting the carbon footprint significantly impacted the demand for milk. The results showed that consumers were willing to pay a premium of between six and eight percent for a pack of milk with a label on the carbon impact, however, the effect was not significant as it was short-lived and predominantly due to the impact of a few large supermarkets (20 percent of total scores) that impacted total sales by 80 percent (Elofsson et al., 2016).

The data presented up to this point highlights how the effect of the presence of eco-labels on consumer's purchase intention or willingness to pay a premium is rather limited, and the actual results would be even smaller as most of the studies mentioned have the bias of being set in hypothetical scenarios.

To boost the demand for green products with eco-labels, it is therefore essential to initially recognize the key drivers that influence their selection. In the section above some of these factors were mentioned, like eco-label credibility, format or type of sustainability message chosen, but there are many others to consider, and is also vital to understand which ones are more significant. Several meta-analyses have classified these drivers into three main categories: consumer-related factors, which may be individual or social in nature, and contextual factors, that intervene at the time of purchase and can be related to the product or to the eco-labels (Monge et al., 2020; Flores & Jansson, 2022).

1.2 DRIVERS OF ECO-LABELLED PRODUCTS SELECTION

1.2.1 CONSUMER RELATED FACTORS:

Before the in store/online supermarket purchase, there are some necessary steps the customers must go through that will increase their probability of purchasing the green product.

Develop an eco-friendly attitude

First, it is necessary to raise consumer awareness of sustainable issues, including the impact their purchasing choices have on the environment, society, and the economy, so that consumers develop a green attitude that leads them to adopt more responsible behaviour.

One incentive in this regard are the psychological benefits that come from making decisions for the common good. In addition, certain personal traits, such as a greater interest in innovations and technology, make consumers more receptive to eco-innovations (Cheung & To, 2019; Duong et al., 2022). Also, sociodemographic factors, such as gender and age, play an important role: previous research found that although women tend to express a greater concern for sustainability issues, men are more open to trying new innovations, such as plant-based drinks. Furthermore, several studies have found that although younger generations, particularly Gen Z[2], have shown greater eco-concern and willingness to pay a premium (10%), older people, like Baby Boomers, are the ones contributing the most to the sales of green products thanks to their higher buying capacity (Monge et al., 2020; Flores & Jansson, 2022; Petro, 2020; Sun & Yoon, 2022).

Develop a positive attitude towards the eco-friendly company

Several studies have investigated which factors intervene in the purchase of a green eco-labelled product once the consumer has been sensitised to sustainable issues.

One of the most frequently used theories, often integrated with other variables, is the Theory of Planned Behaviour (TPB) , according to which three elements are to be considered determinants: a positive attitude towards the eco-friendly company (according to some studies this is the most relevant factor of the three) , the subjective norm/social influence and the perceived behavioural control/consumer self confidence in his ability to recognise and purchase a green product, based on the available time, money, knowledge etc (Sun & Yoon, 2022).

More in detail, for consumers to develop a positive attitude towards the company, a crucial role is played by the brand's image: companies must avoid being implicated in food-related controversies

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[2] Although different papers report slightly different ages dividing one generation from the other, indicatively one paper has the following division: Gen Z include young people between 24- 27 years old, while Baby Boomers include older generations between 56- 75 years old. (Ham et al., 2022)

or engaging in unethical practices. Instead, they should transparently and consistently communicate an image that aligns with what they claim in sustainable labels and advertising campaigns (Barbu et al., 2022; Guntzburger et al., 2021).

At the social level, many studies have shown that sustainable advice and purchases by others significantly influence people's decisions to adopt a healthier lifestyle. Curiously, one study investigating which social actors are more relevant, found that neighbours were more influential than family and co-workers. Also, social media influencers play a decisive role in increasing the credibility of a green product (Jansson et al., 2017; Zhang et al., 2021). Additionally, a study revealed that when consumers are shopping in a public place and are aware of being observed, they are more likely to spend more on sustainable products. However, it's important to acknowledge that social pressure can occasionally lead to unsustainable choices. In particular, a study identified stereotypes associated with people who make sustainable purchases, such as being viewed as more effeminate, gentle, or "hippie" (Acuti et al., 2022; Monge et al., 2020; Sun & Yoon, 2022).

About the last factor of the TPB, consumer self-confidence, it is relevant to underline the following: acquiring information related to sustainable issues and actions taken by companies can be a complex task for consumers, making them less confident in their ability to select products with minimal environmental and social impact. Some factors could simplify this process: a higher level of education, sufficient time to dedicate to shopping, positive previous purchase experience, can all contribute to consumers possessing some necessary information and finding it easier to integrate new information, such as food labels (Acuti et al., 2022; Aprile & Punzo, 2022; Barbu et al., 2022; Monge et al., 2020; Sun & Yoon, 2022).

Develop a trustworthy relationship towards the retailers and the certifications bodies

However, companies must consider that the process of acquiring the necessary information to make sustainable decisions entails many risks for the customers. For example, the use of private, self-declared labels or fraudulent labels that have no legal meaning (e.g., "all-natural ingredients") undermines the credibility of the company's claims about environmental performance, contributing to the phenomenon of greenwashing (Matisoff & Noonan, 2022b; Pizzetti et al., 2021). As reported by a 2022 HBR article, in 2021 the European Commission and national consumer authorities conducted a "sweep" analysis, evaluating the credibility of 344 seemingly dubious green claims present on websites from different business sectors, and found out that in 42% of the cases the claims were exaggerated, false or deceptive and therefore potential Unfair Commercial Practices (European Commission, 2021; Ioannou et al., 2022). And the percentage of

vague and misleading claims has further increased in the last year up to 53%, which is why the European Commission issued a proposal for a Green Claims Directive on 22 March 2023 (Talignani, 2023). Therefore, companies must simplify the green product choice, making it easy for customers to align their purchases with their sustainability concerns. To this end, for the eco-label to be a credible signal that the product meets specific environmental criteria, reliable voluntary environmental certifications can be leveraged by companies.

The most used one, at a global level, is ISO, implemented by more than 360000 organizations in 171 countries and ensuring that the products and services are safe, reliable and of good quality (ISO, 2022, 2023). It's relevant to underline that while ISO is the organization in charge of setting standards in each sector (e.g., ISO 9001 for quality management or IS0 22000 for food safety management, ISO 14001 for environment management) other independent certification bodies are responsible for releasing the final ISO certification (ISO, 2015).

Another important voluntary environmental certification in Europe is the Eco-Management and Audit Scheme (EMAS), currently adopted by more than 4k organisations and almost 13 k websites. It was introduced by the European Commission in 1993 and, after its last revision in 2010, EMAS GLOBAL is available for use by any country worldwide (European Commission, 2023b, 2023c).

As much as is important for companies to adhere to superior standards and being certified, better communication about certifications is just as relevant. An increase in the eco-labelled products market share wouldn't be feasible without customers acquiring more comprehensive knowledge about certifications, their issuers, the process and inspections required to obtain them, as well as the diverse stakeholders involved in the supply chain, including farmers and retailers for food products (Guntzburger et al., 2021).

Only then will customers trust the authorities and the entities that issue certifications and be more willing to purchase sustainable products. Trust in retailers must also be considered, along with other factors such as greater economic availability and the psychological benefits that come from making decisions for the common good (Barbu et al., 2022).

When it comes to certifications, multiple studies emphasize the importance of improved communication as people often overlook the distinctions between the various types. Third-party certifications are especially crucial to substantiate companies' claims, as they are more susceptible to engaging in greenwashing, which undermines their credibility. Furthermore, a study revealed that consumers, in the presence of sustainability declarations from governments and non-governmental organizations, pay less attention to certifications (Darnall et al., 2018).

1.2.2 PRODUCT RELATED FACTORS

The second group of factors shaping the selection and purchase of a green product are contextual and concern both the environment where the purchase takes place as well as the product itself.

Product placement

About the former, a 2018 study focused on the importance of the supermarket environment and finding the right product placement to increase sales. Specifically, there are some elements to consider when deciding where to position a given product. First, most of the customers, in a study 54%, are habitual shoppers, therefore they will tend to shop always within the same perimeter of a given store. Therefore, they will pay more attention to products that are part of their usual purchase or very close to them, while for new products, for instance plant-based meat, companies will have to carefully choose the location, identifying the costumers' way of reasoning during their purchases. For instance, previous studies have proved that people tend to associate the fresh section with healthy food, while they tend to think that unhealthy food will be positioned down the aisles. Also, one study suggested that retailers could invest more in marketing programs to encourage the trial of eco-labelled goods, that will be more likely to be selected in future purchases once they become part of the habitual shopping (Song et al., 2019).

Besides, store familiarity will increase the likelihood of people noticing new products, while it will not have any effect for products that are already part of their usual consumption, such as meat or diary (Flores & Jansson, 2022; Gravely & Fraser, 2018; Song et al., 2019). Also, product involvement, which is consumer interest in a specific product category, such as organic food, leads to a higher level of engagement and willingness to pay a premium for a higher quality and more sustainable goods (Kushwah et al.,2019).

Product attributes: Quality

Previous research has found that the two most impactful factors determining customer's choice of an eco-labelled product in the food sector are quality and price.

In a 2020 study conducted in Spain 76,2% of the respondents considered product quality as very important during their purchases, followed by attributes such as price and local origin, marked as very important by 41% of the respondents. These results show a gradual shift of customers from paying attention mainly to elements such as price and product appearance to becoming more and more concerned with other attributes, such as food composition. Especially in the presence of eco-labels studies show how people are becoming more willing to pay a premium for higher quality goods (Song et al., 2019).

Despite product quality being the most relevant attribute, especially in some product categories such as organic food, it should be emphasized that people often have a perceptual bias in evaluating responsible products, believing that greater sustainability corresponds to lower quality or functionality. This is referred to as sustainability liability (Acuti et al., 2022; Rana & Paul, 2020). Possible solutions to address this perceptual bias involve adopting sustainable initiatives at the company level that consider the entire product cycle, rather than solely focusing on packaging, and effectively communicating this dedication to customers. In addition, regarding the advertisement and placement of sustainable products, for example in supermarkets, it is proving beneficial to group all products associated with a particular sustainability category, such as organic products, in one location. This makes it faster to identify products with a lower environmental impact and leads to greater psychological benefits, as the consumer will experience a social identification and a greater sense of affiliation with people leading a healthier lifestyle (Acuti et al., 2022).

Product attributes: Price

Another very important attribute is price, which is currently one of the main reasons for the eco-labelled products low market share. In fact, as previously stated, despite most of the customers declaring themselves interested in sustainability issues, only around 20% considers eco-labels during their product choice, while the vast majority are motivated by convenience and other attributes. However, research suggests that customers are willing to pay a premium for products with clear labels that are in line with their values (Bastounis et al., 2021; Grymshi et al., 2022).

Indeed, given the importance of the price factor in explaining the customer's action-intention gap, more research needs to investigate what are the ideal pricing strategies when it comes to eco-labelled products, if price premium or price discounts are better received in terms of product quality and WTB. On the one hand, previous research has found that people associate higher prices with superior quality. Also, it has emerged that more expensive purchases lead to experiencing feelings of excitement and pleasure, which may result in higher purchases (Völckner, 2008).

On the other hand, the availability of a limited budget and the attractiveness of what is perceived to be a good deal could be reasons why customers prefer discounted products. This is especially true in the case of organic goods (Bezawada & Pauwels, 2013).

However, it must be also highlighted that lower prices could also be linked by customers with lower quality having a negative effect on trust and purchase intention for the respective product. Particularly interesting was a 2022 field experiment conducted in Germany, in collaboration with an online European fashion store, and based on a sample of more than 50k actual purchase

decisions. The study analysed the interaction between eco-labels, price premiums, and discounts and found that eco-labels can increase customers' purchase intention, this effect is greater for price premiums and is reinforced by price discounts. The main finding behind is that customers prefer to buy a higher priced and superior quality good in the presence of a discount. Future research could analyse the impact of price premium and discounts in other sectors, for different product categories (Feuß et al., 2022).

Product attributes: Origin

The consumer's perception of quality is also influenced by the origin. When the good is produced closer to the consumer, it is perceived as higher quality. Therefore, food that is domestically produced is perceived as healthier than imported products, and farm-to-table food is seen as the most sustainable. This perception is linked to consumers' greater trust in locally sourced food, their desire to support the local economy, and the idea that the further the food must travel, the more polluting and less healthy it is (Aprile & Punzo, 2022; Morley, 2021). This, although intuitive, is only partially true as there are other factors besides transport that are much more polluting, such as production methods and customer consumption choices. In fact, there is a considerable difference between foods in terms of environmental impact, with protein-rich products such as meat and tofu among the most polluting. However, the limit of many eco-labels today is that they do not inform the consumer about the entire production cycle but only state that a certain set of standards is met (Potter et al., 2022; Stein & Santini, 2022).

Product attributes: Health

As highlighted by a 2019 systematic review, functional value is another relevant factor influencing the choice of green products, especially organic products. This includes, besides food quality, safety and nutritional value, health (Kushwah et al.,2019).

The health factor has a double meaning, as it can refer to the individual health concern as well as to an organic product that does not contain chemicals and antibiotics and is, as such, healthier for individuals (Kushwah et al.,2019).

Health in one study has been found more important than environmental concern in determining preference for eco-labelled organic products. Indeed, when asked to motivate their preference for a given good, half of the respondents affirmed they chose it because they perceived it as healthier, 32% as natural and only 10% chose it because of the ecological concern (Song et al., 2019).

One mistaken belief when it comes to sustainable food is that riskier for health, for example in the case of initiatives implemented to save unsold food. In Europe, the largest app to reduce food

waste is Too Good To Go, which allows to pick up fresh food, not sold that day, at very competitive prices and has already saved more than 28 million meals (Marzialetti, 2020).

In the food sector, another common misconception is that sustainable products are of higher quality but less tasty. This perception is even more pronounced for people who are particularly reluctant to try new foods, while is less strong for those who are used to traveling and trying new dishes (Flores & Jansson, 2022).

Product attributes: Packaging

Another decisive factor in the perception of a green eco-labelled product is packaging. For consumers, it is very complex to identify sustainable packaging and it is easy to be misled by irrelevant elements such as colour or material. A more transparent and credible communication with the consumer is therefore necessary. In this respect, eco-labels are an important aid (Ketelsen et al., 2020).

Sustainable packaging in combination with an eco-label explaining its environmental benefits makes the product more attractive to consumers who are more willing to buy it (Van Loo et al., 2020). For example, in recent years, FSC (Forest Stewardship Council) forest certification, which guarantees, inter alia, that the wood and paper used to make goods and products come from recycled and recovered material, has been increasingly used in Italy.

Specifically, for example, the FSC systems between 2020 and 2021 recorded increases of +12% and +13% respectively for CoC and Italian national forest areas (Sardone, 2021).

1.2.3 LABEL RELATED FACTORS

The third group of factors that influence the purchase of a product marked with an eco-label also come into place during the moment of the purchase and are related to the eco-label itself. They can be summarized in the following aspects.

Eco-label involvement

Firstly, previous research has found that the level of involvement with the eco-label will be determined by the degree of interest in the product itself. In case of low involvement products, customers will not pay attention to sustainability related messages and eco-labels, while they will be much more receptive in case of high involvement products. In particular, higher involvement will result in more time and attention devoted to the product, which will likely lead the customer to have a better understanding of the information summarized in the eco-label (Riskos et al., 2021).

Some studies on the other hand argue that eco-labels applied to low involvement products have a more positive effect in terms of trust towards the eco-label, attitude towards the label and its source, which will then likely lead to product purchase. In particular a study analysing which eco-label attributes were more effective in determining the purchase of the given product highlighted the importance of argument specificity (Atkinson & Rosenthal, 2014).

This consist in the implementation of eco-labels that are simple and intuitive in their design but provide customers with a complete picture of the sustainability dimension they represent (Cason & Gangadharan, 2002). The study selected milk as a low involvement product and a smartphone as a high involvement good and the main finding was that argument specificity had a positive impact on trust and brand attitude only in the case of milk. A possible reason could be that in the case of food, even if the product is less expensive, people do read package information due to health concerns.

Also, a 2021 study conducted in Germany and Austria in an online grocery store found that eco-labels, in the study the Eco-Score, have a positive effect on organic products selection, especially in the case of low involvement shoppers (Neumayr & Moosauer, 2021).

Even for customers that expressed low environmental concern, had a low level of knowledge and interest in organic goods, and were mostly influenced by price, the use of the eco-label worked as a nudge subconsciously shaping their product selection choices towards more sustainable alternatives. This is a very promising finding that highlights the potential of eco-labels in helping customers bridging the action-intention gap when it comes to sustainable purchases, provided that enough attention is devoted to understanding which eco-label design is perceived by customers as more attractive and informative.

Eco-label visibility

Another very important aspect influencing the purchase of green products is related to the visibility of the label. This can be compromised by an excessive number of labels or the presence of other information competing for customers' attention (Monge et al., 2020). Also understanding the right placement for the eco-label on the product packaging will improve the chances of customers noticing the label. For instance, despite carbon labels being among the most commonly used eco-labels on a variety of products, they are still not very effective in influencing purchases as they are more visible for some products and less for others (Beattie & Sale, 2009). Other research underlined the importance of labels for costumers choosing organic products and the necessity therefore to improve their visibility (Taufique et al., 2014).

Very informative on the matter of green purchases and eco-label visibility is a 2018 eye tracking study conducted in a USA supermarket, in Indiana, on a sample of 156 participants. After being provided with a set of eye tracking glasses, respondents' shopping behaviour was observed in real time. At the end of the experiment, they were asked to fill out a questionnaire concerning their shopping behaviour, attitude towards the environment and eco-labels. In terms of purchases, 1544 products were bought, 110 of which had an eco-label (7%), with Produce and Dairy being the two top categories in terms of eco-labelled products bought (Song et al., 2019).

This is because they are among the categories with the highest number of eco-labelled products. Also, the study highlighted that only 10% of the respondents tend to read product information, while most of the respondents are guided by their habitual shopping tendencies.

In terms of eco-label visibility, what was clear from the eye tracking study is that, for products with eco-labels, compared to those without, individuals spend more time analysing nutrition information, rather than product appearance. Also, ingredients are very important in terms of longest evaluated area of interest, while price is less relevant. This confirms what stated when talking about quality, that in the presence of eco-labels individuals are willing to pay more for a higher quality good. Besides, to improve visibility, and therefore purchases, firms may place eco-labels close to the factors that are analysed for the longest time by customers, such as the list of the ingredients. In alternative they could position the label close to the price or the name of the brand (C. Liu et al., 2022).

Eco-label design

Also, to improve eco-label visibility and increase the likelihood of purchases, many studies highlighted the importance of eco-label design (Neumayr & Moosauer, 2021; Taufique et al., 2014). Indeed, while top-down factors like eco-label involvement or knowledge are relevant in shaping customers choice, previous research has shed light also on the significance of bottom-up factors, related to eco-label design such as eco-label placement on the package or size (Taufique et al., 2014). A 2023 eye tracking study in Italy highlighted that label size significantly influnce product choice. Visual saliency was relevant as well, when combined with size and specific types of labels. By saliency is meant how much the eco-label stands out thanks to the use of a given colour, the orientation, or other graphical elements (Proi et al., 2023).

Eco-labels may vary in terms of many different visual features, such as colour, logo shape, typeface, format and these changes will result in different customer responses. For instance, the use of bright colours could be visually appealing but also may decrease customers' impression of quality. Also, previous studies have highlighted that customers associate the colour green with

nature and being environmentally friendly. However, given the variety of deceiving products using inappropriately the claim or the colour green, this visual cue alone is not significant and can have even negative effects on customer's purchase intention. However, when combined with an eco-label, the colour green has positive effects on products selection (Creusen & Schoormans, 2005; Pancer et al., 2017).

Also, customers' product choices and evaluations will be influenced by the eco-label format. Specifically, when comparing logos with text eco-labels, the former will capture more visual attention, provided that customers are motivated and informed on the topic. This is because, as proven by cognitive psychology, pictures are easier to memorize than words. In the case of unfamiliar logos, however, the combination of logo and text has been proven to be more effective. Indeed, the dilemma of weather to include text and how much near to eco-labels is still a hot topic. If on the one hand an image could be more appealing, on the other, given most customer's luck of familiarity with many eco-labels and their meanings, some text backing up eco-labels has been proven to have positive effects in terms of product choice as it enhances consumers' trust (Atkinson & Rosenthal, 2014; Rihn et al., 2019; Tang et al., 2004). Also, concerning the format, customer preferences are also shaped by the way the message is conveyed. For example, there is a clear preference for more defined choices compared to binary choices, such as vegan versus non-vegan (Kocsis & Kuslits, 2019).

Customers' perceptions and preferences are also influence by the shape of the logo, reason for whom many firms spend considerable effort and investments in logo development. While many studies focus on weather a round or angular shape is preferrable, only one study investigated the effect of the shape of brand logos on customer's green perception. The results highlighted that rounded logos are better indicated for green brands than angular logos as they are considerate more sensitive towards the customer's demand (Meiting & Hua, 2021). Many studies have also proved how also the typeface used in a variety of marketing contexts has semantic associations than can alter the meaning of the brand, and therefore must be chosen carefully (Childers & Jass, 2002; Doyle & Bottomley, 2006).

For instance, one study highlighted how lowercase wordmarks are associated with friendliness while uppercase wordmarks with brand authority. Also some studies underlined how typeface does impact visibility and recognition (Pušnik et al., 2016; Xu et al., 2017).

To sum up, there are multiple visual factors that can either enhance or detract from the clarity of an eco-label for the consumer. Confusing design can result in mistrust and purchase decisions based on visually attractive labels rather than compliance with higher environmental ISO standards (ISO, 2023).

Eco-label recognition and identification

After capturing consumers' visual attention, the next set of factors influencing their purchase are related to the recognition of the label, interpretation of the text, if present, and interest for sustainability attribute certified. In a 2019 study it emerged that the two main reasons why consumers interested in sustainability issues didn't buy more eco-labelled food products were lack of information and eco-label recognition (Grymshi et al., 2022).

Consumers being not familiar with a given label or not having enough time or related knowledge are some of the reasons behind these challenges (Monge et al., 2020).

It must be highlighted though that the correct identification of eco-labels is not an easy task, given their excessive number, the different categories that exist, the lack of a complete list of eco-labels divided by sector or by country. Also, there isn't a unique body of law regulating them (Monge et al., 2020).

Currently 457 eco-labels in 199 countries are being tracked by the Eco-label Index, which is the largest global directory of eco-labels. A minimum of 121 eco-certifications are present just within the food sector (Marrucci et al., 2021).

In addition, eco-labels also differ in terms of the means of communication they employ, the industry or sector to which they apply (e.g., agriculture), the specific aspect of sustainability they prioritize (such as pollution), their regulatory framework (mandatory or voluntary), and their geographical coverage (e.g., national, or international). This gives an idea of the complexity of the phenomenon (Big Room Inc., 2023; Potter et al., 2022; Yokessa & Marette, 2019). Also, is not immediate for customers interested in sustainability issues to understand the specific ecological attribute that each label certifies, as most label tend to focus on a single sustainability attribute, being it environmental, currently the most common, social, or economic. On the other hand, some of the eco-labels that focus on more sustainability dimensions at the same time may have the disadvantage of being less chosen by customers due to lack of familiarity (Monge et al., 2020).

