Food labelling as Choice Architecture:

An examination of the influence of food labels in the consumer decision-making process of healthy products among young consumers

A Dissertation Presented by Larissa Figueiredo

.

Submitted to the National College of Ireland in partial fulfilment of the requirements for the degree of Master of Science in Entrepreneurship

Dublin, August 2021.

Submission of Thesis and Dissertation

National College of Ireland
Research Students Declaration Form
(Thesis/Author Declaration Form)

Name: Larissa Chaves Figueiredo

Student Number: 20136129

Degree for which thesis is submitted: Master of Science in Entrepreneurship

Title of Thesis: Food labelling as Choice architecture: An examination of the influence of food labels in the consumer decision-making process of healthy products among young consumers

Date: 16/08/2021

Material submitted for award

A. I declare that this work submitted has been composed by myself. ☑

B. I declare that all verbatim extracts contained in the thesis have been distinguished by quotation marks and the sources of information specifically acknowledged. ☑

C. I agree to my thesis being deposited in the NCI Library online open access repository NORMA. ☑

D. I declare that no material contained in the thesis has been used in any other submission for an academic award. ☑

Abstract

Food labelling as Choice Architecture: An examination of the influence of food labels in the consumer decision-making process of healthy products among young consumers

Larissa Figueiredo, MSc in Entrepreneurship, National College of Ireland

The World Health Organization (WHO) reported a worldwide increase in obesity and non-communicable diseases caused mainly by unhealthy eating habits. The wide range of industrialized products rich in sugar, salt, and fat (especially hydrogenated) advertised by the food industry have significantly contributed to this scenario. As explained by studies, the use of choice architecture strategies has influenced consumers' food choices over the years, impacting on their health and well-being.

As a result, one of the nutrition and health measures found to change this scenario was the implementation of easy-to-understand food labels. However, several authors have analysed the effect that food labelling has on people's choices and the conclusion is that most of consumers do not know how to interpret labels. Consequently, the guideline proposed by the WHO has not been effective.

Furthermore, the researcher identified two relevant gaps in the literature. One refers to the lack of studies that analyse ingredients list and nutrition facts as a criteria to people's food choices. The other gap is the existence of little research on how choice architecture strategies could help consumers to make healthier choices.

Therefore, the author of the present study decided to investigate in more depth individuals' perceptions and understanding of food labelling through a qualitative study. The mono-method research strategy had semi structured focus groups to collect the primary data using an inductive research approach. The research methodology chosen allowed the author to develop a thorough study, to explore valuable concepts in marketing and nutrition fields, and to fill the gaps mentioned previously.

Acknowledgements

I sincerely thank my supervisor, David Hurley, for his amazing support and help during the whole process. David's patience, comprehension, and expertise were essential to guide me in the right path to complete this project.

I also thank all the lecturers of the MSc in Entrepreneurship at the National College of Ireland and its staff. We all have gone through a tough year due to the pandemic, however, all members of NCI made a huge effort to make this experience the best possible.

To my friends, thanks a lot for your support and advice during this time, especially Mayara, Daniele, and Debora. I appreciate all the time you spent to share your experiences and knowledge with me. Thank you for always listening to me when I needed and for being such amazing friends!

To my psychologist, Leticia, I have no words to thank you for helping me to believe more in myself. I could not have done this master's without your wonderful sessions.

To my partner, Marcelo, who has been my best friend for almost 9 years. Thank you for being by my side all the time, cheering me up, and showing to me that I can do great achievements. All your patience, understanding, and caring were crucial to help me during this whole time.

Finally, I am very grateful to my family, especially my mother, Eunice, and my siblings, Marcella and Rogerio. You have been always available for me, encouraging me to face life challenges and, more than that, you believed in my potential even when I could not believe in it. To my father, who is looking after my family and I from heaven, I am sure you are very proud of this accomplishment. All of you mean everything to me!

Table of Contents

List of Figures

List of Tables

Chapter 1. Introduction

1.1 Background of the Study

1.1.1 The rise in obesity and noncommunicable diseases in Europe

A report developed by the World Health Organization (2018) presented an increase in the number of people who have obesity, diabetes, hypertension, and cardiovascular diseases in the past six years. These health issues represented 89% of deaths in Europe in 2015 which caused great concern for public health policies. One of the reasons that highly contributed to this scenario was dietary habits. On the one hand, the consumption of industrialized products that are rich in sugar, hydrogenated fat, sodium, flavourings, and preservatives has been high. On the other hand, the intake of fruits, vegetables, whole grains, and fresh food has decreased over time (Corvalán Aguilar et al., 2019). Consequently, those eating habits contributed negatively to changing not only the European food pattern, but also around the world. Studies outlined that by 2025, 24% of men and 30% of women will be obese worldwide if this pattern does not improve (Meisinger et al., 2016).