Eco-label content

Once customers have noticed, read, and ideally correctly identified the eco-label, the last crucial factor that determines their attitude towards the product and therefore the purchase, is if they are interested in the specific sustainability attribute or attributes certified (Matisoff & Noonan, 2022a). Indeed, sustainability is a complex concept that includes three main interrelated spheres: Economic, Environmental and Social (Brundtland, G.H., 1987). These three dimensions are usually graphically illustrated through a Venn diagram, with sustainability at the intersection of the three circles, representing the ideal scenario in which natural resources are used responsibly,

the environment is respected, the economy is thriving and resilient and also the quality of social life is high, as peace and respect for human rights re guaranteed (Kaivo-oja et al., 2014; Purvis et al., 2019).

In terms of sustainability dimensions, many studies have proven how the demand for products marked with eco-labels referring to various sustainability factors, such as environmental and social, is slowly but steadily increasing. Products marked with ESG[3] (environmental, social and governance) claims have grown 8% more than those without, according to a McKinsey and NielsenIQ study analysing consumer purchases in various categories, including food and beverages, in the USA from 2017 to 2022 (Sherry Frey et al., 2023).

Indeed, consumers perceived products with claims that refer to more dimensions, such as animal welfare and social responsibility, as more sustainable, provided they reflect a credible commitment from the company. This is because people are becoming increasingly aware of the connections between different sustainability pillars, such as food supply chains' impact on health, the environment, animal welfare, employee working conditions, and the local economy (Guntzburger et al., 2021).

Although most of the attributes currently studied in the food system are related to either health and nutrition or environment (e.g., carbon and organic labels), recent studies have found that customers are increasingly more interested and willing to pay a premium for social sustainability eco-labels as well. These are related to both human and animal welfare (e.g., Fair Trade or Animal Welfare labels, like in Italy "Benessere Animale"). For instance, some studies have reported that customers are willing to pay a premium for Fair Trade certified coffee (Lappeman et al., 2019; Papoutsi et al., 2023; Signes et al., 2022). Also, a 2014 metanalysis conducted in the USA on a large section of product categories (Including food, clothing, electronics and other) had already found that most of the respondents (60%) were willing to pay a mean average premium of 16.8% for socially responsible products, with a higher WTP when the beneficiary was a person (Tully & Winer, 2014).

A more recent UK systematic review based on 30 more relevant articles (mostly from Europe and North America) and 19 k participants investigated customers preference, perceived utility and/or WTP for three different attributes of sustainability diets: Nutrition, Environment and Social. In almost 60% of the studies, respondents expressed a preference for environmental and social attributes over nutritional ones. In particular, the most preferred environmental attribute, was organic, mostly because associated to health, and it was found prevalently on dairy products

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[3] ESG: acronym for Environmental, Social and Governance. (M. Liu, 2022)

(European Commission, 2023a; Tobi et al., 2019). Interestingly, this association organic/health does not always correspond to a higher nutritional value, and often times costumers may suffer from a bias, known as halo effect, in which they make this association even in the absence of enough evidence (Asioli et al., 2017). The favourite and second most preferred attribute was animal welfare. For more expensive/hedonic foods like salmon or chocolate instead the nutrition attributes were the most relevant. Finally, consumers expressed a higher WTP in four out of the five studies that analysed the composite effect of nutrition, environmental and/or social attributes.

1.3 GAP AND RESEARCH QUESTION

As outlined in the previous paragraph, many customers are interested in both the environmental and social dimensions of sustainability (Tobi et al., 2019). This includes, inter alia, human attributes, like fair working conditions and salaries, as well as animal welfare labels. However, a major challenge for companies is to understand how to communicate these attributes through eco-labels that are appealing, complete, and do not overload the customer with information.

Indeed, due to the huge number of eco-labels in circulation and their limited understanding, people find it difficult to correctly identify ecological claims, which is, according to some studies, one of the main reasons for eco-labels limited market share (Grymshi et al., 2022).

The task of recognizing eco-labels is particularly challenging for customers due to reasons related to both visual appearance (visibility, placement, confusing design) and meaning (lack of clarity, lack of credibility, scope of the label) (Taufique et al., 2014).

Additionally, customers are facing the challenge of having to distinguish legit environmental claims from deceiving ones. This issue has become more relevant in the last year, leading the European Commission to propose a Green Claim Directive in March (Giacomo Talignani, 2023).

To address the issue of eco-labels overcrowding thus simplifying eco-label recognition, a possible solution is represented by the use of a unique label. Also known by many other names, such as "Label of labels", "Meta-label" or "Composite" label, it summarizes information relative to multiple sustainability attributes in a unique, compact label, making it easier for customers to compare the performance of the product among different sustainability dimensions. They have, among the others, the advantage of being more credible. In fact, previous studies have found that consumers consider more trustworthy claims backed up by some relevant explanation compared to logos alone (Atkinson & Rosenthal, 2014; Torma & Thøgersen, 2021a).

Meta-labels are particularly indicated for the food sector, both due to the environmental impact of food system production as well as for people's interest in multiple sustainability dimensions (Monge et al., 2021). Indeed, multiple studies have stressed that, given that customers more

involved in sustainability issues tend to give the same weight to different sustainability dimensions, a universal label is the most logical solution. This was suggested in a 2019 systematic review conducted in UK, in the food sector, where participants expressed higher WTP for combinations of nutritional, environmental and social attributes referred to sustainable diets (Tobi et al., 2019).

Also, a 2017 study conducted in Germany evaluating consumers preferences for multiple environmental (e.g., organic, locally produced) and social sustainability attributes (fair wages, animal welfare) when choosing dairy products found that most of the customers (85%) attached the same importance to all sustainability attributes, therefore justifying the introduction of a unique multidimensional label. Specifically, 36% of the customers were mostly influenced by price, while 47,5% were moved by sustainability concerns (Janßen & Langen, 2017).

Although many studies have hinted at the potential of a composite label, very few studies have explored this idea more in detail. A 2021 systematic review of meta sustainability defined the concept of meta-label, stressing that there are some essential components, like multidimensionality, and some others, that are not compulsory, but provide additional information (Torma & Thøgersen, 2021). For instance, the multi-level label has the advantage of not only informing the customer that a product fulfils a set of standards, but compares each attribute performance through a rating system, while the universal label allows to confront goods belonging to different categories (Kocsis & Kuslits, 2019). Limited research so far has explored the meta-labels effectiveness in terms of WTP and WTB. For instance, a study reported that consumer had a higher WTP for multilevel-label systems and proposed a graphical model for summarizing effectively and clearly the different sustainability attributes. Specifically, the four sustainability attributes (fair working conditions, no GMO, carbon neutral and animal welfare) were presented associated to the main related subject (producers, consumers, future generations, animals) (Kocsis & Kuslits, 2019).

Lastly, from a graphical point of view, no study has been found comparing the effectiveness of meta-labels versus combination of eco-labels (related to both environmental and social dimension) in shaping consumers preferences and purchase intention for eco-labelled products in the food sector. This leads to the following research question:

RQ2: Do consumer express higher purchase intention (WTB, WTP) for a combination of eco-labels related to multiple sustainability attributes (environmental and social) or for a unique meta-label, related to the same attributes?

The main goal of the study is to propose a new type of meta-label, which could be more informative, addressing one of the main gaps found in the literature, which is lack of information

related to the label during the moment of purchase, while providing a label which, in terms of scope, could be more in line with consumers growing interest for different dimensions of sustainability and how they are connected. At the same time, it's clear from previous research that familiarity with a given eco-label plays an important role during the choice of the product. It will be interesting therefore to investigate, for each sustainability pillar (mainly environmental and social), from on-site research in supermarkets, which eco-labels are most used for each category and secondly conduct a survey to compare these results with individuals' feedback, to see how the company efforts to communicate their green commitment are perceived by costumers.

Lastly, the research will compare a combination of eco-labels mostly used and recognized by customers with a unique meta-label and investigate which one is more effective in influencing individual purchases for green products in the food sector. A final remark for completeness is that, among the sustainability dimensions, the study focuses on two of them, environmental and social, and not of the economic one, not for lack of relevance. Indeed, the three spheres are deeply interrelated and equally important. For instance, fair working conditions include also fair wages, or the choice of locally produced goods, besides being healthier, it supports also the local economy. However, in terms of consumer interest for the sustainability attributes chosen, previous research has found that consumers are less interested in eco-labels that refer to the economic dimension, especially if they are broad economic indexes such as Genuine Savings. Very few studies have found that consumers are interested in this sphere as well (Janßen & Langen, 2017; Singh et al., 2009; Vermeir & Verbeke, 2006).

Chapter 2

2.1 OVERVIEW

The main objective of this research, given the growing consumer interest in multiple pillars of sustainability, is to understand which eco-label format is preferred, graphically and conceptually, between a combination of eco-labels related to two dimensions of sustainability (environmental and social) and a single meta-label summarizing the main benefits and names of the respective certifications for each eco-label.

2.2 DEFINING COMBINATIONS OF ECO-LABELS

The main purpose of eco-labels, which is to credibly communicate the sustainability attributes of a product thereby promoting green consumption and production (SDG12), can be reinforced through the use of multiple eco-labels referring to the different sustainability pillars (Dórea et al., 2022). Many studies have shown how customers consider a combination of eco-labels related to different dimensions as more sustainable, and they are willing to pay a premium when provided with this information (Frey et al., 2023). Indeed, for a variety of sectors, food sector first, but also textile, electrical , drugstore and others, consumers concerned about sustainability issues expect firms to provide information about their environmental, economic and social commitment (Monge et al., 2021).

For instance, in the food sector, previous research investigated attribute preference, WTP, and WTB when customers were presented with a mixture of nutritional, health, environmental and social attributes. One key finding was that ecological and social attributes were preferred to nutritional ones (Tobi et al., 2019). Also, another study highlighted how combinations of eco-labels related to environmental and social concerns are becoming more relevant in shaping consumers purchasing decisions, although more information about the certifications needs to be provided (Eldesouky et al., 2020).

The environmental eco-labels refer to a vast category of attributes. One possible classification is by life cycle stage. The most common environmental labels are related to the production stage and include those referring to the impact on the air (carbon emissions). While other less used attributes are those concerning biodiversity (e.g., land use), water, material, and energy use. Another

relevant category of environmental labels are those about the disposal phase and recycling (Shao et al., 2017). The three most frequent categories of ecological attributes analysed by previous research include organic, carbon emission, and other (e.g., pesticides, water use, land use). The first category, organic, is the most preferred one in many studies as is often associated by consumers with sustainability, healthiness, and product safety (Lamonaca et al., 2022). In addition, another important label analysed in a study, in combination with other environmental attributes, is origin: consumers tend to view products as healthier when they realize they come from local sources (Duckworth et al., 2022; Potter et al., 2021).

As for the social dimension, also referred to in some studies as ethical, it includes on the one hand attributes related to workers, like fair working conditions, safety, no discriminations, child labour, as well as customer's health and satisfaction (Shao et al., 2017). On the other hand, attributes are related to animals, like animal care of farm management (Díaz de Otálora et al., 2021). Recent studies have revealed an increased interest in social attributes, besides environmental ones (Guntzburger et al., 2021).

2.3 DEFINING THE META-SUSTAINABILITY LABEL

Although in terms of scope, a combination of eco-labels and a meta-label can be analogs, as they may convey information about the same sustainability attributes, they differ in terms of design/format.

Meta-labels allow, inter alia, to deal with the challenge of interpreting too many eco-labels and the confusion caused by it, by proposing a unique comprehensive label, that integrates different sustainability dimensions. Although their application is still limited so far, some governments (e.g. Germany) , businesses and NGOs (e.g. WWF) have already started to develop ideas for a meta sustainability label (Dendler, 2014).

Also known by a variety of other names, such as umbrella, omni, overarching, integrated or universal label, meta-labels can be distinguished by the presence of four elements, two being essential, (the meta and the multidimensionality elements), and two being optional (the multilevel and the universal components) (Torma & Thøgersen, 2021a). More in detail, meta-labels allow to summarize in a unique label information related to multiple eco-labels (meta) and different sustainability dimensions (multidimensionality). Additionally, besides providing a binary classification, attesting that the product satisfies a set of requirements, meta-labels may rank

different certifications, through a multilevel system (multilevel) (Kocsis & Kuslits, 2019). A very common multilevel label in the food sector is the Traffic Light, where attributes are associated with the green colour when the product performs well along that dimension and with red when they don't. Another multilevel system to classify certifications is the star rating, ranking each attribute from one to five stars. Although it is very intuitive to comprehend, may not provide customers with enough information about the environmental dimensions (Leach et al., 2016; Vanderlee et al., 2021). Finally, the universal label allows comparing sustainable attributes among different product categories.

2.4 LITERATURE ON META-LABELS, COMPARED TO A COMBINATION OF ECO-LABELS

As mentioned earlier, meta-sustainability labels increase the benefits of an eco-label or a combination of them. In particular, they allow to deal with the problem of consumers being presented with too many eco-labels, but with little information on the company's green commitment (Futtrup et al., 2021). In fact, previous studies have highlighted how low the percentage of people currently buying products labelled with eco-label is due to problems related mainly to lack of familiarity, understanding and therefore correct identification of eco-labels (Grymshi et al., 2022).

The introduction of a holistic label would fill the information gap. Furthermore, if used consistently on all products, it would allow consumers to become familiar with it and recognize it more easily in future purchases (Rossi & Rivetti, 2020). Meta-labels, therefore, as evidenced by previous meta-analysis and studies, offer several advantages, compared to individual eco-labels, which will be illustrated below, from the moment the green product is noticed by the consumer until the possible purchase (Torma & Thøgersen, 2021).

First, meta-labels are more likely to be noticed by consumers than individual eco-labels, thanks to the simpler and more intuitive design that makes them more prominent and easier to comprehend (Stampa & Zander, 2022). Some types of meta-labels are easier to understand than others, for example the Traffic Light, the star rating system, graded system or horizontally formatted labels (Feucht & Zander, 2018; Li et al., 2018).

Among these, many studies showed that the clearest was the Traffic Light, which allows to rate product sustainability performance (e.g. red for low score, green for high performance) and provides more information (Gröfke et al., 2021).

For example, a 2019 study of more than 12k respondents in 12 countries analysed consumer's perceptions of five different types of front-of-pack nutritional labels (e.g., star rating, multilevel traffic label). The traffic label was the best understood, the most prominent, and therefore the most trusted by costumers (Talati et al., 2019).

In addition, in a previous 2010 study, three different versions of Traffic Light labels had been proposed: the first based on five different sustainability attributes (e.g., the impact on the environment, healthiness, contribution to economy), the second focused on five life cycle stages, from production to consumption, and the third based on a combination of the first two. The results showed a clear preference for the first two versions, showing the importance of drawing meta-labels with as few levels as possible to not overload the consumer with information. Additionally, from a graphical point of view, almost 66% of the consumers liked the use of arrows in the first version and 49% the usage of icons in the second (Engels et al., 2010).

While at first the most important aspect for capturing consumers' attention is the visual clarity of the meta-label through simple and straightforward design, then, the clarity and comprehensiveness of the content, as well as the interest in it, play a key role in determining, for example, how much time is spent evaluating the product. Meta-labels offer the advantage of a better understanding of the individual eco-labels they refer to, which also increases credibility (Torma & Thøgersen, 2021b). Often industries are certified for certain standards, such as health and safety issues (SA 8000), but they do not have a clear signal to inform customers (Nikolaou & Kazantzidis, 2016). For example, Italy is the world country with the highest number of SA 8000 certifications (related to Social Responsibility), but not always this is communicated on product packaging, as can be seen, for example, with milk packaging: although the social dimension is highly important, along with the environmental one, Coop, the first company in the country to adhere to SA 8000, communicates its commitment to social issues with a generic statement that the products were made without the worker exploitation (Coop, 2023; SAI, 2023).

The meta-label also has the advantage of being more comprehensive, informative, and interesting for customers, who currently are more and more concerned about multiple sustainability issues and how they are connected. Indeed, currently labels and combinations of them tend to focus either

on one dimension of sustainability (usually environmental) or two (sometimes also social), disregarding the economic one, and choosing very few attributes for each dimension.

A sustainability label should instead address all three pillars of sustainability (environmental, economic, and social) including and summarizing a list of the most important attributes for each dimension (Torma & Thøgersen, 2021b). Some studies, one for instance in the chemical sector, have dealt with creating a composite sustainability index and a corresponding label, and then evaluating its applicability in real life (e.g., through a case study on a sample of industries). For each sustainable size, a list of relevant attributes has been drawn up. Then, for each industry, an average of the indices for each size was made, evaluating its sustainability as strong if it was above the industry average (Nikolaou & Kazantzidis, 2016; Nikolaou & Tsalis, 2018).

In the food sector, in Europe, several composite indexes have emerged to summarize nutritional as well as environmental attributes. Some companies, like Nestle', Unilever or Coca Cola have launched their own Traffic Light index, while Italy has underlined that the traffic label does not value enough the Mediterranean diet. Therefore, a Mediterranean index and a respective composite label have been introduced, focusing on nutrition as well as on economic, social and environmental aspects (Clodoveo et al., 2021; 2022).

Once the product with the meta-label has caught customer attention, is found to be complete and in line with consumer interests (regarding content), other considerations, such as comparability in terms of sustainability with other products or credibility of claims, are involved during product evaluation and selection.

Many studies have shown that more quantitative labels, such as multi-level labels (e.g., Traffic Light), are preferred by consumers over individual labels. In fact, consumers prefer scientifically based labels issued by reputable authorities. These labels make it easier for buyers to verify the veracity of claims, reducing the growing risk of greenwashing, to which an increasing number of unrelated one-dimensional labels and vague green claims contribute (Futtrup et al., 2021; Torma & Thøgersen, 2021b). A meta-label, compared to a combination of eco-labels, could also communicate additional information about the distinction between weak and strong sustainability. The first is about efficiency, producing more from less through technological improvements. This can benefit companies in the long run and encourage innovation, but the real benefit in terms of environmental impact occurs when companies are able to reduce the amount of resources used

through a de-growth strategy, which is known as strong sustainability (Nikolaou & Kazantzidis, 2016).

Lastly, the final stage after the consumer has noticed the label, analysed it from graphic and content points of view, and compared it with alternative products, concerns the decision to buy the product with the meta-label. So far, there is very limited research on the consumer purchase intention for composite labels. Some studies in the food sector have shown that consumers have a high WTP for multilevel labels and Traffic Lights (Kocsis & Kuslits, 2019). Many of them tend to focus however on only one aspect of sustainability at a time, for example nutrition, climate, or environment (Arrazat et al., 2023; Isabel Sonntag et al., 2023; Kunz et al., 2020).

Indeed, as anticipated before, the multi-level element alone is not sufficient to have a meta-label, which to be defined as such must also refer to multiple dimensions of sustainability and summarize more eco-labels. In this regard, a 2010 study conducted in Switzerland analysed consumers' preferences for three different types of traffic label designs focusing on economic, environmental, and social aspects. The majority of the consumers (83%) expressed interest and purchase intention for two types of design, more informative, but less complex, compared to the excluded design, which was a combination of the first two, therefore subject to the problem of information overload (Engels et al., 2010).

Finally, very interesting was a 2017 study conducted in Germany that analysed consumer perceptions in the dairy sector in relation to various eco-labels related to the environmental (e.g., organic) and social spheres (e.g., animal welfare, fair salaries). The results showed that most consumers (85%) attach the same importance to various sustainability attributes, and therefore would be satisfied with a single meta-label. In addition, half of respondents would be willing to pay a premium of 15% for a package of milk with either of the sustainability labels (Janßen & Langen, 2017).

Thus, the following hypothesis is proposed:

H1: The use of a meta-label on product packages (vs a combination of eco-labels) positively influences customers' purchase intention (WTP, WTB) for the product.

Both stimuli will be focused on attributes related to the environmental and social dimensions, given consumers' increasing interest in these two aspects.

2.5 DEFINING VISUAL PROCESSING FLUENCY

As analysed by previous research, one of the main factors intervening in the evaluation of a marketing stimulus, being it an advertisement, a logo, an eco-label or a meta-label, is fluency i.e., how difficult is for customers to process it (Mauri et al., 2021). The easier is the elaboration of the stimulus, the more appealing, reliable, and positively evaluated it will be (Morgan et al., 2021).

In particular, the processing of visual characteristics is referred to as perceptual fluency while the interpretation of its meaning is known as concept fluency. Some papers have elaborated scales to combine the effects of perceptual and conceptual fluency. This combination has been referred to as visual processing fluency, ease of processing or fluency index (Gordon C. Bruner II, 2012).

While in terms of conceptual fluency, easier to analyse text are generally preferred, in terms of visual appearance past research has shown that consumers are more captivated by a more complex design (Donato & Adıgüzel, 2022). This, in a 2010 paper analysing advertising complexity, was associated with a higher number of objects, irregularly shaped, detailed, and dissimilar (in terms of colours, shape, orientation, etc.) as well as with asymmetric and irregular disposition of the objects in the advertisement (Pieters et al., 2010). Indeed in a 2022 paper, more complex design was associated with higher perceptual fluency and in the end higher WTP (Donato & Adıgüzel, 2022).

Also, past research has highlighted the role of cognitive and affective fluency in the elaboration of a text or an image. The former indicates the cognitive effort required in the processing of the stimulus, usually text-based, while affective fluency refers to the enjoyment of implementing mental resources in the interpretation of a text and image/image, which will be higher is the stimulus is easier to process (Jaud & Melnyk, 2020; Storme et al., 2015).

2.6 LITERATURE ON VISUAL PROCESSING FLUENCY

As mentioned above, customers evaluate more positively and have higher purchase intention for market stimuli (logos, packaging, advertising, environmental labels, etc.) that are more visually appealing and easier to process (Morgan et al., 2021).

For example, many studies have analysed which design, colour, or arrangement of information on product packaging is more attractive, associated with health and thus leads to increased purchases of green products. In particular, a 2023 study highlighted that simple packaging is the best option for low-fat products: they scored high on conceptual fluency as customers perceived them as suitable to communicate product health. This led to a positive attitude towards the brand and the subsequent purchase intention for the product (Xia et al., 2023).

Besides, the symmetric disposition of information increases package attractiveness leading to higher perceptual fluency and purchase intention. In addition, for ecological products, customers find packaging using the colour green more attractive and easier to process because of the mental association with sustainability. The use of a green package also increases the perceived green commitment of the company (Gagnan & Badie, 2018; Seo & Scammon, 2017).

Other market stimuli often investigated in terms of graphical and textual comprehension are brand logos. Indeed there are a number of elements, related to the format and the design (e.g. logo and font size, appropriate use of colours and icons) that, if used correctly, significantly increase logo appeal and memorability (Rafiq et al., 2020). For instance, in terms of format, a consistent body of research has highlighted the benefits of using images instead of text-based logos: from a cognitive point of view, images are processed holistically and therefore require less mental effort, therefore they are easier to remember. However, if customers are not familiar with the brand, they better perceive logos that integrate text and images, or text based logos only (Morgan et al., 2021).

Also, another interesting variable related to logos is design elaborateness. In a 2013 study conducted on 120 USA College Sports logos it was highlighted that people prefer sport logos whose designs remind them of the main aspects of competitive sports: complexity (e.g., how many elements are represented and how they are allocated), movement, and depth (three-dimensional logos vs flat ones). In particular, a higher purchase intention was expressed for more elaborate logos (complexity, activity, depth) as they were the ones scoring higher on processing fluency (e.g., more attractive, eye catching and easy to process). Also, to improve logo comprehension, it was suggested to pay particular attention to the formulation of logo features (e.g. avoid abbreviations) and include animals, which are also related to the attributes of design elaborateness, contributing to higher purchases (Payne et al., 2013).

Besides elaborateness, another feature of logo design is harmony, which includes inter alia, symmetry (Payne et al., 2013). Previous studies highlighted how visually complex stimuli, (for instance asymmetric disposition of information), are more difficult to process, in terms of mental effort, less familiar, and therefore lead to negative evaluations. Other studies instead pointed out how more complex logos are perceived as more appealing, in terms of perceptual fluency, and they are considered more interesting (Pieters et al., 2010). Another innovative point of view was offered by a 2020 study, in which preference for more complex or easy design was related to individual characteristics. In particular it was found that people led in their decisions by intuition have a preference for easier-to-process logos, like symmetric ones (Northey & Chan, 2020).

Instead, people prioritizing innovativeness would rather choose more complex logos, seen as more original and unique. This emerged in a 2019 study investigating the impact of logo complexity (calculated using 15 attributes like asymmetry, roundness, descriptivism's, orientation, depth etc.) in crowdfunding platforms on financers willingness to invest (Mahmood et al., 2019).

The preference for more complex or simple logo design is determined not only by the ease of elaboration, or the customer's individual characteristics. A study highlighted that also the type of product plays an important role. Indeed, in the food sector, for everyday products, people prefer simpler flat (vs three dimensional) logos, that result more familiar in terms of processing. Instead, for prestigious products more complex unique designs are the most requested (Bossel et al., 2019).

Other suggestions to improve logo processing fluency and therefore have positive product and brand evaluations, include increasing logo visibility. This can be achieved through larger logos. For instance, in the textile sector big logos, when combined with exciting brands, on t-shirts for external (vs domestic) use, were found to lead to more positive customer responses (Cai & Mo, 2020). Another interesting finding, from the tourism sector, was that physiographic logos (e.g. a logo with a natural landscape, and the name of the destination) were more effective than typographic logos (e.g. just the name of the destination) in influencing customer's intention to visit a proposed destination, due to the higher processing fluency derived from the use on an image (Roy & Attri, 2022).

Although less numerous, past research has also investigated how to improve cognitive and perceptual fluency in relation to eco-labels. To avoid information overload, firms often choose eco-labels with none or very little explanatory information. However, many studies have highlighted how lack or recognition and information is one of the man reasons for eco-labelled products low market share and customers in general tend to prefer text and imaged based labels (Grymshi et al., 2022; Jaud & Melnyk, 2020; Wang et al., 2022). In particular, a 2022 study pointed out that, especially for individuals with low eco-label knowledge, better understanding, in terms of conceptual processing, could be achieved by combining eco-labels and some descriptive text, that have to be placed close to each other. In addition, a functional rather than an emotional message type will be more effective in terms of cognitive fluency and purchase intention for people with low construal levels (Wang et al., 2022).

The benefits of using a combination of eco-labels and text were already underlined in a 2020 study conducted in the wine sector. More in detail the study confronted the effect of text-only and text and image wine labels on product preferences, where the image was either related to the name of

the wine or not. The model implemented two mediators, cognitive and affective fluency. Although both are related to the interpretation of the meaning, the latter adds the component of estimating how enjoyable is for customers to process a stimulus. The main result highlighted that a label with some text and a fitting image is perceived as more pleasant (affective fluency) and therefore leads to better taste perceptions, product evaluations and purchase intention (Jaud & Melnyk, 2020).

As for packaging and logos, also for eco-labels, another very important dimension investigated by previous research was design complexity. As highlighted above, eco-labels that are more complex in terms of design, (due to for example one of the following: higher number of objects, irregularly shaped, detailed, and dissimilar) can in some cases be regarded as more interesting, from a visual point of view, leading to higher perceptual fluency and willingness to buy the respective product. A factor significantly affecting the effectiveness of these more elaborate labels is visibility. Indeed, in the study, a zoom in feature was introduced (Donato & Adıgüzel, 2022).

Also, from a graphical point of view, the typeface is another interesting important design element: previous research has found that more familiar typefaces are easier to read and therefore scored higher on perceptual fluency, as well as product's taste evaluation (Gmuer et al., 2015). In addition, another effective way of increasing perceptual fluency and subsequent product positive evaluations is priming: a study showed that, when customers were presented for a short period of time (16 milliseconds) an image related to the label (e.g. a frog) and then , for longer time period, a bottle of wine with the same picture, they were more likely to choose the product, provided the stimulus used was easy to process (Labroo et al., 2008).

Little to no research has been found analysing the variable processing fluency in relation to combinations of eco-labels or meta-labels. However, a study in the food sector, focused on environmental (recycling) and social (health specifically fat content) sustainability dimensions highlighted the higher processing fluency of a standardized colour coded label with respect to specific verbal information, especially under time constraints (Ní Choisdealbha & Lunn, 2020). In addition to being easier to process, the standardized colour coded label had the benefits of higher visibility and greater saliency.

In addition, as previously mentioned, meta-labels offer many advantages that allow on the one hand to improve eco-label visibility and visual clarity. This is achieved through the introduction of a unique composite label, characterized by a simple intuitive design, the strategic use of colours (e.g., green for eco friendliness, yellow to capture consumer's attention) the use of icons, more likely to be remembered, and the symmetric disposition of information. Also, from a conceptual

point of view, a meta-label offers the advantages of showing the connection between different sustainability dimensions, and, for some types of composite labels, the possibility to compare different products performances across the many sustainability dimensions.

Thus, the following hypothesis is proposed:

H2: Visual processing fluency mediates the relationship between meta-label (vs combination of eco-labels) and purchase intention (WTP, WTB) for the product. In particular, the meta-label has a positive effect on visual processing fluency, which in turns increases the purchase intention for the product.

2.7 CONCEPTUAL MODEL

Based on the research conducted up to this point, the study will analyse weather a meta-label is indeed more effective than a combination of eco-labels in driving consumers' purchase intention for a given product. Specifically, WTP and WTB will be investigated (Dodds et al., 1991; Duckworth et al., 2022). The model will be mediated by visual processing fluency (attractive, eye catching and easy to process) (Labroo et al., 2008). It's expected that respondents will express a preference for the meta-label, and that the meta-label will be considered easier to process, both from a graphical and conceptual viewpoint.
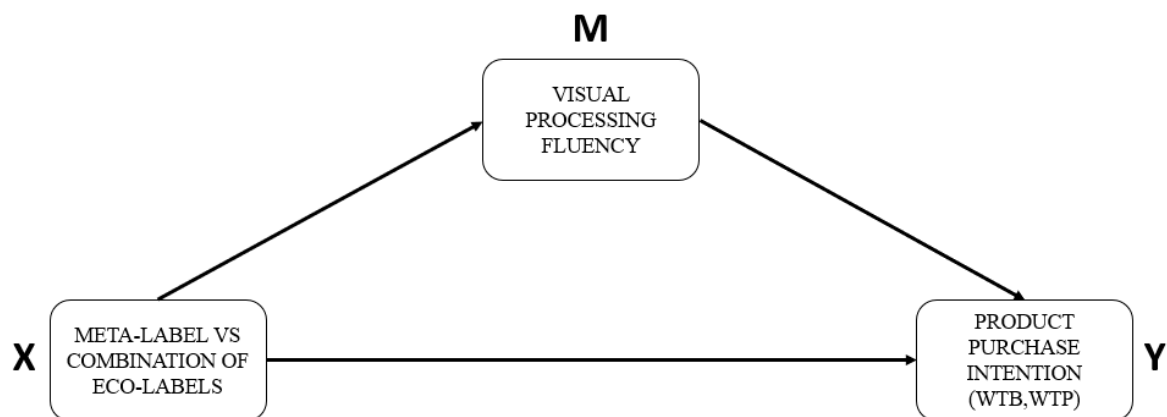
Fig 1: Research Model (Own elaboration)

Chapter 3

3.1 CHAPTER OVERVIEW

The purpose of this research is to compare consumer preferences, in terms of WTB and WTP, for a food product when it presents a meta-label versus a combination of eco-labels.

In particular, the research focussed on the dairy sector and a preliminary study was conducted to understand which eco-labels are most widely used on milk packages. The next two paragraphs (3.1.1, 3.1.2) will explain the reasons why the dairy sector was chosen and the main results of the preliminary study. Afterwards, (from 3.2 onwards) the chapter will discuss the methodology and results related to the main study.

3.1.1 STUDY FOCUS: THE DAIRY SECTOR

In the food sector, a category of relevance from various points of view is that of dairy products, which will be analysed in this study for the following reasons.

Firstly, the organic product market (including fruits, vegetables, dairy products, etc.) is growing steadily, especially in the United States and Europe (Fortune Business Insights, 2022; Mazurek-Łopacińska et al., 2022). In particular, the dairy sector is the one with the largest number of eco-labels and for which consumers are willing to pay a higher premium (Bastounis et al., 2021; Song et al., 2019).

Secondly, as highlighted by previous research, customers are increasingly more interested in different aspects of sustainability, especially when it comes to the food sector and the dairy product category. In the food sector sustainability is multidimensional, as it encompasses the protection of the environment, food nutritional value and local economic and social development along the food chain and includes the promotion of sustainable diets, which are diets with minimum environmental impacts that contribute to food and nutrition security and are considerate of biodiversity and ecosystems (FAO, 2012). In particular, all three dimensions of sustainability are relevant in the dairy sector, especially for milk production: the level of gas emissions as well as decisions regarding organic production have both environmental effects, as well as economic

impacts for farmers, while fair working conditions (which also include fair wages) and animal-friendly farming are aspects related to the social dimension of sustainability (Janßen & Langen, 2017). More in detail, in a 2021 IATP (Institute for Agriculture and Trade Policy) report it has emerged that meat and dairy companies are those having worse effect on the environment in terms of CO_2 emissions and less transparency in their production processes. Just 20 European meat and dairy companies combined produce the equivalent of over half of the U.K., France, or Italy's emissions and none of the firms analysed have taken actions to decrease the number of livestock in the supply chains, which is the major contributor (90%) to CO_2 emissions in the dairy sector (Shefali Sharma, 2021). For the dairy sector to transition towards more sustainable production methods, a dairy sustainability framework (DSF) has been introduced at the global level. The programme has the aim of harmonizing different sustainability initiatives in the dairy sector, by keeping track of 11 economic, social, and environmental sustainability criteria (DSF, 2021).

One of the members of the DFS is Granarolo, which as of 2021, was the leading company in Italy in the dairy sector in terms of revenues (T. Ozbun, 2023). Also, Granarolo is a forerunner in the dairy sector for its commitment to different sustainability pillars and the introduction of a unique logo, "Bontà responsabile", to communicate those efforts (Sgambato, 2021). The logo graphically represents, through the leaves of a four-leaf clover, the company's contribution to four different aspects of sustainability. Specifically, regarding the environment, Granarolo is committed to reducing the use of plastic in packaging. As for the social dimension, the company ensures higher product quality through supply chain controls; invests in sustaining local and foreign communities; and ensures animal welfare in the farms (Granarolo, 2023).

The logo, when accompanied by more information regarding each dimension of sustainability and references to correspondent certifications, has, from an informational perspective, the same function as a meta sustainability label. However, from a design standpoint it is confusing: sometimes it is not included, other times it is used alone and occasionally is combined with more information about each sustainability dimension and the addition of the corresponding eco-label, which exposes it to the problem of information overload. Therefore, there is a need for a meta-label in the dairy sector that not only provides information on the many sustainability pillars but is graphically clear.

3.1.2 PRELIMINAR STUDY

To identify the most frequently used eco-labels in the milk sector, a field survey was conducted in March in six supermarkets in Rome and Pescara. After careful observation of product packaging, seven eco-labels were chosen, four of which belonged to the environmental sphere (one forest certification, two carbon labels, one organic certification) and three to the social sphere (one regarding workers' conditions and two regarding animal welfare).

❖ **Eco-labels related to the environmental sphere**: as observed in the literature and confirmed by the supermarket research, eco-labels related to the environmental sphere are the most widely used in the food sector and, specifically, in the dairy sector. One of the most adopted certifications is the Mixed Forest Stewardship Council (FSC). This indicates that at least 70 percent of the paper and wood employed to manufacture the product come from recycled material and from controlled wood (legally harvested, respecting native peoples and safeguarding forest biodiversity) (FSC, 2023). Another category of ecological certifications are carbon labels (e.g., Carbon Neutral, Carbon Trust), which attest that industries have taken measures to minimize CO_2 emissions from their production.

Among organic certifications, the most widely used has been EU Organic, which certifies that 95 percent of ingredients are of organic origin, thus produced without artificial chemicals (e.g., pesticides, fertilizers, GMOs) (Eco-label Index, 2023; Rana & Paul, 2017).

Fig. 2: From the left, FSC MIX, EU Organic, Carbon Neutral, Carbon Trust eco-labels, used in the preliminary study (Carbon Neutral, 2023; Carbon Trust, 2020; Eco-label Index, 2023a; FSC, n.d.)

❖ **Eco-labels related to the social sphere**: regarding the social dimension, despite the growing consumer interest and relevance of this aspect in the dairy sector, field research has found that few companies currently report information about it on milk packages. Some mention their contribution in supporting certain foundations at the local level (e.g., Parmalat sustains the Umberto Veronesi foundation), while only one type of milk (by Coop, marked with the name of the distributor) informs about workers' conditions, not through an eco-label, but through the following claim: "Coop products are made without discrimination or exploitation of labour."

While this is backed up by Coop' s adherence to standards related to health and safety issues (SA certifications), the lack of a clear signal/eco-label to inform the customer undermines the effectiveness and credibility of the claim (Coop, 2023; SAI, 2023).

Regarding animal welfare, field research has identified two main types of eco-labels that guarantee animal welfare in livestock farms: the certification issued by CSQA (Agri-food Quality Safety Certification), and the certification held by the Italian Livestock Breeders Association and certified by the Department of Agri-food Quality, a third-party certifying body of the Livestock Breeders System. Both certifications refer to a set of requirements established by the National Reference Center for Animal Welfare and accessible through the Classyfarm system (e.g., hygiene, number of employees, feeding, etc.) (AIA, 2020; Bertocchi, 2019; CSQA, 2023b; Laura Saggio, 2020).

Fig. 3: Two certifications related to animal welfare, used in the preliminary study (CSQA, 2023; L'Informatore Agrario, 2018)

Finally, through a questionnaire administered on Qualtrics XM to 96 respondents in March, 84 of whom actively participated, it was found that, with reference to the four environmental certifications mentioned above (FSC, Carbon Trust, Carbon Neutral and EU Organic), respondents had more knowledge about two of them, FSC and EU Organic. Knowledge was tested, as in a previous feasibility study prepared for the European Commission, (Helmut Sengstschmid et al., 2011), by showing a picture for each of the labels, followed by a multiple choice with these possible answers: "I remember having seen it, I know its meaning, I bought a product with this eco-label, I don't know the label".

By looking at the table of the descriptive statistics relative to frequencies it was clear that the best-performing eco-labels in terms of recall were the FSC label and the EU Organic, as more than one-third of the respondents said they remembered having seen them before (FSC = 36,9%; EU Organic = 36,9%; Carbon Trust = 20,2%; Allevamenti del benessere = 20,2%; Carbon neutral = 10,7%; CSQA = 9,5%). A similar trend was observed with regard to previous purchases: EU organic was the one scoring highest followed by FSC, while for the remaining eco-labels, less than 10% of the respondents stated that they had previously purchased products branded with the label

examined (EU Organic = 28,6%; FSC = 20,2%; CSQA = 9,5%; Allevamenti del benessere = 4,8%; Carbon Trust = 2,4%; Carbon Neutral = 2,4%). Finally, almost 60% of the respondents stated that they did not know the following eco-labels (Carbon Neutral = 73,8%; Carbon Trust = 66,7%; CSQA = 65,5%; Allevamenti del benessere = 60,7%), while greater knowledge was detected about FSC and EU Organic, as 31% of respondents declared they did not to know the first and only 22,6% stated not knowing the second.

Although the level of knowledge concerning the two certifications related to animal welfare (the certification issued by CSQA and the certification issued by the Department of Agribusiness Quality) was rather limited, given the interest shown in previous studies regarding animal welfare, which was also confirmed in the questionnaire, it was decided to keep among the stimuli the certification related to animal welfare that among the two was clearer: Allevamenti del benessere, issued by the Department of Agribusiness Quality, as it used less abbreviations (Latte Sano, 2023). These, in fact, as reported in the previous literature, are less intuitive (Payne et al., 2013).

Regarding the social dimension, given the lack of a milk-specific eco-label that certifies the respect for workers and fair wages, it was decided to use the Coop's generic claim, mentioned earlier, presenting it first alone and then together with the SA8000 Certification name to investigate whether the presence of the certification would increase its credibility and thus the purchase intention for the product. In fact, looking at the Paired Sample T-Test table, it was possible to see that subjects exposed to the claim plus certification vs claim alone had a higher purchase intention (mean value claim plus certification = 4,05; mean value claim = 3,82) and the difference between the two conditions was statistically significant (p-value < α = 0,05). Thus, the results show the importance of disclosing the certification name to increase the credibility of the eco-label/sustainability claim.

Fig. 4: On the left, Coop claim related to the social sustainability dimension (Torazza, 2017); On the right same picture with the name of the SA 8000 certification (own elaboration), both images were used in the preliminary study

As for the specific eco-label used for the social dimension (in relation to workers), it was felt that Coop's claim, not being a recognized eco-label, might be less familiar to consumers. Therefore, it was decided to opt for the Fair-Trade eco-label. Although it is not usually used for milk, but for

other products (e.g., coffee, tea, chocolate), for the purposes of the following study it is more functional. In fact, globally, Fair Trade is one of the most recognized brands and one in which consumers place the most trust (Fair Trade, 2023; Fairtrade International, 2022).

Fig. 5: Fair Trade Eco-label, used in the preliminary study (Fairtrade International, 2023)

The main purpose of this analysis, in fact, is to compare the preference for a combination of better-known eco-labels versus a new, more informative, and graphically clear meta-label. At the end of this preliminary study, therefore, 4 eco-labels were selected, two related to the environmental dimension (FSC, EU Organic), two to the social sphere (Benessere Animale, Fair Trade).

3.2 METHODOLOGICAL APPROACH

3.2.1 METHODOLOGY AND STUDY

The present experimental study consists of a conclusive causal between-subjects 2X1 research design. The results of the experiment are represented by responses to a questionnaire obtained through a self-administered survey conducted in Italy during May 2023 through use of the online platform Qualtrics XM. Survey participants were selected by adopting a non-probability sampling methodology. Specifically, it was decided to use a convenience sampling method by taking advantage of the ease and rapidity of access and selection of processing items. In fact, this technique involves no economic cost and is advantageous in terms of high data collection speed and high response rate.

Considering the target sample, it was decided to include respondents of all ages, collecting data from both female and male individuals to obtain the most representative sample of respondents possible. In addition, to ensure greater understanding, the questionnaire was administrated in English, but with the option of reading it in Italian as well.

3.2.2 PARTICIPANTS AND SAMPLING PROCEDURE

The survey was distributed to 338 respondents, of whom 256 individuals actively participated in the experimental study by fully and completely answering all questions within the questionnaire. The remaining 82 questions, out of which 76 were incomplete and 6 in preview, were first selected and then discarded from the dataset during the data cleaning procedure. Respondents were contacted through an anonymous link generated by Qualtrics' online platform and sent later through instant messaging applications and social media as main distribution channels (WA, Instagram).

The sample population reached by the survey included mainly college students and workers. Therefore, the average age of the respondents was found to be 46 (SD = 16,94), although the age range fluctuated between a minimum of 18 years and a maximum of 76 years. As for the gender of the respondents, the prevailing gender was found to be female, represented by 59,4 %, while the male gender was characterized by 39,1 %. The remaining 1,5% of respondents preferred not to identify with a specific gender.
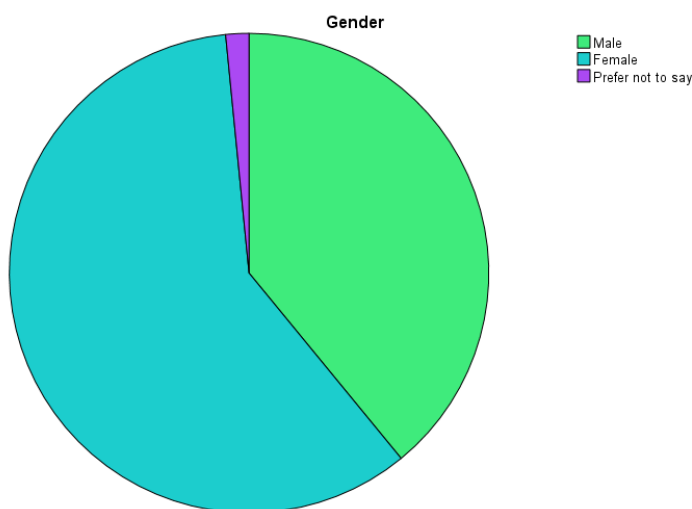
Fig. 6: Pie chart "Gender", main study, analysis SPSS (own elaboration)

Regarding the level of education, the analysis showed that 50% of the respondents have a master's degree, 16% have a bachelor's degree, 14,8% have a high school diploma, 10,2% have attended a few years of college, 4,3% have a professional degree, 3,1% have earned a doctorate or equivalent, and 1,6% have a middle school diploma. While, in terms of income, 25,4 % of respondents

reported earning an annual salary between 20-29k, 21,1% less than 10k, 14,5% between 10 and 19k, and 13,3% between 30 and 39k.
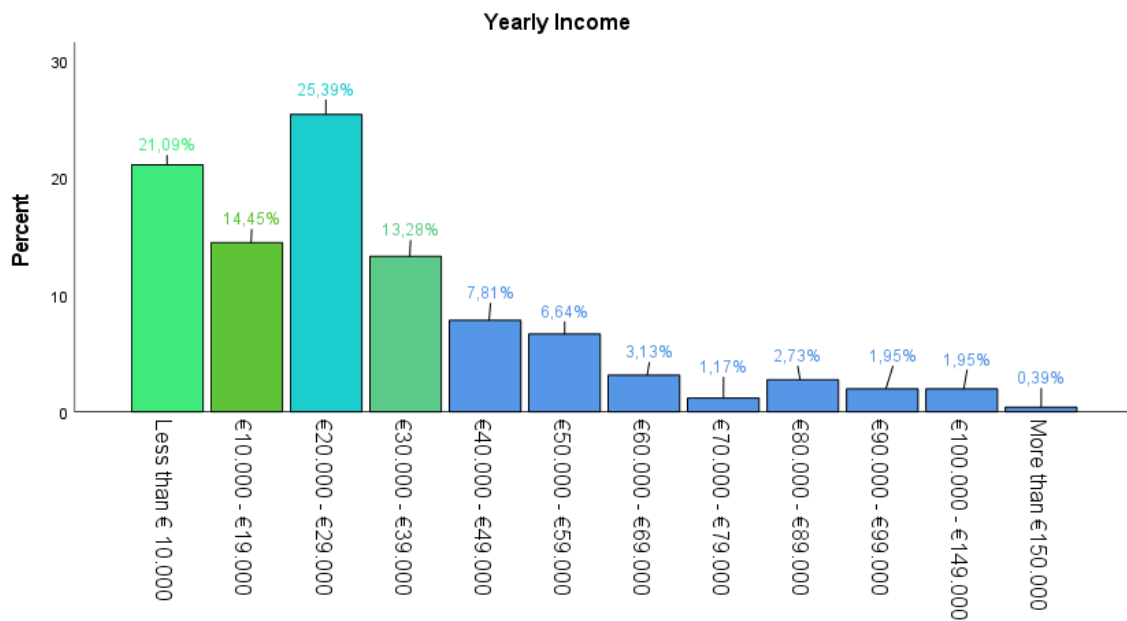
Fig. 7: Bar chart "Income", main study, analysis SPSS (own elaboration)

Finally, a food preference question was also included with the options "Vegan," "Vegetarian," "Lactose Intolerant," and "None of the above." The results showed that most respondents had no particular food preferences (78% answered "None of the above," 17,2 % were "Lactose Intolerant", and 4,7 % were "Vegetarian").