1.1.2 The use of choice architecture within the food industry

One of the strategies used by the food industry to profit more from the sale of nutrient-poor products is called choice architecture. Supermarkets, grocery stores, and convenience stores organize their environments to influence consumers' choices and, 80% of these strategies are focused on the sale of pre-packaged foods. Industrialized, highly, and ultra-processed foods are often displayed on easily accessible shelves with tags specially designed to catch people's attention (J. Van Buul & Brouns, 2015; Pechey et al., 2020). In addition, manufacturers invest in creative, interesting, and sophisticated packages to stimulate customers' curiosity and desire. Moreover, the food and beverage market explores the use of information contained in labels such as health and nutrition claims and/or benefits to induce consumers to buy them (Pechey et al., 2020).

1.1.3 Food labelling and consumer's food choices

The World Health Organization (2018) argued that one of the policies to reduce the risk of obesity and noncommunicable diseases is the implementation of easy-to-understand labels on pre-packaged foods. In this way, consumers can make better choices that directly impact their health and well-being. However, researchers found that more than 50% of consumers do not know how to interpret the information contained on food labels. Considering individuals who understand food labels, most of them had previous knowledge about health and nutrition and/or were on a diet to improve their eating habits (Nieto et al., 2020). Another aspect analysed was the wide variety of food label formats, which tend to confuse consumers because they are not taught about the meaning of diverse symbols, percentages, and numbers presented in the labels (Ducrot et al., 2015). Furthermore, previous research has reported that clear and easy-to-interpret labels, especially on the front of the package, can influence consumers to make healthier choices (Hodgkins et al., 2015; Sack et al., 2009).

1.2 Gaps in the Literature

1.2.1 The use of list of ingredients and nutritional facts to influence people to make better choices

The existing literature significantly evaluates the influence of front-of-package (FOP) labelling on consumers' decisions. Traffic-light systems, symbols, and nutrition & health claims appeared as the most analysed information by customers when choosing a product in grocery stores. It is known that this information is important, however, it has been proved that in some cases this content can be unreliable and overvalued. An example is the information "no added sugar" which can be misused in products that contain sugar written with a different name in the ingredients list. Another case is the use of "reduced fat" that can be misinterpreted by consumers since it is a comparison to the original product and does not mean that it has a considerable low amount of fat (Julia et al., 2017; Kanter et al., 2018; Nieto et al., 2020).

Moreover, a few studies have investigated the importance of examining the list of ingredients and nutritional information/facts to identify products with good quality. Several authors have discussed that focusing only on FOP content can mislead consumers to make unhealthy choices thinking the opposite due to the marketing strategies used. However, the use of these two data as the main source to help consumers to make healthier choices has been under-studied and has not been explored enough by researchers (Cabrera et al.,2017; Talati et al., 2016). Thus, the author of the current research aims to initiate to fill this research gap, investigating if and how people use the ingredient list and the nutritional information when looking for a healthy product.

1.2.2 The link between consumers' opinion about which type of label is most helpful when making healthy choices and choice architecture strategies

Although consumers' perception of food labelling has been widely studied, most authors' basis are focused on getting people to choose which label currently available in the food industry is the best (Kanter et al., 2018; Khandpur et al., 2018). However, there is a significant need to explore individuals' perception of what information they would like to find on a food label to improve their choices and impact healthy decisions (Nieto et al., 2020; de Morais Sato et al., 2019).

De la Cruz-Gongora et al. (2017) indicates that it is primarily subjective the way consumers understand, interpret, and accept the message communicated in labels. Consequently, it is more difficult to trace a label project that highlights everything considered relevant by each customer around the world. Nevertheless, there is no significant number of studies that explore this angle as a central subject and, the ones that study, are mainly quantitative.

Furthermore, as stated by Thorndike (2020), the food and beverage industry has been using heavy choice architecture strategies to sell industrialized products for over ten years. As a result, even when consumers are trying to focus on a healthy diet, they can easily get caught up in these strategies that, over time, can cause negative effects on people's lifestyles without them realizing it. Then, it has been discussed that understanding consumers' wants and needs in relation to food

labelling is a way to build new choice architecture strategies to effectively promote health products within the food industry (Young et al., 2020).

Thus, the author of the present research believes that the more thoroughly this matter is investigated, the closer a conclusion will be reached. Therefore, the researcher aims to begin to fill this another research gap in the literature, analysing qualitatively consumers' opinions and helping to build future effective food labels based on the choice architecture model and the ideas gathered in this paper.

1.3 Academic Justification

Despite the fact that the relationship between food labelling, choice architecture, and consumers' decision-making process has been investigated in academic studies within the marketing and nutrition field; little research that combine all these elements and also focus on healthy eating habits have been conducted and published (WHO, 2017; Young et al., 2020).