3.2.3 DATA COLLECTION AND QUESTIONNAIRE COMPOSITION

To conduct the experimental study, it was necessary to develop a questionnaire consisting of 16 questions of which 11 were specific and 5 were demographic. To manipulate the independent variable (label type: meta-label vs. eco-label combination), it was essential to make two visual stimuli, one different from the other. Before selecting the visual stimuli to be used within the

questionnaire, a preliminary study was conducted. In particular, the dairy sector was considered as the target sector.

The combination of these 4 eco-labels (FSC, EU Organic, Benessere Animale, Fair Trade) displayed on a milk package and then zoomed in, represents the first scenario during the main study. The second scenario, on the other hand, consists of a meta-label, placed likewise on a milk package and then enlarged to facilitate readability.

The meta-label, as already anticipated in the previus literature as well as in real-life examples, such as Granarolo's "Bontà responsabile" logo, summarizes information concerning different sustainability dimensions (environmental and social) and multiple eco-labels (the same four certifications referred to in the eco-label combination) in one salient and clear label.

To this end, the integration of icons and text makes the metalbel both eye-catching and informative (Engels et al., 2010; Jaud & Melnyk, 2020). In addition, the way sustainable attributes are presented contributes to making the meta-label more intuitive. Indeed, as in the 2019 study by Kocsis & Kuslits, the explation of each ecoalbel and the related certification are grouped by subject benefitting from the sustainable practise (e.g. consumers, environment, animals or workers) (Kocsis & Kuslits, 2019).

Fig. 8: Scenario 1 proposed in the pre-test and main study: combination of eco-labels
(own elaboration)

Fig. 9: Scenario 2 proposed in the pre-test and main study: meta-label (own elaboration)

As mentioned above, data (relative to main study) were collected through a questionnaire, divided into 4 main parts. At the beginning of the survey, a brief introduction was included with a presentation of myself, an explanation of the academic purpose, followed by the estimated duration of the survey. In addition, after entering the university's credentials, compliance with privacy regulations regarding anonymity and data management was ensured.

The second part of the survey was a randomized block consisting of two separate scenarios. In fact, the randomization process was essential within the structure of the questionnaire to obtain a uniform number of exposures to both visual stimuli. In addition, to avoid possible cognitive bias and conditioning related to brand sentiment, product mock-ups were used for both scenarios. Specifically, both simulations were carried out using Canvas, Power Point, and Paint.

The third part of the survey was presented to the respondents after subjecting them to the observation of one of the two scenarios. This block of the questionnaire consisted of 11 questions: the first three related to the first dependent variable (willingness to buy), another question related to the second dependent variable (willingness to pay), three more questions related to the mediator (visual processing fluency) and finally four questions related to a possible control variable (sustainable consumption purchases). All questions were scored using Likert scales based on 7-point ratings.

Specifically, the first scale, related to the dependent variable 1(WTB) was derived from the 5-item scale employed by Dodds et al. in 1991, from which two items were removed (Dodds et al., 1991). These referred to the willingness to purchase the product at a set price.

Instead, the study, through the second dependent variable (WTP), wants respondents to indicate their preferred price for a one-liter carton of milk, considering a range of 7 possible alternatives, from a market price of 1,20 €, to a maximum price of 2,10 € through gradual increments of 0,15 cents. The scale was inspired by the model adopted by Duckworth et al. in 2022 (Duckworth et al., 2022).

The third scale, related to the mediator, was derived from the three-item "Visual Processing Fluency" scale, which was prevalidated by Labroo et al. in 2008. Two items of the scale are related to perceptual fluency and one to conceptual fluency (Labroo et al., 2008).

Finally, for the control variable, related to previous green purchases, three out of four scale items were inspired by the scales adopted by Conejo et al. and Munasinghe et al. in 2021, while the stetement related to the social dimension of sustainability was taken from a scale adopted by Polzin et al. in 2023 (Conejo et al., 2021; Munasinghe & Shantha, 2021; Polzin et al., 2023).

All scales were readjusted according to the needs of the experimental research. Finally, the fourth and final part of the questionnaire was made up by the block devoted to demographic questions, which included: food preferences, gender, age, education, and income.

3.2.4 STIMULI VALIDATION: PRE-TEST

Before conducting the main study, a pre-test was developed to test the validity of the experiment conditions. Data were collected through a questionnaire, conducted through the online platform Qualtrics, and administered to 62 people (after dataset cleaning) aged between 22 and 73 years.

The survey consisted of four main parts: introduction, with explanation of the research purpose, randomized presentation of one of the two stimuli (mock-up of milk package with combination of eco-labels/meta-label) and followed by questions, regarding the stimulus just seen. Participants were asked whether they found the label they had just seen difficult to understand, complicated or unclear. Label comprehension was evaluated through a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree), using the three-item scale prevalidated by Pieters et al. in 2010 (Pieters et al., 2010). Finally, two demographic questions were asked, regarding gender and age.

These revealed that the average age of the respondents was 43 years, while the prevalent gender was female (64,5% female, 35,5% male).

The data collected through the pre-test questionnaire were exported to SPSS for analysis. The results of the reliability test ($\alpha = 0,971$) demonstrated the reliability of the scale related to label comprehension. To test the success of the manipulation, a comparison of the averages was conducted by applying an independent-sample t-test as an analysis to see whether there was a statistically significant difference between the averages of the groups according to the visual condition they were exposed to. After running the test, looking at the descriptive statistics table, it could be seen that the group of respondents subjected to the scenario coded with 0 (ecological label combination) recorded a mean value of 5,4828 (SD = 1,56) while the respondents exposed to the condition coded with 1 (meta-label) recorded a mean value of 2,1616 (SD=1,26). Furthermore, considering the independent sample test table, a relative p-value for the t-test of 0,001 was statistically significant. Therefore, a statistically significant difference between the group averages could be seen, confirming the success of the manipulation (label comprehension) relative to the independent variable. Thus, given the success of the pre-test, it was possible to conduct the main study.

3.3 EXPERIMENTAL RESULTS

3.3.1 DATA ANALYSIS

The data for the main study, as for the pre-test, were then exported for analysis, from the Qualtrics XM platform on the Statistical Package for Social Science (SPSS) software.

Initially, it was decided to perform three exploratory Factor Analyses, to examine and validate the items of the scales used in the conceptual model (the first dependent variable, willingness to buy; the mediator, visual processing fluency; the control variable, sustainable purchases). Principal Component Analysis was performed as an extraction method by applying Varimax as a rotation technique. To decide how many factors to extract, the Total Explained Variance table was observed, verifying that, according to Kaiser's rule, the Eigenvalues were greater than 1 and the Cumulative Percent Variance was greater than 60%. Furthermore, the table of Communalities and the Component Matrix were observed. Specifically, all items were found to have an extraction value greater than 0,5 and a loading value greater than 0,3. Therefore, it was decided to retain all the items making up the scales.

After validating all scales, a Reliability Analysis was conducted, using Cronbach's alpha index, to verify the overall consistency of the adopted scales. In particular, the value of the Cronbach's alpha of all three scales was observed, making sure that it was above 60 percent ($\alpha > 0,6$). A value of 0,964 was found for the scale of the first dependent variable (WTB); a value of 0,928 was recorded for the mediator (Visual Processing Fluency); and a value of 0,910 was recorded for the scale related to the control variable (Sustainable Purchases). Therefore, the internal consistency of all three scales was excellent, with a high probability of producing similar results under consistent conditions.

In addition, the KMO test related to Sampling Adequacy was performed, verifying that it was greater than 0,6. Specifically, a value of 0,776 was found for the scale of the first dependent variable (WTB); a value of 0,752 was recorded for the mediator (Visual Processing Fluency); and a value of 0,839 was recorded for the scale related to the control variable (Sustainable Purchases). Therefore, in all cases the level of adequacy was found to be more than adequate. After that, Bartlett's test of sphericity was performed, which was statistically significant, finding in all cases a p-value of 0,001 (p-value $< \alpha = 0,05$).

3.2.2 HYPHOTESES RESULTS

After conducting both factor analyses and reliability tests, the main hypotheses of the conceptual research model were examined so that their statistical significance and therefore their related success could be both confirmed or rejected. Specifically, the first hypothesis argued that the use of a meta-label, rather than a combination of eco-labels, on a product's packaging would positively influence customers' purchase intention for the product (WTB, WTP). The second hypothesis further argued that Visual Processing Fluency mediates the relationship between eco-label format (meta-label vs combination of eco-labels) and purchase intention (WTB, WTP) for the product. Specifically, the meta-label would be more appealing and easier to process, leading to greater purchase intention, compared to the combination of eco-labels.

H1

First dependent variable: Willingness to buy

To test the significance of the direct hypothesis (H1), a comparison of means was conducted, applying a One-Way ANOVA to test the effect of the independent variable (eco-label format) towards the first dependent variable (willingness to buy). Specifically, the independent variable

(eco-label format) is nominal categorical in nature and is separated into two different conditions coded as 0 (combination of eco-labels) and coded as 1 (meta-label), while the first dependent variable is metric.

After performing the Anova, looking at the table of descriptive statistics, it was possible to see that the group of respondents subjected to the scenario identified as combination of eco-labels (128/256) had a mean value of 3,6016 (SD = 1,79) while the group of those exposed to the condition coded as meta-label (128/256) had a mean value of 5,6042 (SD = 1,26). Furthermore, looking at the ANOVA table, a p-value related to the F-test (F = 106,15) of 0,001 was found to be statistically significant (p-value < α = 0,05). Therefore, there was a statistically significant difference between the group means, confirming the effect of X versus Y (first dependent variable). Thus, the direct hypothesis H1(main effect), related to the first dependant variable (WTB), was proved.

One-way Anova (DV1)

Descriptives

DV1

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Combination of ecolabels (0)	128	3,60156	1,79825	,15894	3,2870	3,9161	1,00	7,00
Meta-label (1)	128	5,6042	1,26584	,11189	5,3828	5,8256	1,00	7,00
Total	256	4,6029	1,84799	,11550	4,3754	4,8303	1,00	7,00

Anova

DV1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	256,667	1	256,667	106,147	<,001
Within Groups	614,180	254	2,418		
Total	870,847	255			

Fig. 10: SPSS Analysis, One-way Anova, estimating the effect of eco-label format (meta-label vs combiantion of eco labels) on the first dependent variable, willingness to buy.

Second dependent variable: Willingness to pay

To test the effect of the independent variable (eco-label format) towards the second dependent variable (willingness to pay) first a descriptive analysis was conducted. The dataset was filtered so that first the cases where the independent variable was equal to zero (combination of eco-labels) were selected. Using the bar chart related to frequencies (in percentages), the price distribution that consumers (who saw the combination of eco-labels) were willing to pay for a one-liter carton of milk was observed, considering seven possible prices between 1,20 and 2,10 euros. The mode was 1,20 euros, indicated as the preferred price by 30,5 percent of consumers, while the mean was 1,50 euros.

Fig. 11: SPSS Analysis, bar chart representing the prices respondents who saw the combination of eco-labels are willing to pay for a 1 litre carton of milk.

Second, the dataset was filtered to select those cases where the independent variable was equal to one (meta-label). Through the bar chart related to frequencies, the price that consumers who saw the meta-label were willing to pay for a one-liter package of milk was observed, considering the same price range. The mode was higher in this case, 1,80 euros (a price preferred by 26,6 percent of consumers), while the mean was between 1,65 and 1,80 euros.
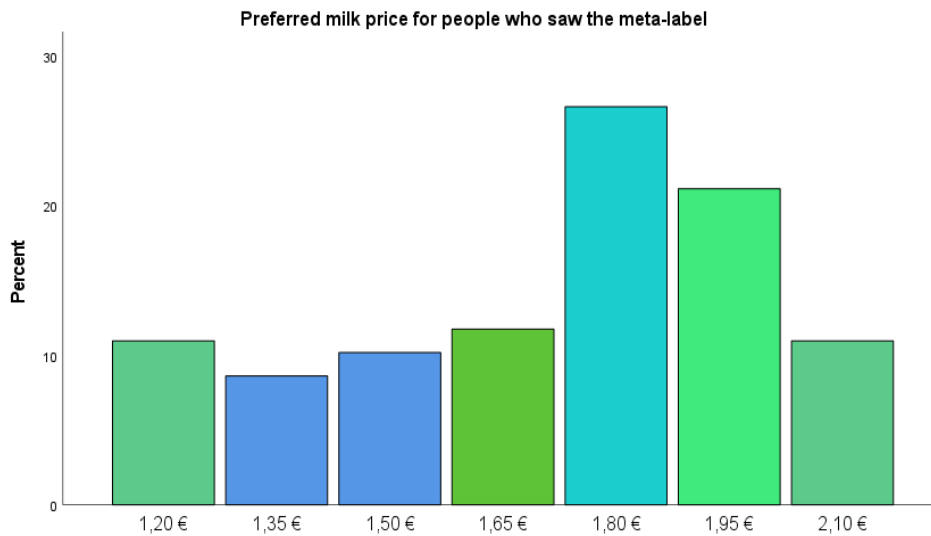
Fig. 12: SPSS Analysis, bar chart representing the prices respondents who saw the meta-label are willing to pay for a 1 litre carton of milk.

Therefore, to verify that the difference between the two means related to WTP in the two scenarios was significant and thus the direct hypothesis H1 related to the second dependent variable was verified, a comparison of means was conducted, applying a One-Way ANOVA as analysis. Specifically, the independent variable (eco-label format) is nominal categorical in nature and is distinguished into two different conditions coded as 0 (combination of eco-labels) and coded as 1 (meta-label), while the second dependent variable is metric.

After performing the Anova, looking at the descriptive statistics table, it was possible to see that the group of respondents subjected to the scenario identified as 0, i.e. the combination of ecolabels, (128/256) had a mean value of 2,73 (SD = 1,68) while the group of subjects exposed to the condition coded as 1, i.e. the metalabel, (128/256) had a mean value of 4,41 (SD = 1,84).

Furthermore, considering the ANOVA table, a p-value related to the F-test (F = 58,86) of 0,001 was found to be statistically significant (p-value < α = 0,05). Therefore, there was a statistically significant difference between the means of the groups, confirming the effect of X towards Y (the second dependent variable). Thus, the direct hypothesis H1(main effect), related to WTP was proved as well.

One-way Anova (DV2)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Combination of ecolabels (0)	128	2,73	1,678	,148	2,43	3,02	1	7
Meta-label (1)	128	4,41	1,838	,162	4,09	4,74	1	7
Total	256	3,57	1,949	,122	3,33	3,81	1	7

DV2=WTP

Anova

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	182,250	1	182,250	58,859	<,001
Within Groups	786,484	254	3,096		
Total	968,734	255			

Fig. 13: SPSS Analysis, One-way Anova, estimating the effect of eco-label format (meta-label vs combiantion of eco-labels) on the second dependent variable, willingness to pay.

H2

To test the statistical significance of the indirect hypothesis (H2a-H2b), a regression analysis was conducted by applying MODEL 4 of Process macro, Version 3.4 (developed by Andrew Hayes) to test the mediating effect caused by visual processing fluency, towards the relationship between the independent variable (label type: meta-label vs combination of eco-labels) and the dependent variables (WTB and WTP, analysed separately). In addition, the effect of the covariate, Sustainable Purchases, on the mediator and dependent variables was also analysed simultaneously.

To test the success of the mediation effect, it was necessary to distinguish it into two different relationships: a first effect between the independent variable and the mediator, (H2a) (and between covariate and mediator) and a second effect between the mediator and the dependent variables, (H2b) (and between covariate and dependent variables). This subdivision reflects the typical decomposition of the effect of mediation into direct effect (c') and indirect or mediated effect (a*b), which summarizes the incidence of the mediator in the regression. The total effect of mediation (c) is thus derived from the sum of direct effect (c') and indirect effect (a*b). Specifically, the

indirect effect first analyses the effect of the independent variable on the mediator (a path), then the effect of the mediator on the dependent variable (b path), and finally their combination (a*b).

In order to prove the statistical significance of both hypotheses (H2a-H2b), a 95% confidence interval was adopted, with a reference value α of 5%. In addition, it was necessary to make sure that the extremes of the confidence interval (LLCI = Lower level of confidence interval; ULCI = Upper level of confidence interval) for each hypothesis respected the concordance of sign (both positive or both negative) so that they did not contain 0. Finally, to assess sign and magnitude of each effect, the β coefficients of the regression analysis of both relationships between the variables were examined. First the mediation effect with reference to DV1 (WTB) was analysed, and secondly the mediation effect with reference to DV2 (WTP).

H2.a (WTB)

Regarding the first part of the indirect effect (effect of IV on Mediator) through the observation of the output in SPSS, it was possible to note a p-value relative to IV equal to 0,0000, a favorable confidence interval (LLCI = 1,4228; ULCI = 2,1725) and a positive regression coefficient β, equal to 1,7976 (standard error [SE] = 0,1903). Therefore, this section of the direct effect was found to be statistically significant, confirming Hypothesis H2.a. In addition, also the covariate "Sustainable Purchases" was found to significantly affect the mediator (β = 0,3764; standard error [SE] = 0,0835; 95% confidence interval CI = [0,2119; 0,5409]).

```
***************************************************************************
OUTCOME VARIABLE:
 MED

Model Summary
          R         R-sq        MSE          F        df1        df2          p
      ,5890        ,3469     2,2090    67,1996     2,0000   253,0000      ,0000

Model
              coeff          se          t          p        LLCI        ULCI
constant    1,5043        ,4613     3,2606      ,0013       ,5957      2,4128
IV          1,7976        ,1903     9,4440      ,0000      1,4228      2,1725
SUSTAINA     ,3764        ,0835     4,5068      ,0000       ,2119       ,5409
***************************************************************************
```

Fig. 14: SPSS Analysis, PROCESS, mediating effect caused by visual processing fluency, towards the relationship between the independent variable (label type: meta-label vs combination of eco-labels) and the first dependent variables (WTB)

H2.b (WTB)

Regarding the second part of the indirect effect (effect of Mediator on DV1), through the observation of the output in SPSS, it was possible to note a p-value relative to the Mediator equal to 0,0000, a favorable confidence interval (LLCI=0,5674; ULCI=0,7426) and a positive regression coefficient β, equal to 0,6550 (standard error [SE] = 0,0445). Therefore, this section of the direct effect was found to be statistically significant, confirming hypothesis H2.b. In addition, also the covariate "Sustainable Purchases" was found to significantly affect the first dependant variable (WTB) (β = 0,3038; standard error [SE] = 0,0614; 95% confidence interval CI = [0,1829; 0,4248]).

```
**************************************************************
OUTCOME VARIABLE:
 DV1

Model Summary
          R        R-sq        MSE          F        df1        df2          p
      ,8248       ,6802      1,1051    178,6797     3,0000   252,0000       ,0000

Model
             coeff         se          t          p        LLCI        ULCI
constant    -,2981       ,3331     -,8949       ,3717      -,9541       ,3579
IV           ,5521       ,1566     3,5261       ,0005       ,2437       ,8605
MED          ,6550       ,0445    14,7300       ,0000       ,5674       ,7426
SUSTAINA     ,3038       ,0614     4,9485       ,0000       ,1829       ,4248

*************************** TOTAL EFFECT MODEL ***************************
```

Fig. 15: SPSS Analysis, PROCESS, mediating effect caused by visual processing fluency, towards the relationship between the independent variable (label type: meta-label vs combination of eco-labels) and the first dependent variables (WTB)

The direct effect of the mediation was significant (β = 0,5521; standard error [SE] = 0,1566; 95% confidence interval CI = [0,2437; 0,8605]), as well as the indirect effect (β = 1,775; Boot standard error [BootSE] = 0,1834; 95% confidence interval CI = [0,8346; 1,5523]), and therefore also the total effect (β = 1,7296; standard error [SE] = 0,1833; 95% confidence interval CI = [1,3686; 2,0905]). Considering the results obtained, the overall success of the mediation effect could be confirmed. Specifically, since b (effect of mediator on DV1) is significant, partial mediation was proved.

Therefore, it has emerged that having previously bought green products (Covariate) makes the meta-label more appealing and easier to understand (mediator), which then leads to higher purchase intention (WTB), compared to the scenario with the combination of eco-labels.

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p        LLCI       ULCI
     1,7296      ,1833      9,4357      ,0000      1,3686     2,0905

Direct effect of X on Y
     Effect         se          t          p        LLCI       ULCI
      ,5521      ,1566      3,5261      ,0005       ,2437      ,8605

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI    BootULCI
MED        1,1775      ,1834      ,8346      1,5523

*********************** ANALYSIS NOTES AND ERRORS ***********************
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Fig. 16: SPSS Analysis, PROCESS, mediating effect caused by visual processing fluency, towards the relationship between the independent variable (label type: meta-label vs combination of eco-labels) and the first dependent variables (WTB)

H2.a (WTP)

Regarding the first part of the indirect effect (effect of IV on Mediator) through the observation of the output in SPSS, it was possible to note a p-value relative to IV equal to 0,0000, a favorable confidence interval (LLCI = 1,4228; ULCI = 2,1725) and a positive regression coefficient β, equal to 1,7976 (standard error [SE] = 0,1903). Therefore, this section of the direct effect was found to be statistically significant, confirming Hypothesis H2.a.

```
****************************************************************************
OUTCOME VARIABLE:
 MED

Model Summary
          R        R-sq        MSE          F         df1        df2          p
      ,5890       ,3469     2,2090     67,1996     2,0000   253,0000       ,0000

Model
              coeff         se          t          p        LLCI       ULCI
constant     1,5043      ,4613      3,2606      ,0013       ,5957     2,4128
IV           1,7976      ,1903      9,4440      ,0000      1,4228     2,1725
SUSTAINA      ,3764      ,0835      4,5068      ,0000       ,2119      ,5409

****************************************************************************
```

Fig. 17: SPSS Analysis, PROCESS, mediating effect caused by visual processing fluency, towards the relationship between the independent variable (label type: meta-label vs combination of eco-labels) and the second dependent variables (WTP)

In addition, also the covariate "Sustainable Purchases" was found to significantly affect the mediator (β = 0,3764; standard error [SE] = 0,0835; 95% confidence interval CI = [0,2119; 0,5409]).

H2.b (WTP)

Regarding the second part of the indirect effect (effect of Mediator on DV2), through the observation of the output in SPSS, it was possible to note a p-value relative to the Mediator equal to 0,0000, a favorable confidence interval (LLCI = 0,4246; ULCI = 0,6740) and a positive regression coefficient β, equal to 0,5493 (standard error [SE] = 0,0633). Therefore, this section of the direct effect was found to be statistically significant, confirming hypothesis H2.b. In addition, also the covariate "Sustainable Purchases" was found to significantly affect the second dependant variable (WTP) (β = 0,2035; standard error [SE] = 0,0874; 95% confidence interval CI = [0,0313; 0,3756]).

```
************************************************************************
OUTCOME VARIABLE:
 DV2_1

Model Summary
          R        R-sq        MSE          F        df1        df2          p
      ,6459       ,4172     2,2404    60,1320     3,0000   252,0000      ,0000

Model
               coeff         se          t          p       LLCI       ULCI
constant      -,2718      ,4743     -,5731      ,5671    -1,2059      ,6622
IV             ,4966      ,2229     2,2274      ,0268      ,0575      ,9356
MED            ,5493      ,0633     8,6755      ,0000      ,4246      ,6740
SUSTAINA       ,2035      ,0874     2,3273      ,0207      ,0313      ,3756

*********************** TOTAL EFFECT MODEL ***************************
```

Fig. 18: SPSS Analysis, PROCESS, mediating effect caused by visual processing fluency, towards the relationship between the independent variable (label type: meta-label vs combination of eco-labels) and the second dependent variables (WTP)

The direct effect of the mediation was significant (β = 0,4966; standard error [SE] = 0,2229; 95% confidence interval CI = [0,0575; 0,9356]), as well as the indirect effect (β = 0,9874; Boot standard error [BootSE] = 0,1683; 95% confidence interval CI = [0,6843; 1,3424]), and therefore also the total effect (β = 1,4840; standard error [SE] = 0,2180; 95% confidence interval CI = [1,0546; 1,9134]).