The existing literature has concentrated its studies using the quantitative research strategy which has collected relevant statistic data (Cabrera et al., 2017; Ducrot et al., 2015; Emrich et al., 2017). However, to assess consumers' knowledge about food labelling and its implications for healthy food choices, it is essential to analyse internal and external elements that impact on people's decisions which tend to be more qualitative rather than quantitative data (WHO, 2017). Additionally, given the scenario described previously, in which consumers have difficulties to understand food labels, what notably impacts their health and well-being, it is important to investigate in depth what has caused this issue (Young et al., 2020).

Even though the available studies have provided well-grounded theories to evaluate the use of choice architecture strategies to induce consumers to purchase products; individual's perceptions of healthy and unhealthy food were not considered as a primarily element that influences it. Thus, the current study enhances existing academic research by exploring all gaps mentioned up to this part of the study.

Furthermore, given the researcher's background in both marketing and nutrition, there is a particular interest in studying consumers' decision-making process based on what they perceive of food labels and its link to healthy choices. In the context of

healthy lifestyle, it is known that in the past five years people have been more concerned about their health and well-being what has significantly impacted the change of eating habits (Ikonen et al., 2019; Lusk, 2019).

The consumption of organic, natural, gluten free, vegan, and vegetarian products has increased in recent years. Consequently, the trade of products with these characteristics in supermarkets rose significantly, considering that farmer and agricultural fairs were usually the most accessible places to find those items (Domke, 2018; Grebitus et al., 2017).

Finally, since the author aims to work within the food industry, this piece of work is highly relevant in terms of consumers' attitudes towards food labelling and its impact on better food choices. The current research has explored this subject from a different perspective which is an advantage in the marketing and nutrition fields and represents the author's effort to provide a disruptive study.

1.4 Overall Aim of the Research

Considering the gaps found in the literature regarding food labelling and consumers' perception, the present research aims to start filling the gaps highlighted in the previous section by developing an improved awareness of the prevalent understanding of individuals about food labelling, the resulting impact this has on people's food choices and lifestyle, and the potential role that choice architecture strategies play within the context of healthy food choices. To achieve this aim, the research questions outlined in the next section will be answered through the present study.

1.5 Research Questions

Due to the gaps identified in the literature explained in section 1.2, five research questions were designed to investigate the subjects that have been understudied recently. These questions were based on the research objectives that will be explained in detail in Chapter 3.

1. What are the most significant impacts that food labelling can have on people's health?

2. How often people search for vs. are exposed to healthy food through its label?

3. How much people understand about food labelling?

4. What are the specific benefits gained from properly understanding food labels?

5. How does food labelling improve healthier choices?

In the following section, the principal research methods used to answer the questions above are briefly described.

1.6 Methods and Scope

The existing literature has investigated the link between food labelling, consumer decision-making process, and choice architecture mainly quantitatively. Several authors have presented statistic data about this topic which reflects greater concern in relation to numbers than in relation to personal opinions, ideas, and thoughts within this field of study (Broers et al., 2017; Cecchini & Warin, 2016; Houghtaling et al., 2016). However, the present study identified this relevant research gap which guided the author to choose a qualitative research strategy. As stated by Haydam and Steenkamp (2020), to conduct a qualitative research is a way to find new information about a specific subject and to deeply understand people's behaviours and attitudes. It enriches academic works through thorough analysis, and it produces an informative content in the results of a study. Thus, the current research focused only on the qualitative method to perform the study and to evaluate the participants' answers in the focus groups. In-depth information on research methodology is delineated in Chapter 3.

1.6.1 Primary research sample: young adults (aged between 25 and 38 years old)

Marketing and nutrition research underline that adults in ages between 25 and 40 years old are more aware of the positive impacts that a healthy diet can have on their lives. Individuals within this age group tend to be more concerned about eating habits and practice of physical exercises since they are closer to the famous "middle age crisis". Additionally, studies have shown that this group is responsible for buying food

at home, whether they live with their families or alone. As a result, young adults are more likely to be exposed to food labelling and choice architecture strategies in supermarkets, convenience stores, and grocery stores (Aday & Yener, 2014; Kumar & Kapoor, 2017; Pham et al., 2019). WHO (2018) also reported that adults represent the second group most targeted by food-based dietary and nutrient-based dietary guidelines communicated by health organizations as presented in Figure 1.

Therefore, the population sample was chosen based on this data, including participants between 25 and 38 years old which confirmed the information found in literature and provided results more consistent with reality.