Considering the results obtained, the overall success of the mediation effect could be confirmed. Specifically, since b (effect of mediator on DV2) is significant, partial mediation was proved. Therefore, it has emerged that having previously bought green products (Covariate) makes the meta-label more appealing and easier to understand (mediator), which then leads to higher purchase intention (WTP), compared to the scenario with the combination of eco-labels.

```
************* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect        se        t         p       LLCI      ULCI
     1,4840      ,2180    6,8066     ,0000    1,0546    1,9134

Direct effect of X on Y
     Effect        se        t         p       LLCI      ULCI
      ,4966      ,2229    2,2274     ,0268     ,0575     ,9356

Indirect effect(s) of X on Y:
          Effect    BootSE   BootLLCI   BootULCI
MED        ,9874     ,1683     ,6843     1,3424

********************** ANALYSIS NOTES AND ERRORS ***********************
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Fig. 19: SPSS Analysis, PROCESS, mediating effect caused by visual processing fluency, towards the relationship between the independent variable (label type: meta-label vs combination of eco-labels) and the second dependent variables (WTP)

3.4 DISCUSSION

3.4.1 CONCLUSIONS AND THEORETICAL CONTRIBUTIONS

A large number of studies have pointed to the growing interest of consumers in various aspects of sustainability, and the need for more information about the environmental impact of products at the time of purchase (Butler, 2018). In response to this need, it has become commonplace, for several years already, to use eco-labels on product packaging, which were created for the purpose of transparently communicating the company's sustainable commitment (European Commission, 2022; Taufique et al., 2014; US EPA, 2014).

However, to date, the effectiveness of such communication tools is limited, as evident by the low market share of products marked with eco-labels (Rex & Baumann, 2007; Yokessa & Marette, 2019). The main reasons include consumers-related factors (such as a lack of knowledge about certifications and eco-labels), product-related factors (such as the tendency to give more weight to price and quality , as opposed to product sustainability) or label-related reasons : lack of label recognition, due to the excessive number of eco-labels in circulation, problems related to visual

appearance (e.g. confusing design, lack of visibility) and meaning (lack of credible information explaining the purpose of the label) (Monge et al., 2020; Flores & Jansson, 2022). To address these issues (especially the problems of eco-labels overcrowding, and lack of enough information) the study proposed a new type of ecological label, the meta-label. This summarizes information related to different aspects of sustainability and different eco-labels into a single, clearer, more appealing, and informative label (Atkinson & Rosenthal, 2014; Torma & Thøgersen, 2021)

One of the main obstacles that could limit the effectiveness of the meta-label, is related to the lack of familiarity, an important factor in choosing a green product. Therefore, the main purpose of the study was to compare, in terms of label comprehension and willingness to buy, a combination of more familiar eco-labels versus a new meta-label that summarized the same certifications, but in a clearer and more comprehensive way. In particular, the following hypotheses were developed:

H1: The use of a meta-label on product packages (vs combination of eco-labels) positively influences customers' purchase intention (WTP, WTB) for the product.

H2: Visual processing fluency mediates the relationship between meta-label (vs combination of eco-labels) and purchase intention (WTP, WTB) for the product. In particular, the meta-label has a positive effect on visual processing fluency, which in turns increases the purchase intention for the product.

To implement this comparison, it was first necessary to understand which sustainability dimensions consumers were most concerned about. The literature, as well as the preliminary study, found an interest for environmental and social dimensions, both of which are highly significant aspects in the dairy sector. This finding is in line with previous studies claiming that many consumers tend to give the same importance to different sustainability dimensions and would therefore be satisfied with a unique certification (Janßen & Langen, 2017). Therefore, a field research survey was conducted to understand which eco-labels are most widely used in the dairy sector.

These eco-labels were then used in a preliminary questionnaire, which showed that, regarding the environmental dimension, two eco-labels are better known compared to the others: the FSC and EU Organic. As for the social dimension, considering the interest revealed by the literature for this aspect, two labels were chosen, one related to animal welfare (the certification held by the Italian Livestock Breeders Association and certified by the Department of Agri-food Quality) and one related to fair working conditions (the Fair Trade, given its recognition at the global level and the

willingness to pay a premium for it, as revealed by several studies) (Fairtrade International, 2023; Guntzburger et al., 2021; Lappeman et al., 2019; Papoutsi et al., 2023; Peiró-Signes et al., 2022).

Second, once the most important sustainable attributes and the corresponding best-known eco-labels were identified, a pre-test was conducted, which showed that the meta-label was clearer and easier to understand than the combination of the eco-labels. Then, once the stimuli were validated, it was observed from the main study that consumers had a higher WTB for the meta-label, which also corresponded to a higher WTP: on average, respondents who saw the meta-label expressed a WTP between €1,65 and €1,80, while those who saw the combination of eco-labels, expressed a lower WTP of €1,50. As much as the study was conducted in a hypothetical setting and the price differences, given the type of product (a pack of milk) are small, these are promising results that confirm hypothesis number one.

The second hypothesis, regarding the mediator, visual processing fluency, was also verified. Specifically, it was found that previously purchasing green products, and showing interest for both social and environmental dimensions, led to higher graphical and cognitive understanding of the meta-label, which then led to higher purchase intention (WTP, WTB) for the meta-label (compared to the combination of eco-labels).

These results are in line with a 2017 study conducted in Germany, which pointed out that 85 percent of consumers in the dairy sector would be satisfied with a single certification, for which they would be willing to pay a premium of 15 percent (Janßen & Langen, 2017b). In addition, the research results are in agreement with previous studies that highlight the importance of integrating images and text to facilitate the understanding of eco-labels. In fact, as much as familiar eco-labels were selected, consumers found the meta-label clearer than individual eco-labels. In terms of design, the meta-label was considered more appealing, eye catching and easier to process, in agreement with previous studies that argue that single eco-labels are simpler and more intuitive (Stampa & Zander, 2022).

In this regard, it is relevant to point out that although some previous studies and meta-analyses have defined the constitutive elements of a meta-label, such as addressing multiple aspects of sustainability and summarizing information on different eco-labels, from a graphical point of view, it is still being studied which is the most clear manner to summarize such information, therefore the following study proposed a novel idea for a meta-label ,based on previous studies concerning the graphics of logos, eco-labels, and some ideas for meta-labels.

In particular, several aspects have contributed to a clearer meta-label: the use of icons, whose advantages in terms of attractiveness and memorability have been emphasized in previous studies (Engels et al., 2010; Jaud & Melnyk, 2020), the use of the colour green, which is associated with sustainability and thus results in more positive product evaluations (Creusen & Schoormans, 2005; Pancer et al., 2017), the use of a round-shaped meta-label, by previous studies considered more 'sensitive in terms of customers' demand for green products, compared to the angular shape (Meiting & Hua, 2021), the symmetrical disposition of information, which according to previous studies, is easier to process, and therefore leads to more positive evaluations (Northey & Chan, 2020; Payne et al., 2013). The arrangement of sustainable attributes, by subject that benefits from sustainable practice, also makes the meta-label clearer, (Kocsis & Kuslits, 2019) and offers the advantage of showing the connection between different sustainability dimensions (Torma & Thøgersen, 2021).

3.4.2 MANAGERIAL IMPLICATIONS

The following study highlights several aspects that are relevant from a managerial perspective.

First, as previous studies have shown, consumers are willing to pay a higher premium for eco-labels that relate not only to the environmental dimension but also to the social one (Sherry Frey, 2023). However, it was clear from the supermarket research that currently the most used eco labels in the dairy sector are environmental labels related to the recycling of materials (FSC), which often have problems with visibility and positioning on the packaging, hence they go unnoticed.

In fact, it is interesting to note that EU Organic, although present on a limited number of milk packages, usually of biological products, has been recognized significantly more than FSC. Moreover, the literature has shown that consumers are more trusting of environmental certifications that cover the entire product life cycle rather than just one stage (e.g., packaging) (European Commission, 2022; Taufique et al., 2014; US EPA, 2014).

Regarding the social dimension, given the interest shown by consumers and the relevance of this aspect in the dairy sector, a clear and certified communication tool is needed to communicate this effort. The use of a single certification, if adopted consistently on products so as to become familiar, would obviate this problem. An example of a commitment to the environmental and social aspects of sustainability and graphic communication of this effort is Granarolo's "Bontà Responsabile" logo, which, however, can be improved in its format to be more clear, informative, and credible, as in the meta-label proposed by the following research.

From an informational point of view, it should be noted that despite the interest in sustainable issues, many consumers ignore the distinction between different certifications and therefore find it difficult to recognize certified eco-labels from vague claims. This undermines the credibility of sustainable labels and consumers' willingness to purchase related products (Darnall et al., 2018). It therefore becomes imperative for dairy industries to improve communication related to certifications.

Regarding label visibility, very interesting was an eye-tracking study conducted in 2018 that showed that 54 percent of consumers are habitual buyers and only 10 percent tend to read product information. Therefore, to increase the purchase of eco-labeled products, companies can invest in marketing campaigns to encourage consumers to try eco-labeled products.

These will be more likely to be selected in the future once they become part of regular shopping. In addition, regarding the placement of labels, it is important to position them near the information that consumers would be most likely to read, such as price, brand name, or ingredient list (Song et al., 2019).

Finally, it is worth noting that although a meta-label entails significant implementation costs on top of the existing labeling costs, there are significant benefits, in terms of WTB and WTP, as highlighted by the following study. In addition, from an ethical and environmental perspective, a single certification would lead to the adoption of higher sustainable standards that not only use existing resources more efficiently (through, for example, technological improvements, weak sustainability) but also reduce the exploitation of natural resources (strong sustainability) (Nikolaou & Kazantzidis, 2016).

3.4.3 LIMITATIONS AND FUTURE RESEARCH

Although the following study offers lots of food for thought, there are some improvements that can be considered. First, in terms of the methodology employed, an experimental methodology was adopted, which allows more responses to be obtained in the shortest possible time. To obtain more detailed insights, regarding consumer preferences and opinions regarding the introduction of a new environmental label, future research could integrate quantitative research with qualitative one, using, for example, in-depth interviews, focus groups and sentiment analysis. In addition, particularly insightful would be integrating traditional marketing techniques with neuromarketing tools, such as eye-tracking, to measure, through on-site research in supermarkets, consumers'

response to the meta-label (e.g., which aspects of the meta-label capture the most interest among consumers).

As for the sample selected, the study was conducted on a predominantly Italian sample, so in future research the results could be extended to a more international sample. In addition, previous studies have shown that younger generations (in particular Gen Z) and women are more concerned about sustainability issues, so it would be worthwhile to replicate the study only with these participants to see if there is a substantial increase in willingness to purchase.

In terms of the selected product, the following study focuses on the dairy sector. Another sector that could be investigated is the meat sector, given the substantial environmental impact and the fact that the type of product would allow, in terms of WTP, to choose larger price deviations among the options. Regarding the model adopted, as a mediator future research could analyze packaging arousal, perceived quality, and perceived trust. While, as a moderator, given the relevance of the price factor, it could be investigated whether a clearer label, combined with a given price strategy, could achieve more significant results in terms of purchase intention.

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Preliminary questionnaire

Introduction

Hi! As a Marketing student at Luiss, I am conducting research for my thesis on how food companies can communicate that their products meet specific sustainability criteria. Specifically, I will be analyzing the use of ecolabels in the dairy sector. The survey consists of a few questions and will only take a few minutes to complete. There are no correct or incorrect answers, and your responses will be kept completely anonymous. Thank you for participating as your contribution will greatly assist me in my research.

Block 1

How would your rate your interest in sustainability on a 1 to 5 scale?

Low ○ ○ ○ ○ ○ High

To what extent do you agree with the following statements?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am concerned about the environmental impact of the products that I buy	○	○	○	○	○
I am concerned about the social impact of the products that I buy (fair wages, adequate working conditions)	○	○	○	○	○
When I buy milk, I am concerned that the farms raise the animals by ensuring their welfare	○	○	○	○	○
Through my food choices, I want to strengthen the local food system helping the local economy growth	○	○	○	○	○

To what extent do you agree with the following statements?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I would like to find information on milk packaging about the environmental impact of the production process	O	O	O	O	O
I would like to find information on milk packaging about the social impact of the production process (fair wages, adequate working conditions)	O	O	O	O	O
I would like to find information on milk packaging about the measures taken by the farm to ensure animal welfare standards are being met	O	O	O	O	O
I would like to find information on milk packaging about how the company supports local economy	O	O	O	O	O

Environmental labels

You will now see some of the most commonly used eco-labels on milk packaging. For each one, you will be asked if you have ever seen it before, if you know its meaning or not, and if you have ever purchased a product with that eco-label.

FSC
www.fsc.org
MIX
From responsible sources
FSC® C000000

- O I remember having seen it
- O I know its meaning
- O I bought a product with this eco-label
- O I don't know it

○ I remember having seen it

○ I know its meaning

○ I bought a product with this eco-label

○ I don't know it

○ I remember having seen it

○ I know its meaning

○ I bought a product with this eco-label

○ I don't know it

- ○ I remember having seen it
- ○ I know its meaning
- ○ I bought a product with this eco-label
- ○ I don't know it

- ○ I remember having seen it
- ○ I know its meaning
- ○ I bought a product with this eco-label
- ○ I don't know it

- ○ I remember having seen it
- ○ I know its meaning
- ○ I bought a product with this eco-label
- ○ I don't know it

Social sustainability block

Now you will be asked to look at a label and answer some questions

I prodotti Coop sono realizzati senza discriminazioni né sfruttamento del lavoro

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The claim reflects the social commitment of the company	O	O	O	O	O
The claim is credible	O	O	O	O	O
I would buy a product with this claim	O	O	O	O	O

I prodotti Coop sono realizzati senza discriminazioni né sfruttamento del lavoro

ETHICALLY CORRECT CERTIFIED COMPANY SA 8000

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The claim reflects the social commitment of the company	O	O	O	O	O
The claim is credible	O	O	O	O	O
I would buy a product with this claim	O	O	O	O	O

Demographic_Block

The study is almost over, now you will be asked to answer few final questions about yourself.

What is your age?

What is your gender?

- ○ Female
- ○ Male
- ○ Prefer not to say

What is your degree of education?

- ○ Primary school
- ○ Middle school
- ○ Secondary school
- ○ Bachelor's degree
- ○ Master's degree
- ○ Phd./equivalents

Powered by Qualtrics

APPENDIX A.2

Descriptive Statistics

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	59	70,2	70,2	70,2
	Male	25	29,8	29,8	100,0
	Total	84	100,0	100,0	

What is your gender?

☐ Female
☐ Male
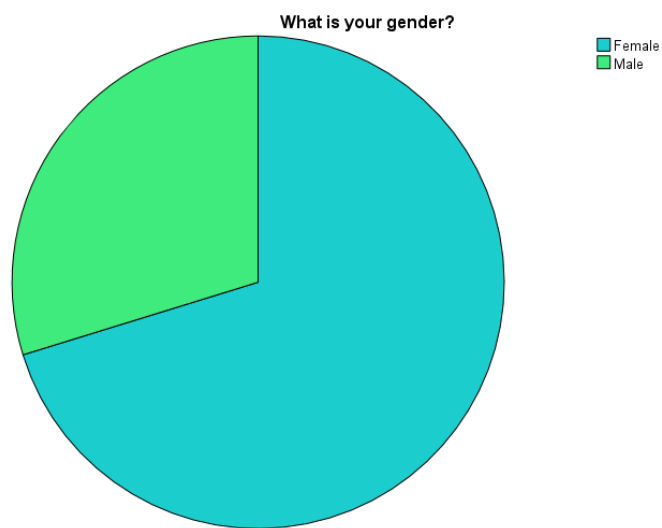
Statistics

What is your age?

N	Valid	82
	Missing	2
Mean		39,32
Median		34,00
Mode		23
Std. Deviation		16,798
Variance		282,170
Range		49
Minimum		21
Maximum		70

What is your age?

What is your age?
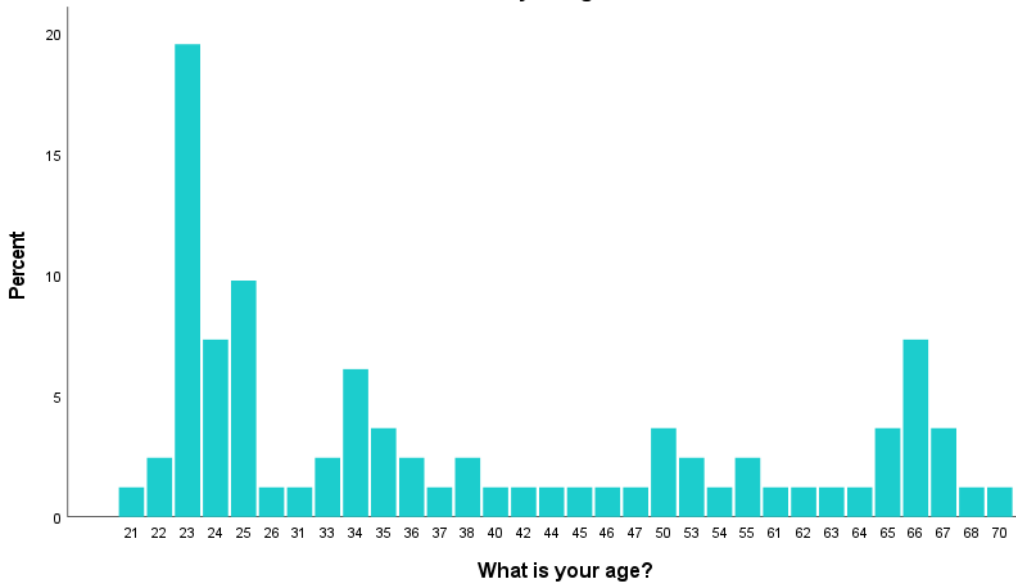
FSC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I remember having seen it	31	36,9	36,9	36,9
	I know its meaning	10	11,9	11,9	48,8
	I bought a product with this eco-label	17	20,2	20,2	69,0
	I don't know it	26	31,0	31,0	100,0
	Total	84	100,0	100,0	

FSC

FSC
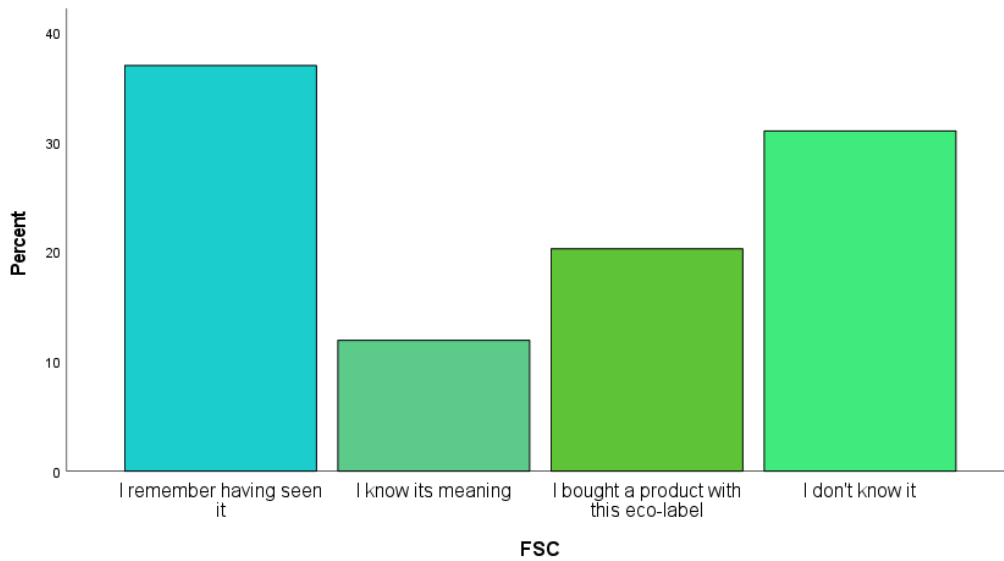
CARBON_TRUST

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I remember having seen it	17	20,2	20,2	20,2
	I know its meaning	9	10,7	10,7	31,0
	I bought a product with this eco-label	2	2,4	2,4	33,3
	I don't know it	56	66,7	66,7	100,0
	Total	84	100,0	100,0	
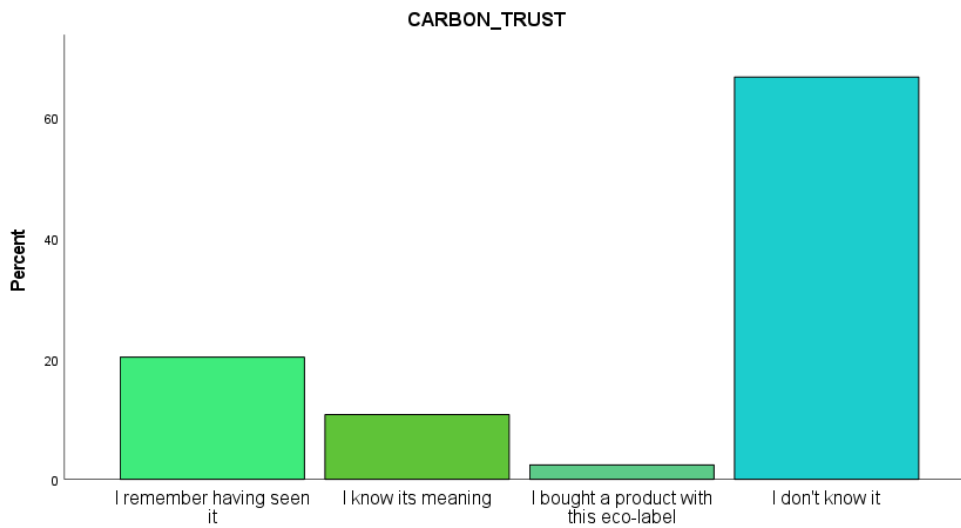
CARBON_TRUST

CARBON_NEUTRAL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I remember having seen it	9	10,7	10,7	10,7
	I know its meaning	11	13,1	13,1	23,8
	I bought a product with this eco-label	2	2,4	2,4	26,2
	I don't know it	62	73,8	73,8	100,0
	Total	84	100,0	100,0	

CARBON_NEUTRAL

90
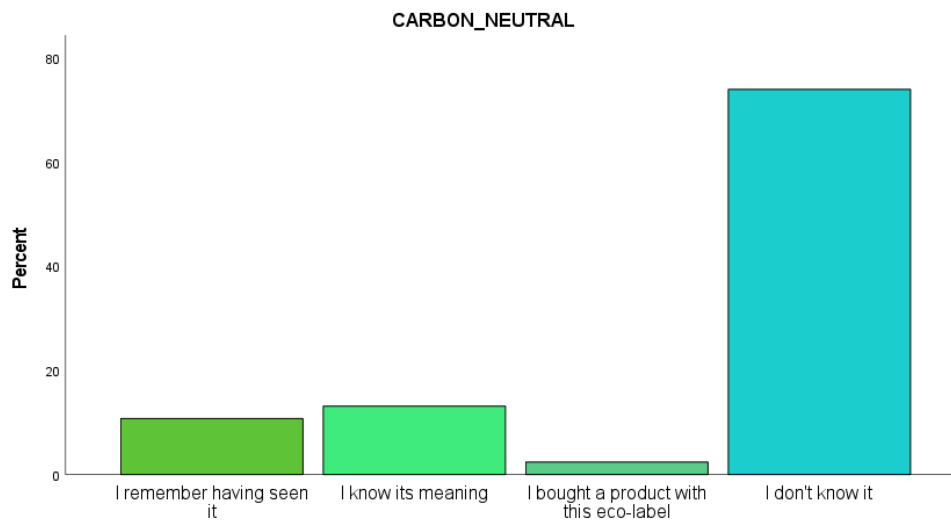
EU_ORGANIC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I remember having seen it	31	36,9	36,9	36,9
	I know its meaning	10	11,9	11,9	48,8
	I bought a product with this eco-label	24	28,6	28,6	77,4
	I don't know it	19	22,6	22,6	100,0
	Total	84	100,0	100,0	
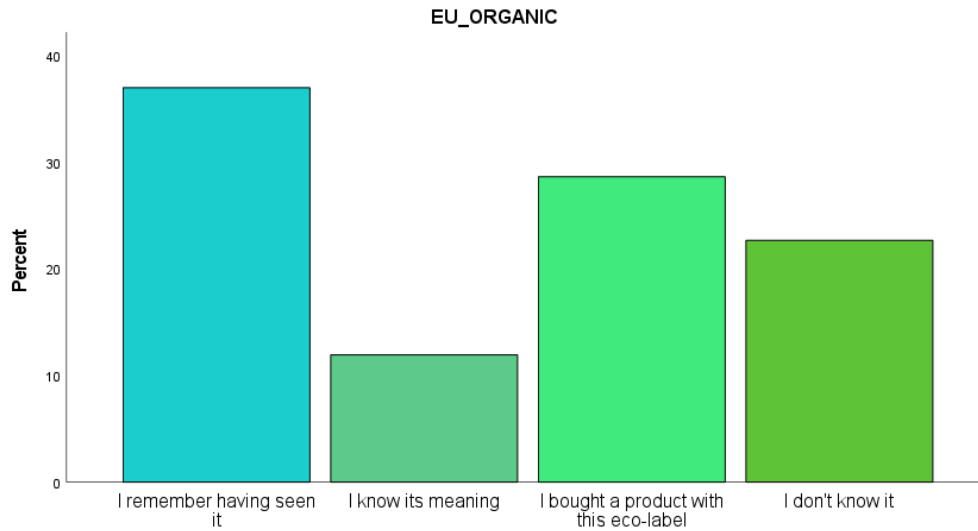
EU_ORGANIC

ALLEVAMENTI_DEL_BENESSERE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I remember having seen it	17	20,2	20,2	20,2
	I know its meaning	12	14,3	14,3	34,5
	I bought a product with this eco-label	4	4,8	4,8	39,3
	I don't know it	51	60,7	60,7	100,0
	Total	84	100,0	100,0	

ALLEVAMENTI_DEL_BENESSERE

91
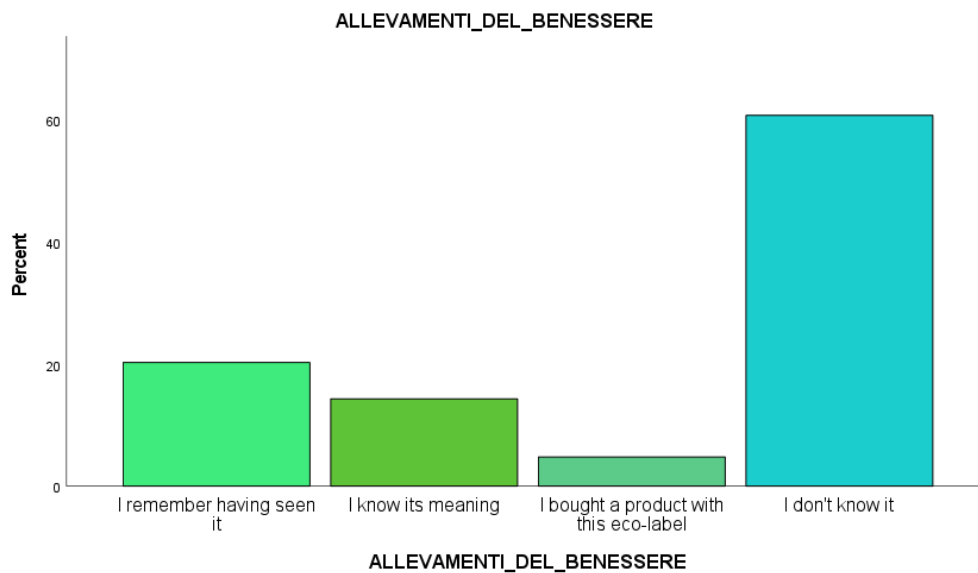
CSQA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I remember having seen it	8	9,5	9,5	9,5
	I know its meaning	13	15,5	15,5	25,0
	I bought a product with this eco-label	8	9,5	9,5	34,5
	I don't know it	55	65,5	65,5	100,0
	Total	84	100,0	100,0	

CSQA
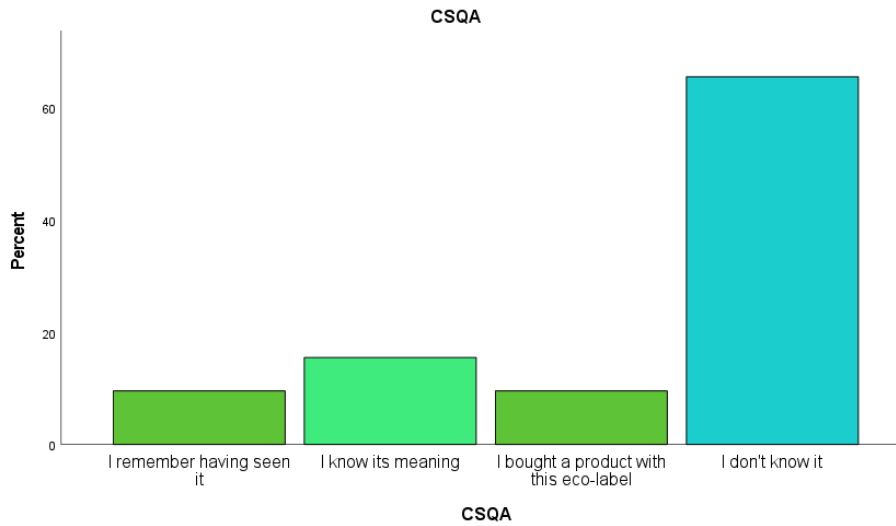
APPENDIX A.3

Paired Samples t-Test

Condition 1: Generic Coop Claim

Condition 2: Generic Coop Claim plus SA8000 Certification

Variable manipulated: I would buy a product with this claim.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CLAIM_COOP3	3,82	84	,946	,103
	CLAIM_COOP3_CERT	4,05	84	,917	,100

Paired Samples Test

		Paired Differences								Significance	
					95% Confidence Interval of the Difference						
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df		One-Sided p	Two-Sided p
Pair 1	CLAIM_COOP3 - CLAIM_COOP3_CERT	-,226	,896	,098	-,421	-,032	-2,313	83		,012	,023

APPENDIX B.1

Pre-test questionnaire

Introduction

Hi! As a Marketing student at Luiss, I am conducting research for my thesis on how food companies can communicate that their products meet specific **sustainability criteria**. Specifically, I will be analyzing the use of **ecolabels** in the dairy sector. The survey consists of a few questions and will only take **3 minutes** to complete. There are no correct or incorrect answers, your responses will be kept completely **anonymous, your name and the single answers will not be shared with anyone**. **Thank you** for participating as your contribution will greatly assist me in my research.

Instructions

Now you will be shown an image. You are kindly asked to look at it carefully. You will then be asked some questions concerning this image.

Combination of eco-labels

The following image shows a **combination of ecolabels** on a **milk package** conveying information on **different sustainability dimensions**.

Meta-label

The following image shows a new idea for a **meta label** on a **milk package** conveying information on **different sustainability dimensions**.

Clarity of meaning

Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The label is difficult to understand	O	O	O	O	O	O	O
The label is complicated	O	O	O	O	O	O	O
The label is unclear	O	O	O	O	O	O	O

Demographic block

The study is **almost over**, now you will be asked to answer a few final questions about **yourself**

What is your age?

[   ]

What is your gender?

○ Male
○ Female
○ Non-binary / third gender
○ Prefer not to say

APPENDIX B.2

Descriptive Statistics

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	22	35,5	35,5	35,5
	Female	40	64,5	64,5	100,0
	Total	62	100,0	100,0	

What is your gender?

Male
Female
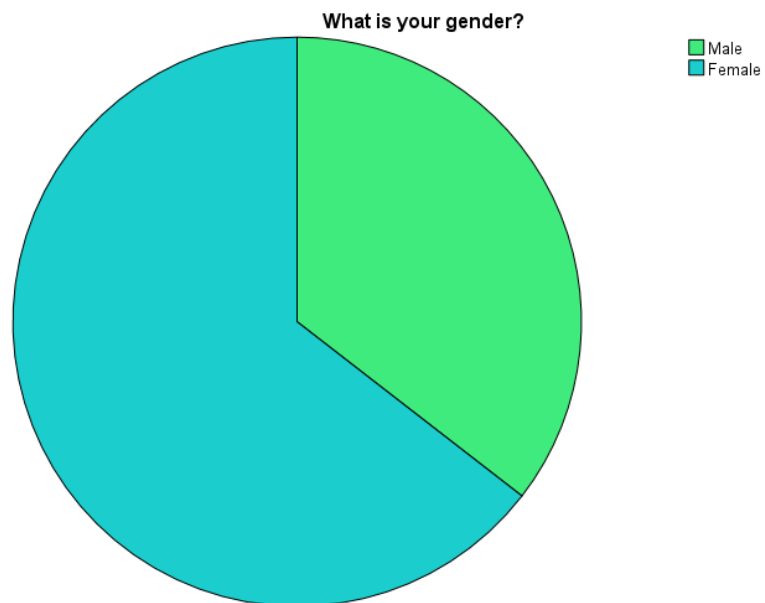
Statistics

What is your age?

N	Valid	62
	Missing	0
Mean		42,5161
Median		39,0000
Mode		24,00
Std. Deviation		16,54476
Variance		273,729
Range		51,00
Minimum		22,00
Maximum		73,00

What is your age?
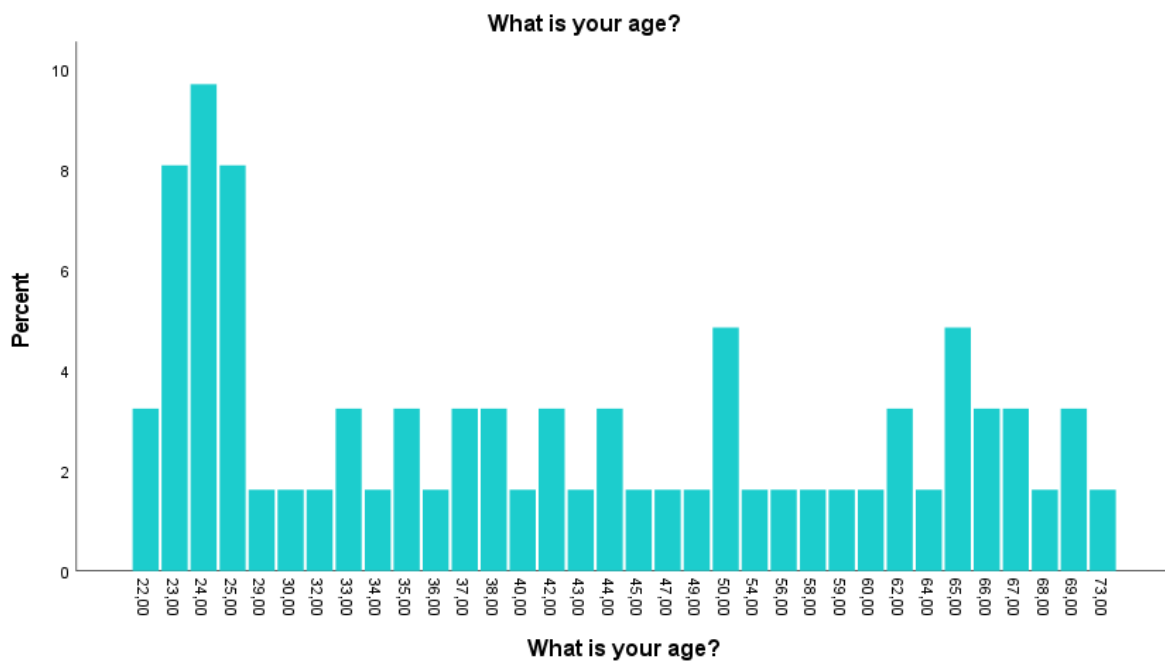
APPENDIX B.3

Factor Analysis

Variable considered: Label comprehension

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,835	94,506	94,506	2,835	94,506	94,506
2	,095	3,151	97,656			
3	,070	2,344	100,000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is difficult to understand	1,000	,941
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is complicated	1,000	,953
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is unclear	1,000	,941

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is difficult to understand	,970
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is complicated	,976
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is unclear	,970

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,782
Bartlett's Test of Sphericity	Approx. Chi-Square	234,994
	df	3
	Sig.	<,001

APPENDIX B.4

Reliability Analysis

Variable considered: Label comprehension

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,971	,971	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is difficult to understand	7,47	19,433	,932	,871	,960
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is complicated	7,39	19,126	,946	,895	,950
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen - The label is unclear	7,44	19,135	,933	,872	,960

APPENDIX B.5

Independent Sample T-Test

Independent variable: Ecological label format

Condition coded as 0: Combination of eco-labels

Condition coded as 1: Meta-label

Variable Manipulated : Label Comprehension (in reverse: how difficult to understand the label is)

Group Statistics

	IV	N	Mean	Std. Deviation	Std. Error Mean
Label comprehension	Meta-label (1)	33	2,1616	1,25864	,21910
	Combination of eco-labels (0)	29	5,4828	1,55988	,28966

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
Label Comprehension	Equal variances assumed	1,170	,284	-9,272	60	<,001	<,001	-3,32114	,35819	-4,03763	-2,60465
	Equal variances not assumed			-9,144	53,797	<,001	<,001	-3,32114	,36319	-4,04936	-2,59292

APPENDIX C.1

Main Test questionnaire

Introduction

Hi! As a Marketing student at Luiss, I am conducting research for my thesis on how food companies can communicate that their products meet specific **sustainability criteria**. Specifically, I will be analyzing the use of **ecolabels** in the dairy sector. The survey consists of a few questions and will only take **6 minutes** to complete. There are no correct or incorrect answers, your responses will be kept completely **anonymous, your name and the single answers will not be shared with anyone**. **Thank you** for participating as your contribution will greatly assist me in my research.

Instructions

Now you will be shown an image. You are kindly asked to look at it carefully. You will then be asked some questions concerning this image.

Combination of eco-labels

The following image shows a **combination of ecolabels** on a **milk package. The combination** conveys information on **different sustainability dimensions**.

Meta-label

The following image shows a new idea for a **meta label** on a **milk package** conveying information on **different sustainability dimensions**.

DV 1_WTB

Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The likelihood of purchasing this product is very high	O	O	O	O	O	O	O
The probability that I would consider buying this product is very high	O	O	O	O	O	O	O
My willingness to buy the product is very high	O	O	O	O	O	O	O

DV2_WTP

Please indicate the price you would be willing to pay for the product depicted in the picture you have just seen, from 1,20 euro to 2,10 euros.

	1,20 €	1,35 €	1,50 €	1,65 €	1,80 €	1,95 €	2,10 €
Preferred milk price	O	O	O	O	O	O	O

Mediator_Visual Processing Fluency

Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen.

	1	2	3	4	5	6	7	
Not at all attractive	O	O	O	O	O	O	O	Very attractive
Not at all eye-catching	O	O	O	O	O	O	O	Very eye-catching
Difficult to elaborate	O	O	O	O	O	O	O	Easy to elaborate

Control_Sustainable Purchases

Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I like to purchase sustainable products	O	O	O	O	O	O	O
I consider purchasing sustainable products as they do not harm the environment	O	O	O	O	O	O	O
I consider purchasing sustainable products as they are produced humanly for both animals and workers	O	O	O	O	O	O	O
I consider switching to other brands from my current favorite brand for sustainability reasons	O	O	O	O	O	O	O

Demographic block

The study is **almost over**, now you will be asked to answer a few final questions about **yourself.**

Please indicate your food preferences.

- O Vegan
- O Vegetarian
- O Lactose intolerant
- O None of the above

What is your **age**?

```
[                                                                    ]
```

What is your **gender**?

○ Male
○ Female
○ Non-binary / third gender
○ Prefer not to say

What is your **education level**?

○ Less than high school
○ High school graduate
○ Some college
○ 3 year degree
○ 5 year degree
○ Professional degree
○ Doctorate/Equivalent

What is your **yearly income**?

○ Less than €10,000
○ €10,000 - €19,999
○ €20,000 - €29,999
○ €30,000 - €39,999
○ €40,000 - €49,999
○ €50,000 - €59,999
○ €60,000 - €69,999
○ €70,000 - €79,999
○ €80,000 - €89,999
○ €90,000 - €99,999
○ €100,000 - €149,999
○ More than €150,000

APPENDIX C.2

Descriptive Statistics

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	100	39,1	39,1	39,1
	Female	152	59,4	59,4	98,5
	Prefer not to say	4	1,5	1,5	100,0
	Total	256	100,0	100,0	

Gender

- Male
- Female
- Prefer not to say
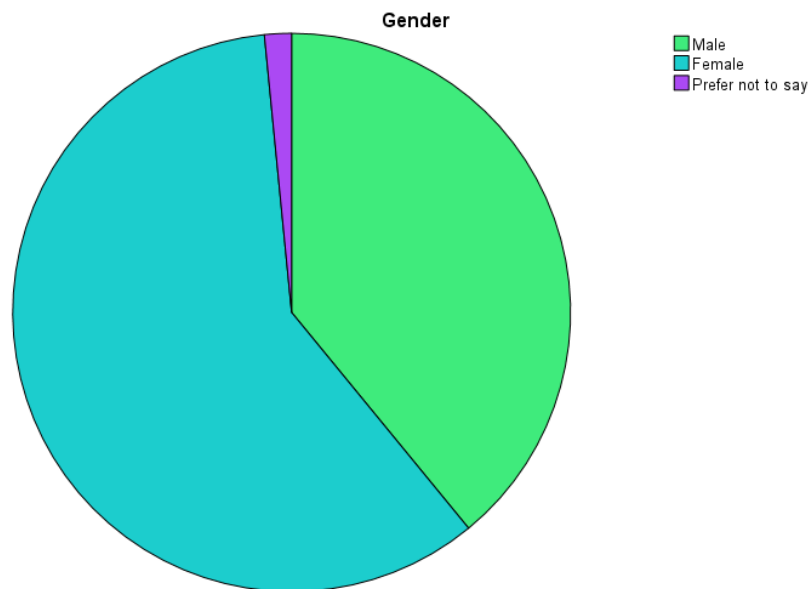
Statistics

What is your age?

N	Valid	256
	Missing	0
Mean		45,6211
Median		48,0000
Mode		24,00
Std. Deviation		16,94238
Variance		287,044
Range		58,00
Minimum		18,00
Maximum		76,00

What is your age?
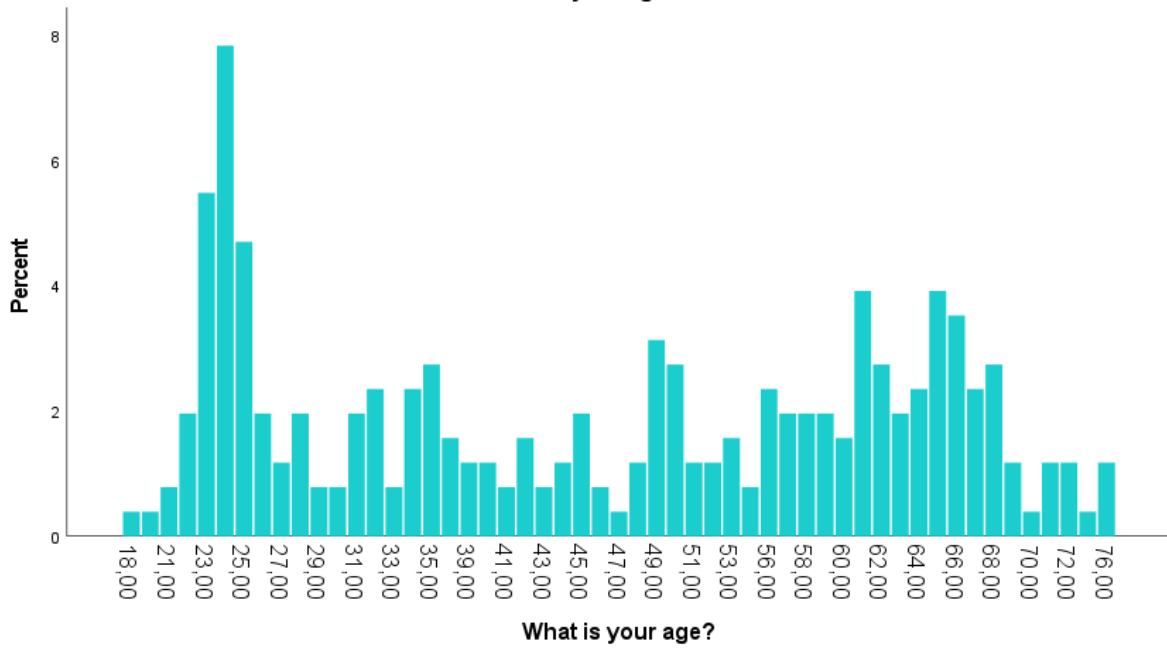
What is your education level?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than high school	4	1,6	1,6	1,6
	High school graduate	38	14,8	14,8	16,4
	Some college	26	10,2	10,2	26,6
	3 year degree	41	16,0	16,0	42,6
	5 year degree	128	50,0	50,0	92,6
	Professional degree	11	4,3	4,3	96,9
	Doctorate/Equivalent	8	3,1	3,1	100,0
	Total	256	100,0	100,0	

Education
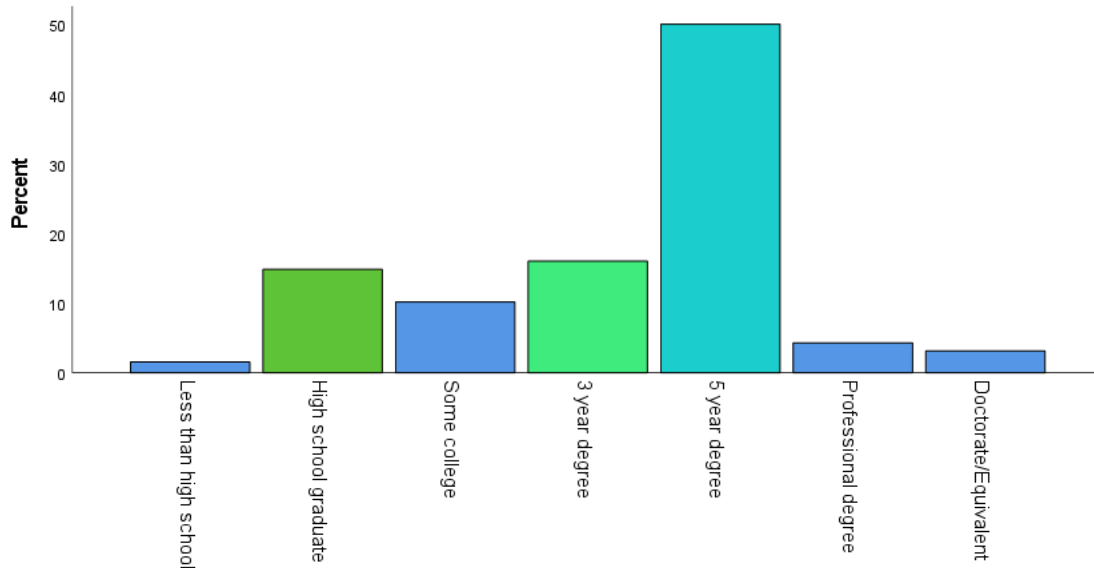
What is your yearly income?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valido	Less than €10,000	54	21,1	21,1	21,1
	€10,000 - €19,999	37	14,5	14,5	35,5
	€20,000 - €29,999	65	25,4	25,4	60,9
	€30,000 - €39,999	34	13,3	13,3	74,2
	€40,000 - €49,999	20	7,8	7,8	82,0
	€50,000 - €59,999	17	6,6	6,6	88,7
	€60,000 - €69,999	8	3,1	3,1	91,8
	€70,000 - €79,999	3	1,2	1,2	93,0
	€80,000 - €89,999	7	2,7	2,7	95,7
	€90,000 - €99,999	5	2,0	2,0	97,7
	€100,000 - €149,999	5	2,0	2,0	99,6
	More than €150,000	1	,4	,4	100,0
	Total	256	100,0	100,0	

Yearly Income
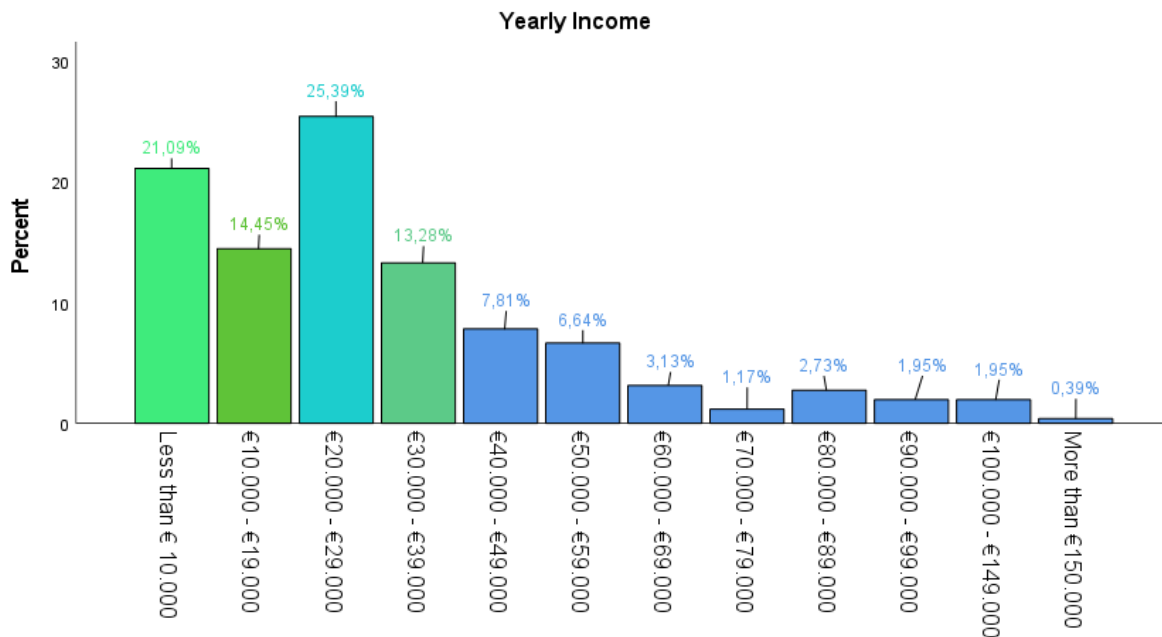
Please indicate your food preferences.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Vegetarian	12	4,7	4,7	4,7
	Lactose intolerant	44	17,2	17,2	21,9
	None of the above	200	78,1	78,1	100,0
	Total	256	100,0	100,0	

Please indicate your food preferences.
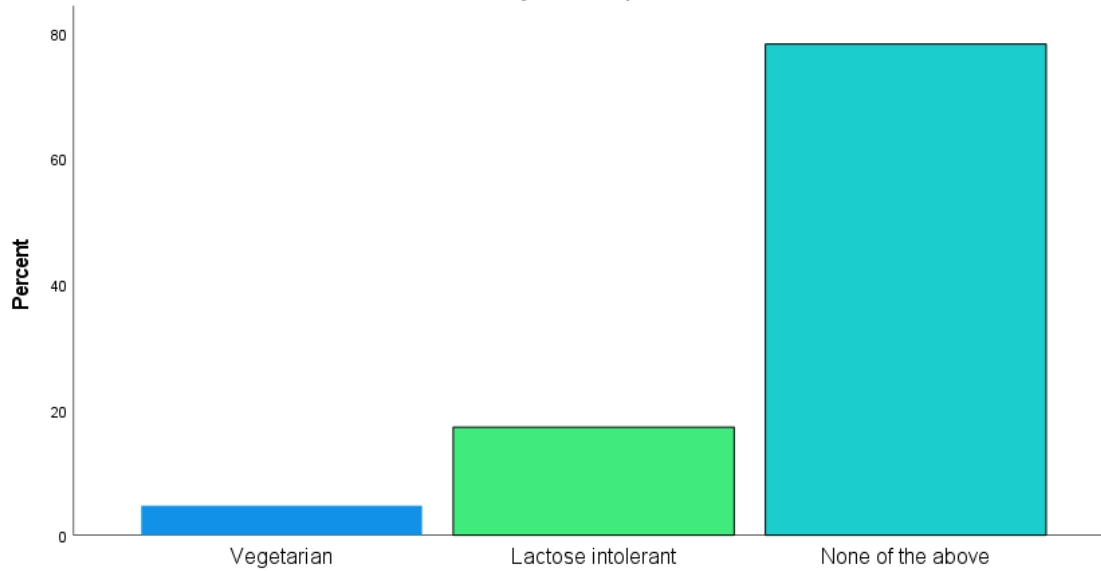
Factor Analysis

Mediator: Visual Processing Fluency

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,625	87,496	87,496	2,625	87,496	87,496
2	,235	7,847	95,343			
3	,140	4,657	100,000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Not at all attractive:Very attractive	1,000	,877
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Not at all eye-catching: Very eye-catching	1,000	,904
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Difficult to elaborate:Easy to elaborate	1,000	,844

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Not at all attractive:Very attractive	,937
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Not at all eye-catching: Very eye-catching	,951
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Difficult to elaborate:Easy to elaborate	,919

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,752
Bartlett's Test of Sphericity	Approx. Chi-Square	620,140
	df	3
	Sig.	<,001

APPENDIX C.4

Reliability Analysis

Mediator: Visual Processing Fluency

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,928	,928	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Not at all attractive:Very attractive	8,98	13,733	,854	,749	,894
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Not at all eye-catching: Very eye-catching	9,03	14,117	,884	,786	,871
Please indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - Difficult to elaborate:Easy to elaborate	8,93	13,877	,821	,679	,921

APPENDIX C.5

Factor Analysis

First Dependent Variable: Willingness To Buy

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,799	93,314	93,314	2,799	93,314	93,314
2	,122	4,079	97,394			
3	,078	2,606	100,000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - The likelihood of purchasing this product is very high	1,000	,919
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - The probability that I would consider buying this product is very high	1,000	,945
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - My willingness to buy the product is very high	1,000	,936

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - The likelihood of purchasing this product is very high	,958
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - The probability that I would consider buying this product is very high	,972
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - My willingness to buy the product is very high	,968

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,776
Bartlett's Test of Sphericity	Approx. Chi-Square	916,432
	df	3
	Sig.	<,001

110

APPENDIX C.6

Reliability Analysis

First Dependent Variable: Willingness To Buy

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,964	,964	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - The likelihood of purchasing this product is very high	9,22	14,234	,907	,824	,959
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - The probability that I would consider buying this product is very high	9,20	13,742	,936	,878	,938
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - My willingness to buy the product is very high	9,20	13,739	,927	,865	,945

Factor Analysis

Control: Sustainable Purchases

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,168	79,203	79,203	3,168	79,203	79,203
2	,393	9,824	89,027			
3	,269	6,718	95,745			
4	,170	4,255	100,000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I like to purchase sustainable products	1,000	,819
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider purchasing sustainable products as they do not harm the environment	1,000	,865
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider purchasing sustainable products as they are produced humanly for both animals and workers	1,000	,784
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider switching to other brands from my current favorite brand for sustainability reasons	1,000	,700

Extraction Method: Principal Component Analysis.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,839
Bartlett's Test of Sphericity	Approx. Chi-Square	724,575
	df	6
	Sig.	<,001

Component Matrix[a]

	Component 1
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I like to purchase sustainable products	,905
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider purchasing sustainable products as they do not harm the environment	,930
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider purchasing sustainable products as they are produced humanly for both animals and workers	,886
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider switching to other brands from my current favorite brand for sustainability reasons	,837

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

APPENDIX C.8

Reliability Analysis

Control: Sustainable Purchases

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,910	,912	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I like to purchase sustainable products	16,61	11,673	,821	,693	,875
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider purchasing sustainable products as they do not harm the environment	16,46	12,108	,863	,761	,862
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider purchasing sustainable products as they are produced humanly for both animals and workers	16,51	12,392	,789	,656	,886
Please, indicate on a scale of 1 (completely disagree) to 7 (completely agree) to what extent you agree or disagree with the following statements concerning the picture you have just seen. - I consider switching to other brands from my current favorite brand for sustainability reasons	16,93	12,160	,723	,527	,911

APPENDIX C.9

Descriptive Statistics

Second Dependent Variable: Willingness To Pay

Dataset : Entire (both respondents who saw the combination of

eco-labels and the meta-label)

Please indicate the price you would be willing to pay for the product depicted in the picture you have just seen, from 1,20 euro to 2,10 euros. - Preferred milk price

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,20 €	53	20,7	20,7	20,7
	1,35 €	43	16,8	16,8	37,5
	1,50 €	32	12,5	12,5	50,0
	1,65 €	28	10,9	10,9	60,9
	1,80 €	50	19,5	19,5	80,5
	1,95 €	33	12,9	12,9	93,4
	2,10 €	17	6,6	6,6	100,0
	Total	256	100,0	100,0	

Please indicate the price you would be willing to pay for the product depicted in the picture you have just seen, from 1,20 euro to 2,10 euros. - Preferred milk price
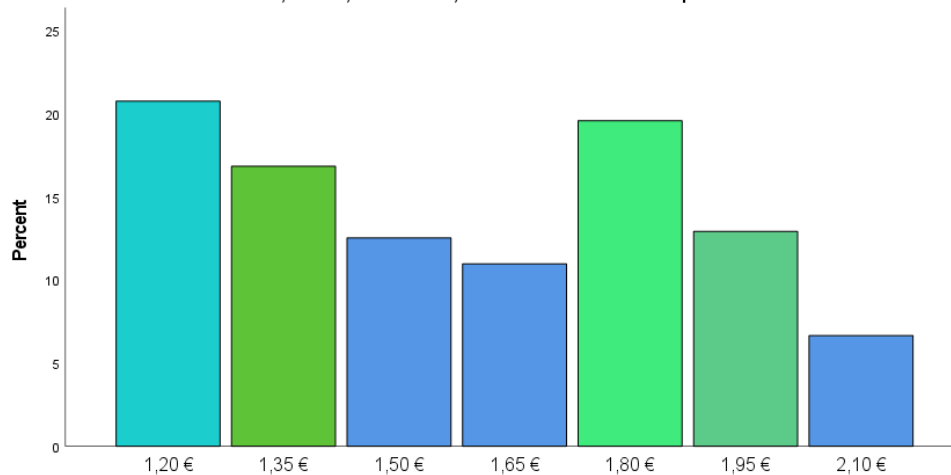
Descriptive Statistics

Second Dependent Variable: Willingness To Pay

Dataset : Only respondents who saw the combination of

eco-labels

Please indicate the price you would be willing to pay for the product depicted in the picture you have just seen, from 1,20 euro to 2,10 euros. - Preferred milk price

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,20 €	39	30,5	30,5	30,5
	1,35 €	32	25,0	25,0	55,5
	1,50 €	19	14,8	14,8	70,3
	1,65 €	13	10,2	10,2	80,5
	1,80 €	16	12,5	12,5	93,0
	1,95 €	6	4,7	4,7	97,7
	2,10 €	3	2,3	2,3	100,0
	Total	128	100,0	100,0	

Preferred milk price for people who saw the combination of ecolabels

Statistics

N	Valid	128
	Missing	0
Median		2,73
Mode		1

Mode = 1= 1,20 €

Median = 2,73 = 1,50 €

Descriptive Statistics

Second Dependent Variable: Willingness To Pay

Dataset : Only respondents who saw the meta-label

Please indicate the price you would be willing to pay for the product depicted in the picture you have just seen, from 1,20 euro to 2,10 euros. - Preferred milk price

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,20 €	14	10,9	10,9	10,9
	1,35 €	11	8,6	8,6	19,5
	1,50 €	13	10,2	10,2	29,7
	1,65 €	15	11,7	11,7	41,4
	1,80 €	34	26,6	26,6	68,0
	1,95 €	27	21,1	21,1	89,1
	2,10 €	14	10,9	10,9	100,0
	Total	128	100,0	100,0	

Preferred milk price for people who saw the meta-label
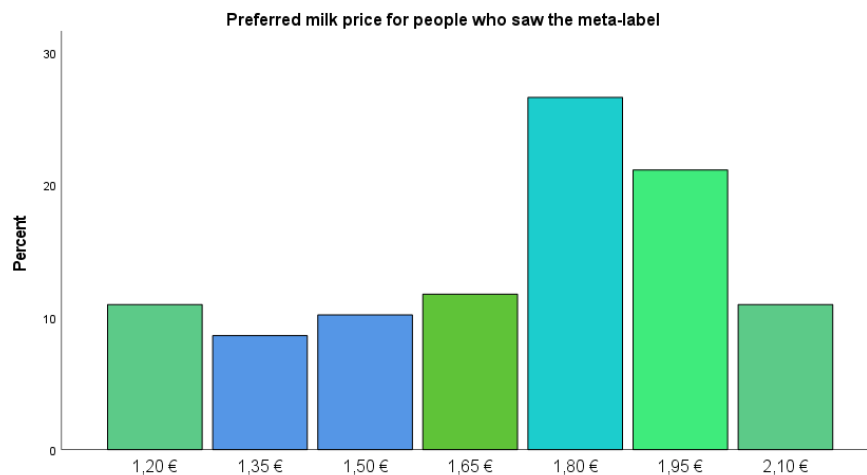
Statistics

N	Valid	128
	Missing	0
Median		4,41
Mode		5

Mode = 5 = 1,80 €

Median = 4,41 = 1,65-1,80 €

APPENDIX C.12

One-way Anova

First Dependent Variable: Willingness To Buy

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Combination of ecolabels (0)	128	3,60156	1,79825	,15894	3,2870	3,9161	1,00	7,00
Meta-label (1)	128	5,6042	1,26584	,11189	5,3828	5,8256	1,00	7,00
Total	256	4,6029	1,84799	,11550	4,3754	4,8303	1,00	7,00

Anova

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	256,667	1	256,667	106,147	<,001
Within Groups	614,180	254	2,418		
Total	870,847	255			

APPENDIX C.13

One-way Anova

Second Dependent Variable: Willingness To Pay

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Combination of ecolabels (0)	128	2,73	1,678	,148	2,43	3,02	1	7
Meta-label (1)	128	4,41	1,838	,162	4,09	4,74	1	7
Total	256	3,57	1,949	,122	3,33	3,81	1	7

DV2=WTP

Anova

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	182,250	1	182,250	58,859	<,001
Within Groups	786,484	254	3,096		
Total	968,734	255			

APPENDIX C.14

PROCESS MACRO MEDIATION

First Dependent Variable: Willingness To Buy

```
**************************************************************************
Model : 4
    Y : DV1
    X : IV
    M : MED


Covariates:
 SUSTAINA


Sample
Size: 256


**************************************************************************
OUTCOME VARIABLE:
 MED


Model Summary
          R        R-sq        MSE          F         df1         df2           p
      ,5890       ,3469      2,2090     67,1996      2,0000     253,0000        ,0000


Model
            coeff         se           t           p        LLCI        ULCI
constant    1,5043       ,4613      3,2606       ,0013       ,5957      2,4128
IV          1,7976       ,1903      9,4440       ,0000      1,4228      2,1725
SUSTAINA     ,3764       ,0835      4,5068       ,0000       ,2119       ,5409
**************************************************************************
OUTCOME VARIABLE:
 DV1


Model Summary
          R        R-sq        MSE          F         df1         df2           p
      ,8248       ,6802      1,1051     178,6797      3,0000     252,0000        ,0000


Model
            coeff         se           t           p        LLCI        ULCI
constant    -,2981       ,3331       -,8949      ,3717      -,9541       ,3579
IV           ,5521       ,1566      3,5261       ,0005       ,2437       ,8605
MED          ,6550       ,0445     14,7300       ,0000       ,5674       ,7426
SUSTAINA     ,3038       ,0614      4,9485       ,0000       ,1829       ,4248


************************* TOTAL EFFECT MODEL *****************************
OUTCOME VARIABLE:
 DV1


Model Summary
          R        R-sq        MSE          F         df1         df2           p
      ,6363       ,4049      2,0484     86,0647      2,0000     253,0000        ,0000


Model
            coeff         se           t           p        LLCI        ULCI
constant     ,6872       ,4443      1,5469       ,1231      -,1877      1,5621
IV          1,7296       ,1833      9,4357       ,0000      1,3686      2,0905
SUSTAINA     ,5504       ,0804      6,8432       ,0000       ,3920       ,7088
```

```
*************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***************

Total effect of X on Y
     Effect        se         t         p       LLCI      ULCI
     1,7296      ,1833    9,4357     ,0000    1,3686    2,0905

Direct effect of X on Y
     Effect        se         t         p       LLCI      ULCI
      ,5521      ,1566    3,5261     ,0005     ,2437     ,8605

Indirect effect(s) of X on Y:
        Effect    BootSE   BootLLCI   BootULCI
MED     1,1775     ,1834      ,8346     1,5523

********************** ANALYSIS NOTES AND ERRORS **********************

Level of confidence for all confidence intervals in output:
   95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
   5000

NOTE: Variables names longer than eight characters can produce incorrect output.
      Shorter variable names are recommended.

------ END MATRIX -----
```

APPENDIX C.15

PROCESS MACRO MEDIATION

Second Dependent Variable: Willingness To Pay

```
*********************************************************************************
Model : 4
    Y : DV2_1
    X : IV
    M : MED

Covariates:
 SUSTAINA

Sample
Size: 256

*********************************************************************************
OUTCOME VARIABLE:
 MED

Model Summary
          R       R-sq       MSE          F       df1        df2          p
      ,5890      ,3469    2,2090    67,1996    2,0000   253,0000      ,0000

Model
            coeff        se         t         p       LLCI      ULCI
constant   1,5043     ,4613    3,2606     ,0013     ,5957    2,4128
IV         1,7976     ,1903    9,4440     ,0000    1,4228    2,1725
SUSTAINA    ,3764     ,0835    4,5068     ,0000     ,2119     ,5409

*********************************************************************************
```

```
********************************************************************
OUTCOME VARIABLE:
 DV2_1

Model Summary
          R        R-sq        MSE          F        df1        df2          p
      ,6459       ,4172      2,2404    60,1320     3,0000   252,0000       ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    -,2718       ,4743     -,5731      ,5671    -1,2059      ,6622
IV           ,4966       ,2229     2,2274      ,0268      ,0575      ,9356
MED          ,5493       ,0633     8,6755      ,0000      ,4246      ,6740
SUSTAINA     ,2035       ,0874     2,3273      ,0207      ,0313      ,3756

*************************** TOTAL EFFECT MODEL ***************************
OUTCOME VARIABLE:
 DV2_1

Model Summary
          R        R-sq        MSE          F        df1        df2          p
      ,4931       ,2431      2,8980    40,6378     2,0000   253,0000       ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     ,5545       ,5284     1,0493      ,2951     -,4862     1,5951
IV          1,4840       ,2180     6,8066      ,0000     1,0546     1,9134
SUSTAINA     ,4102       ,0957     4,2881      ,0000      ,2218      ,5986

*************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***************
Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     1,4840       ,2180     6,8066      ,0000     1,0546     1,9134

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
      ,4966       ,2229     2,2274      ,0268      ,0575      ,9356

Indirect effect(s) of X on Y:
        Effect     BootSE    BootLLCI   BootULCI
MED      ,9874      ,1683       ,6843     1,3424

************************** ANALYSIS NOTES AND ERRORS **************************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: Variables names longer than eight characters can produce incorrect output.
      Shorter variable names are recommended.

------ END MATRIX -----
```

LUISS 🏛

Department of Business and Management

Chair of Consumer Behavior

Comparison of different eco-label formats in the dairy sector. Consumer perceptions and purchase intention for a new meta-sustainability label versus a combination of eco-labels.

Prof. Simona Romani

SUPERVISOR

Prof. Antonella Buonomo

CO-SUPERVISOR

Olga Di Vito - Matr. 745681

CANDIDATE

Academic Year 2022/2023

Summary thesis Master's Degree Olga Di Vito - 745681

Chapter 1

AREA OF INVESTIGATION AND RELATED PROBLEM

Cooperation among all parties, including firms and civil society, is essential for achieving the Sustainable Development Goals set by the 2030 Agenda in response to the growing environmental problems (Ferreira & Fernandes, 2022).

Indeed, on the demand side, consumers are adopting more sustainable purchasing behaviours and prefer companies that do likewise and transparently communicate their green efforts (Butler, 2018; Mastercard, 2021).

To this end, one possible communication tool that companies have been using for some years, especially in the food sector, are eco-labels: voluntary labels placed on product packaging to facilitate the identification of products that meet specific environmental performance criteria (European Commission, 2022; Taufique et al., 2014; US EPA, 2014).

To date, however, the effectiveness of these communication tools is limited, as is evident when comparing data on the growth of the global green market, which will more than double by 2026, with the relative market share of eco-labeled food products, currently between 1 and 5 percent (in Europe) (Precedence Research, 2022; Rex & Baumann, 2007; Sajid et al., 2022; Yokessa & Marette, 2019).

Reasons for the limited effectiveness of eco-labels include the lack of trust in companies and the fact that consumers, when purchasing, give more weight to other product attributes, such as price and durability (Deloitte, 2023).

All this results in a low percentage of consumers willing to read sustainable labels and buy related products, according to one study about 23,3 percent (Grymshi et al., 2022).

Although some studies show consumers' willingness to pay a premium for eco-labeled products, especially in the meat and dairy sectors, lots of this research has the limitation of having been conducted in hypothetical settings, with no real money transfer, while some research carried out in real settings (coffee shops, supermarkets) shows the ineffectiveness of eco-labels in guiding consumers' purchasing decisions (Bastounis et al., 2021; Elofsson et al., 2016; Pechey et al., 2022).

Therefore, the first step in increasing demand for green eco-labeled products is to thoroughly understand the key factors influencing their choice, which, according to some meta-analyses, can be divided into consumer-related factors and contextual factors, related to the product itself or the label (Monge et al., 2020; Flores & Jansson, 2022).

LITERATURE

CONSUMER RELATED FACTORS

The probability of buying eco-labelled green products could be increased if consumers developed an eco-friendly attitude, a positive attitude towards the company that implements sustainable practices and a trusting relationship towards the retailers and the certification bodies.

First and foremost, awareness of the impact that consumers' purchasing choices have on the environment, society and the economy contributes to the development of a positive attitude. Demographic factors such as gender and age also play a decisive role: women and younger generations, (e.g., Gen Z) tend to express greater eco-concern, while in terms of sales important is also the role played by older generations, thanks to their buying capacity (Monge et al., 2020; Flores & Jansson, 2022; Petro, 2020; Sun & Yoon, 2022).

In order to develop a positive attitude toward the eco-friendly company, it is important to communicate a brand image that reflects the sustainable commitment declared on eco-labels (Barbu et al., 2022; Guntzburger et al., 2021). At the social level also, others' purchasing decisions or knowing that they are being watched by others during their purchases can lead consumers to adopt more sustainable practices, while at the personal level, the extent to which consumers feel confident in their ability to identify and choose products with reduced environmental impact, distinguishing them from false claims, is also significant (Aprile & Punzo, 2022; Jansson et al., 2017; Zhang et al., 2021).

In this regard, it is crucial to point out that the number of misleading claims is steadily increasing, with a percentage of 53% reached within the last year that led the European Commission to propose a new directive in this regard on March 22, 2023 (Giacomo Talignani, 2023). Companies implementing sustainable choices therefore, to be credible, must simplify the process of selecting green products.

This can be achieved by using certifications and by providing more information about them. The two most used certifications at present are ISO, employed globally by more than 36,000 organizations in 171 countries, and certifying that products are safe, reliable and of good quality, (ISO, 2022, 2023) and EMAS, adopted by more than 4k organizations and almost 13k websites (European Commission, 2023b, 2023c).

PRODUCT RELATED FACTORS

The second group of factors that influence the selection and purchase of green products marked with eco-labels are contextual and pertain to the environment where the purchase takes place or the product itself. Indeed, previous studies have shown that strategically positioning products (e.g., healthy food in the fresh section) and promoting the trial of eco-labelled products (so that they become part of the habitual shopping) can increase sales. This finds justification in the fact that, as found in an eye tracking study, most consumers (54 percent) are habitual shoppers (Song et al., 2019).

Among the most crucial product-related factors are quality - considered the main factor affecting green product purchases by 76,2% of the respondents in a 2020 study conducted in Spain - and price. Previous studies highlighted how, in the presence of eco-labels, consumers are willing to pay a higher price for superior quality goods. One the other hand, some consumers tend to associate a more sustainable product with lower quality. To address this perception, one possible solution is for companies to adopt sustainable initiatives that consider the entire product life cycle (Acuti et al., 2022).

After quality, another very important attribute to consider is price: while the majority of customers, during the product selection, are driven by convenience and other attributes, rather than sustainability, some papers have also shown that people are willing to pay a premium for products that are in line with their values (Bastounis et al., 2021; Grymshi et al., 2022). Besides, when it comes to identifying the right pricing strategy, to overcome the bias of people associating low priced products with lower quality, but at the same time disliking higher priced options due to budget constraints, a possible option is to combine a higher price (for a superior quality good) with a discount (Feuß et al., 2022).

Another interesting product attribute, also related to quality, is origin: people are often under the only partially true impression that local food is healthier and less polluting, as food must travel less miles. There are other elements, besides transport, which are more polluting, like production methods and consumption choices (Aprile & Punzo, 2022; Morley, 2021).

Lastly, people often choose eco-labelled food products (especially organic) as they perceive them as healthier, meaning that they do not contain chemicals and antibiotics. On the other hand, some customers are under the misconception that sustainable food (e.g., unsold food sold by apps like Too Good To Go to reduce food waste) is riskier for health or less tasty (Flores & Jansson, 2022; Marzialetti, 2020; Song et al., 2019b).

LABEL RELATED FACTORS

Like the second, also the third group of factors influencing the purchase of eco-labelled green products are contextual.

More specifically, first, it is essential for the eco-label to capture the consumer's attention during purchase. Contributing to this is, inter alia, the level of involvement with the product, determined, for example, by the product's price and frequency of purchase.

Indeed, some studies state that for high involvement products, consumers tend to pay more attention, which leads to a greater understanding of the label (Riskos et al., 2021). While other research claims that especially for low involvement products consumers have more trust toward the label and a positive attitude, especially when the label design is simple and intuitive, and the product is food and therefore, although not particularly expensive, affects the buyer's health (Cason & Gangadharan, 2002; Neumayr & Moosauer, 2021).

Also, the likelihood of noticing the label will be greater in the case of higher visibility. This can be compromised by having an excessive number of eco-labels or too much information, while it can be improved by understanding the right placement for the eco-label on the product packaging. Previous studies highlighted the importance of improving carbon and organic label visibility. In particular, a 2018 eye tracking study suggested to place eco-labels near the factors that are analysed for the longest time, like the list of ingredients or the brand name (Beattie & Sale, 2009; C. Liu et al., 2022; Song et al., 2019; Taufique et al., 2014).

Eco-label visibility can also be enhanced by paying greater attention to multiple aspects related to label design, e.g., the size of the label, the visual saliency (how much the label stands out), the colour, the logo shape, the typeface, or its format. More in detail, the colour green, when combined with an eco-label, is linked to sustainability, and has a positive effect on product selection (Creusen & Schoormans, 2005; Pancer et al., 2017). Also, in terms of format, for less familiar labels, the combination of text an image/icon (compared to images or icons alone) has more positive effects on product choice (Atkinson & Rosenthal, 2014; Rihn et al., 2019; Tang et al., 2004). As for the shape, previous studies found that rounded logos (on eco-labelled green products) are preferred to angular logos, as they are considered more sensitive towards the customer's demand (Meiting & Hua, 2021).

Once customers have noticed the label, it is also important that they are able to correctly identify it: a previous 2022 study highlighted that lack of information and eco-label recognition were the main factors preventing customers interested in sustainability issues from buying more eco-labelled food products (Grymshi et al., 2022). Indeed, the excessive number of eco-labels in circulation, currently 457 in 199 countries, the different categories that exist and the lack of a

unique body of law regulating them make more challenging the task of correctly identify eco-labels (Monge et al., 2020; Marrucci et al., 2021).

Finally, after noticing and recognizing the eco-labels, the last factor influencing the intent to purchase the product is related to the appeal of its content. Indeed, eco-labels can pertain to a variety of attributes, linked to the three dimensions of sustainability: environmental, social, and economic (Purvis et al., 2019). Recent studies have shown that consumers consider more sustainable and are willing to pay a higher price for eco-labels related not only to the environmental dimension, but also to the social one (e.g., animal welfare, fair working conditions) (Lappeman et al., 2019; Tobi et al., 2019).

AIM OF THE RESEARCH

As previously specified, consumers are concerned about different dimensions of sustainability (environmental and social). There is therefore a need to communicate the different sustainable attributes through eco-labels that are comprehensive and clear and do not overload customers with information. One possible solution is the use of a unique label, called a Meta-label, that summarizes information related to a variety of sustainability attributes and multiple eco-labels (Torma & Thøgersen, 2021). As found by previous research, lots of consumers give the same importance to different sustainability pillars, justifying the introduction of a universal label (Janßen & Langen, 2017). So, it is worthwhile to compare consumer purchase intention for two different eco-labels formats: a combination of eco-labels, related to multiple sustainability attributes (environmental and social) vs a unique meta-label, related to the same attributes.

Chapter 2

LITERATURE ON META-LABELS, COMPARED TO COMBINATION OF ECO-LABELS (H1)

The combinations of eco-labels most studied in the previous literature include a mixture of nutritional, health, environmental and social attributes. In particular, in a study it was found that ecological and social attributes were preferred to nutritional ones (Eldesouky, Mesías, et al., 2020; Tobi et al., 2019).

Regarding environmental attributes, one possible classification is by life cycle stage (e.g., production or disposal) and by impact (e.g., carbon labels report the impact on the air through carbon emissions). The most used labels are those related to recycling of materials (e.g., FSC),

carbon emissions and use of pesticides (organic labels). About the social dimension, this pertains mainly to people (e.g., safety, no discriminations, fair working conditions) or animals (e.g., animal care on farm management) (Lamonaca et al., 2022; Shao et al., 2017).

As for the meta-label, it differs from the combination of eco-label in terms of format and is characterized by the presence of four elements, two obligatory (the reference to different dimensions of sustainability and more eco-labels), and two optional (ranking different certifications through a multilevel system and using a universal label for different product categories). Although the application of the meta-label is still limited, some governments (e.g., Germany), firms and NGOs (e.g., WWF) have already begun to develop ideas for a meta-label and several studies have enumerated its benefits (Dendler, 2014; Torma & Thøgersen, 2021b).

In particular, the meta-label makes it possible to address the problem for consumers of seeing far too many eco-labels on packaging, yet not enough information about them (Futtrup et al., 2021). Also, if used consistently, the meta-label would become more familiar and recognized more easily than combinations of eco-labels (Rossi & Rivetti, 2020). Also, in terms of visibility, the meta-label has a greater chance of capturing the consumer's attention due to a simpler and more intuitive design. Some meta-labels are easier to understand than others, for example the Traffic Light, the star rating system, the graded system, or horizontally formatted systems. In particular the Traffic Light was the most salient and best understood in many studies (Feucht & Zander, 2018; Talati et al., 2019).

From a content perspective, moreover, the meta-label offers a better understanding of the individual eco-labels it refers to and is more informative as it addresses more sustainability dimensions. Indeed, in Europe many composite labels have emerged in the food sector summarizing nutritional and environmental attributes and companies like Nestlé, Unilever and Coca Cola have launched their own Traffic Light (Clodoveo et al., 2021; Nikolaou & Kazantzidis, 2016; Nikolaou & Tsalis, 2018). Another advantage that more quantitative meta-labels, like the multilevel, offer is more easy comparability in terms of sustainability, with other products.

In terms of purchase intention for composite labels, so far there is limited research. Some studies reported a higher WTP for the multilevel label and the Traffic Light (Kocsis & Kuslits, 2019). Finally, a 2017 study conducted in the dairy sector in Germany found that, the majority of the respondents (85%) gave the same importance to different sustainability attributes, and were therefore satisfied with a unique meta-label, for which they were willing to pay a premium of 15% (Janßen & Langen, 2017).

Therefore, the following hypothesis is proposed:

H1: The use of a meta-label on product packages (vs. a combination of eco-labels) positively influences customers' purchase intention (WTP, WTB) for the product.

LITERATURE ON VISUAL PROCESSING FLUENCY (H2)

Visual processing fluency is a combination of perceptual fluency and conceptual fluency, where the former refers to the processing of visual features and the latter to the interpretation of their meaning (Gordon C. Bruner II, 2012).

Previous literature has shown that customers have higher purchase intention for market stimuli (logos, packaging, advertisements, environmental labels) that are more visually appealing and easier to process (Morgan et al., 2021).

For example, regarding packaging, studies have shown that simple design scores high on conceptual fluency (for low-fat products due to association with health), while symmetrical arrangement of information and the use of the color green make packaging more appealing, leading to greater perceptual fluency and purchase intention (Gagnan & Badie, 2018; Seo & Scammon, 2017; Xia et al., 2023).

Logo design has also been the focus of a consistent body of research. Specifically, in relation to format, it was noted that, although images are processed holistically and require less mental effort, the combination of text and images is preferred when customers are unfamiliar with a brand (Morgan et al., 2021). In addition, studies have shown that more elaborate logos (more elements, movement, use of three-dimensional logos) score high in terms of processing fluency and thus purchase propensity (Payne et al., 2013). Another often-discussed characteristic of logo design is visual complexity: while some studies argue that complex visual stimuli require more mental effort and thus generate negative emotions, other studies claim that more complex logos are considered more attractive and thus more appealing. Preference for simpler or more complex designs is also determined by individual characteristics (e.g., innovation-oriented people prefer more complex designs) and product type (e.g., for everyday food products, a simpler, flatter (vs. three-dimensional) logo is preferred, while prestige products require a more unique design) (Bossel et al., 2019; Northey & Chan, 2020; Pieters et al., 2010).

Although fewer in number, some studies have investigated how to improve cognitive and perceptual fluency in relation to eco-labels. In particular, to address the main problem of lack of recognition and sufficient information, a combination of eco-labels and descriptive (rather than

emotional) text alongside them has been seen to improve cognitive fluency and purchase intention. In addition, one study found that an eco-label with a fitting picture and some text is considered more pleasing and thus leads to more positive overall product evaluations. Typefaces are also another interesting feature of eco-label design: more familiar fonts are easier to read and score higher on perceptual fluency and product taste ratings (Gmuer et al., 2015; Grymshi et al., 2022; Jaud & Melnyk, 2020; Wang et al., 2022).

Finally, little or no research has analyzed processing fluency in relation to the combination of labels or meta-labels. However, as mentioned above, meta-labels offer many advantages: from a graphical point of view, the use of simple and intuitive design, colors (e.g., green for eco-friendliness), icons, and symmetrical arrangement of information contribute to greater perceptual fluency, while from a conceptual point of view, a meta-label offers the advantage of showing the connection between different dimensions of sustainability.

Therefore, the following hypothesis is proposed:

H2: Visual processing fluency mediates the relationship between meta-label (vs. eco-label combination) and purchase intention (WTP, WTB) for the product. Specifically, a metal-label has a positive effect on visual processing fluency, which in turn increases purchase intention for the product.

CONCEPTUAL MODEL

Based on the research conducted up to this point, the study will analyse weather a meta-label is indeed more effective than a combination of eco-labels in driving consumers' purchase intention for a given product. Specifically, WTP and WTB will be investigated (Dodds et al., 1991; Duckworth et al., 2022). The model will be mediated by visual processing fluency (attractive, eye catching and easy to process) (Labroo et al., 2008). It's expected that respondents will express a preference for the meta-label, and that the meta-label will be considered easier to process, both from a graphical and conceptual viewpoint.
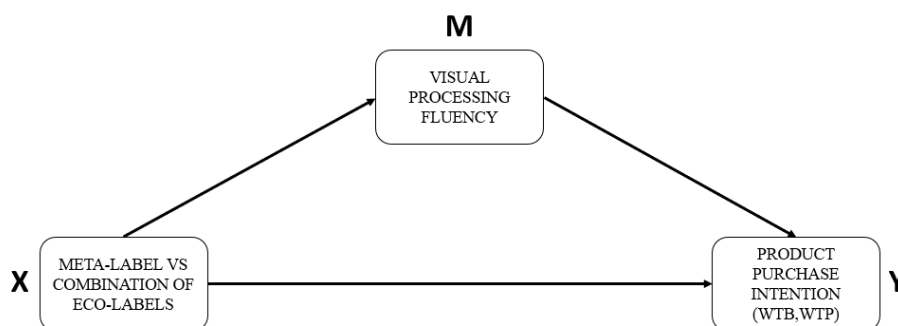
Chapter 3

OVERVIEW

The study focused on the dairy sector because of the growth of the market for organic products (fruits, vegetables, dairy products, etc.); the fact that the dairy sector has the most eco-labels and is the one for which customers are willing to pay a higher premium; the growing consumer interest in different aspects of sustainability; and the relevance of these dimensions in the dairy sector (Bastounis et al., 2021; Fortune Business Insights, 2022; Janßen & Langen, 2017). Indeed, a 2021 Institute for Agriculture and Trade Policy (IATP) report noted that just 20 European meat and dairy companies produce the equivalent of more than half the emissions of the United Kingdom, France, and Italy (Shefali Sharma, 2021).

In order for the dairy sector to move toward more sustainable production methods, a global Dairy Sustainability Framework (DFS) has been introduced which takes into account 11 economic, social and environmental sustainability criteria (DSF, 2021). One of the members of the DFS is Granarolo, the leading company in Italy by turnover in the dairy sector and a forerunner for the introduction of a unique logo, "Bontà Responsabile." The logo represents the company's commitment towards four different sustainability aspects, related to both environmental and social dimensions. Similar to a meta-label in terms of information, but confusing in terms of design, the logo emphasizes the need for a more graphically clear composite label in the dairy sector (Sgambato, 2021; T. Ozbun, 2023).

To identify the most widely used eco-labels in the dairy sector, a field survey was conducted in March in six supermarkets in Rome and Pescara. After careful observation of the product packages, seven eco-labels were chosen, four related to the environmental aspect (FSC, Carbon Neutral, Carbon Trust, EU Organic) and two related to the social sphere (two certifications related to animal welfare, the one issued by CSQA (Certification of Safety of Agri-food Quality) and the certification of the Italian Association of Breeders of Wild Breeds, certified by the Department of Agri-food Quality). In addition, since no specific eco-label on fair working conditions was found on milk packages, the Coop Generic Claim "Coop products are made without discrimination or exploitation of workers" was used first, either alone or followed by the name of the Standard Responsibility Certification (AIA, 2020; Bertocchi, 2019; Big Room Inc., 2023; Coop, 2023; CSQA, 2023a; FSC, 2023; Laura Saggio, 2020; SAI, 2023).

Then, a preliminary Qualtrics XM questionnaire conducted in March among 84 active respondents noted that among the 4 environmental labels, the most well-known were FSC and EU Organic.

Regarding the social aspect, given the interest and WTP noted in previous studies, it was decided to use, among the two certifications related to animal welfare, the clearer one (the one issued by the Agri-food Quality Department as it does not use abbreviations), while for workers' conditions, Fair Trade was preferred, which is one of the most recognized and reliable eco-labels (Fair Trade, 2023; Fairtrade International, 2023; Latte Sano, 2023; Payne et al., 2013).

At the end of the preliminary study, therefore, 4 eco-labels were selected, two related to the environmental dimension (FSC, EU Organic) and two related to the social sphere (Animal Welfare (certified by the Department of Agri-Food Quality) and Fair Trade).

METHODOLOGICAL APPROACH

The main study consisted of a conclusive causal between-subjects 2X1 research design. The results of the experiment are represented by responses conducted in Italy during May 2023 using the online platform Qualtrics XM and a convenience sampling methodology. A total of 256 respondents aged between 18 and 76 years old and mostly female (59,4%) actively participated. The questionnaire was divided into 4 main parts. After a brief introduction with the explanation of the academic purpose, the second part of the survey was a randomized block consisting of two separate scenarios, one being a combiantion of 4 eco-labels (FSC, EU Organic, Animal Welfare, Fair Trade) on a milk package and then a zoomed in, and the other being a meta-label, placed likewise on a milk package and then enlarged to facilitate readability. The meta-label summarized information relative to the same eco-labels present in the first scenario, in particular the explanation of each eco-label and the related certification were grouped by subject benefitting from the sustainable practise, as in the 2019 study by Kocsis & Kutlits. Product mock-ups were used for both scenarios to avoid possible cognitive bias and conditioning related to brand sentiment. The third part of the study was presented to respondents after being subject to the observation of one of the two scenarios and it consisted of 11 questions : the first three related to the first dependant variable, willingness to buy, another question related to the second independent variable, willingness to pay, four more questions related to the mediator, visual processing fluency, and finally four questions related to a possible control variable, sustainable consumption purchases. In particular, the second dependant variable, WTP, asked respondents to indicate their preferred milk price for a one-liter carton of milk, considering a range of 7 possible alternatives, from a market price of 1,20 euro to a maximum price of 2,10 euro, through gradual 0,15 cents increments. All questions were scored using Likert scales based on 7-point ratings. The

last part of the questionnaire was a demographic block, which questions about age, gender, education, and income.

Before conducting the main study, a pre-test was developed to test the validity of the experimental conditions, it was proved that participants who saw the meta-label found it less difficult to understand than those who saw the combiantion of eco-labels. Indeed, the results of the reliability test proved the reliability of the scales related to label comprehension ($\alpha = 0{,}971$) while the independent sample t-test proved that the difference between the means of the participants who saw the 2 scenarios was significant. Given the success of the pre-test it was possible to conduct the main study.

EXPERIMENTAL RESULTS

As for the pre-test, also for the main test data was exported for analysis from the Qualtrics XM platform on the Statistical Package for Social Science (SPSS) software. Firstly, all scales (first dependant variable, mediator, control variable) were validated, by conducting an Exploratory Factor Analysis. Secondly the reliability test proved the overall consistency of all the scales: WTB ($\alpha = 0{,}964$), visual processing fluency ($\alpha = 0{,}928$), sustainable purchases ($\alpha = 0{,}910$). Then the main hypotheses of the conceptual model were examined so that their statistical significance could be accepted or rejected.

Regarding the first hypothesis, with respect to the first dependant variable (WTB), by conducting a One-Way ANOVA, it was found that people who saw the Meta-label (mean value = 5,6042) expressed a higher WTB with respect to those who saw the combination of eco-labels (mean value = 3,6016) and the difference between the means was statistically significant (p-value $< \alpha = 0{,}05$).

Also, regarding the first hypothesis, with respect to the second dependant variable (WTP), first a descriptive analysis was conducted: the dataset was filtered so that first only the cases where people saw the combiantion of eco-labels were shown (mean price 1,50 euro; mode 1,20 euro) and secondly only the cases where they saw the meta-label (mean price between 1,65 and 1,80 euro; mode 1,80 euro). Secondly, by conducting an Anova, it was shown that the difference between the two mean prices was significant, (p-value $< \alpha = 0{,}05$) with people willing to pay up to 0,30 cent more for the meta-label. Therefore, H1 was confirmed.

As for the second hypothesis, two regression analysis were conducted by applying Model 4 of Process macro, Version 3.4, to test the mediating effect caused by visual processing fluency towards the relationship between the independent variable (label format: meta-label vs

combiantion of eco-labels) and the dependant variables (WTB, WTP analysed separately). In addition, the effect of the covariate, sustainable purchases, on the mediator and dependant variable was also analysed.

More in detail, results showed that the independent variable had a positive effect on the mediator (visual processing fluency) (β =1,7976; p-value = 0,0000) meaning that people who saw the meta-label found it more appealing, eye-catching, and easy to process (also the covariate, sustainable purchases, had a significant positive effect on the mediator, β = 0,3764; p-value < 0,0000). In addition, the mediator had a positive effect both dependant variables, WTB (β = 0,6550; p-value = 0,0000) and WTP (β = 0,5493, p-value = 0,0000) (also, the covariate, had a significant effect on both WTB (β = 0,3038; p-value = 0,0000) and WTP (β = 0,2035; p-value = 0,0000)). Finally, the direct, indirect, and total effect of mediation was found to be significant for both WTB (β direct= 0,5521; CI direct = [0,2437; 0,8605]; β indirect = 1,775; CI indirect = [0,8346; 1,5523]; β total effect = 1,7296; CI total effect = [1,3686; 2,0905]) and WTP (β direct= 0,4966; CI direct = [0,0575; 0,9356]; β indirect = 0,9874; CI indirect = [0,6843; 1,3424]; β total effect = 1,4840; CI total effect = [1,0546; 1,9134]), confirming the success of the mediation and therefore H2.

DISCUSSION

The following study offers several insights from a managerial perspective. First, it highlights the importance of focussing on milk packages to the social dimension in addition to the environmental one, as both literature and empirical research have shown that consumers are willing to pay a premium for a single certification that refers to both dimensions. In addition, regarding certifications, it was evident that dairy industries must improve communication about them, and that consumers prefer environmental certifications that cover the entire product life cycle rather than just a single stage. Finally, as much as the meta-label involves substantial implementation costs, it also offers numerous benefits in terms of WTB and WTP and leads to the adoption of higher sustainable standards.

Future research could integrate both quantitative and qualitative research tools (in depth interviews, focus groups, etc.), as well as neuromarketing tools such as eye-tracking, to measure, through on-site research in supermarkets, consumers' response to the meta-label. Also, in terms of the selected product, another sector that could be investigated is the meat sector, given the substantial environmental impact and the fact that the type of product would allow, in terms of WTP, to choose larger price deviations among the options.