Figure 1. Food-based and nutrition-based dietary guidelines by target groups (WHO, 2018)
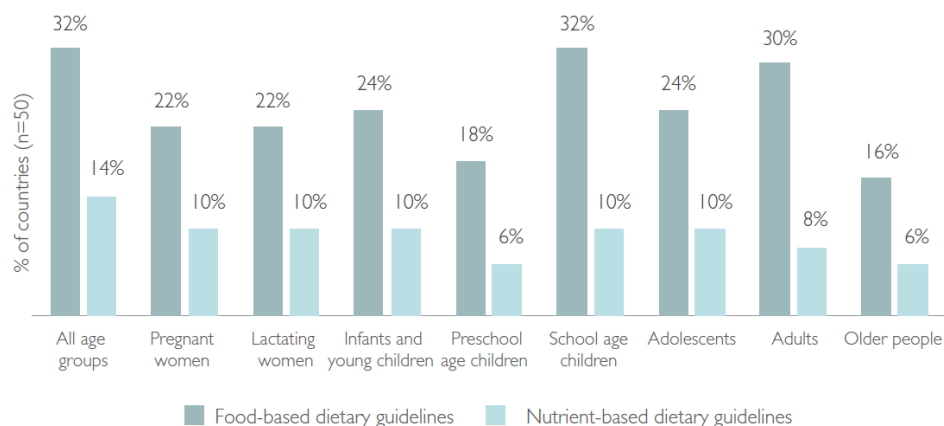
1.6.2 Scope of the study

Overall, 15 young adults who have lived in Dublin for over a year were divided into 3 groups of 5 to participate in discussions within focus groups. The author was also the mediator and conducted the conversation focused on consumers' food labelling understanding and perceptions to deeply explore the research questions defined in the previous section. The focus groups allowed the author to collect different opinions and thoughts which contributed to an extensive analysis of the primary data. Consequently, the data collected provided useful and interesting information that will be discussed in the current study.

1.7 Dissertation Structure

Chapter 1 – Introduction

The present study begins with a short and objective introduction to the research topic chosen by the author, highlighting the gaps identified in the literature on food labelling, consumers' perceptions, and choice architecture strategies which were the basis of the academic justification outlined in this section. In addition, the overall aim of the research, the research questions, the methods, and the project scope were broadly described in the introductory part.

Chapter 2 – Literature Review

In this chapter, the researcher presented most of the up-to-date academic studies about food labelling and its impact on consumers' healthy choices, the use of choice architecture in food contexts and in other scenarios, and consumers' perceptions of food labels. The literature review narrowed down broad information to more specific content which were explored through the study.

Chapter 3 – Research Methodology

The research methodology chapter outlines the research objectives defined for the study, as well as the main reason for the selected method used to collect the primary research data. Detailed information regarding the selection of the sample, the population sample, the philosophy behind the research methodology chosen, and the whole process to explain how the researcher conducted the primary research were specified in this chapter.

Chapter 4 – Research Findings and Discussion

This chapter combines all the results obtained in the primary research divided into the objectives defined in the Research Methodology chapter. The data collected is thoroughly analysed and compared to the existing literature, and the author also critically discusses the content through in-depth and well-grounded arguments.

Chapter 5 – Conclusion and Recommendations

At the end, the researcher presents the conclusions according to the research aims and objectives defined in the beginning of the study. Recommendations for future works within the academic environment and for practitioners were also included in this final chapter.

Chapter 2 - Literature Review

2.1 Chapter Introduction

In this section, the author presents, discusses, and analyses the existing content in the literature related to food labelling, choice architecture, and the influence of both in consumers' decision-making process.

2.2 Introduction to food labelling

According to the Food and Agriculture Organisation of the United Nations – FAO (2021), food label can be described as any identification such as a badge, brand, tag, or other expressive material that can be written, printed, or designed attached to pre-packaged food. It can be presented on the label, accompany the product, or even disposed next to the food to sell it or to discard it. Thus, as explained by the U.S. Food & Drug Administration – FDA (2021), food labelling is essential for most industrialized foods, for example cereals, breads, tinned products, frozen food, sweets, snacks, drinks, among others.

The European Commission (2021) mentions that all information contained on labels of food products must be explanatory and easy to comprehend. It should be a tool to help consumers to understand which options they have while buying food items and how these choices can impact their dietary habits. In addition, FAO (2010) reported the importance of having a reliable food label, since society has the right to know what is adequate to meet its needs and desires.

However, studies have shown that some labels are confusing and can induce people to think that a certain product is a healthy option because it has a specific information such as "sugar free", "no added sugar", "low sugar", "reduced sugar", "diet", "light", "low fat", "reduced fat", or "gluten free". As stated by Zepeda et al. (2013), only these characteristics are not sufficient to define a healthy product, it is necessary to evaluate the other content on the labels, for instance: list of ingredients and nutrition facts/information.

Although, this theory was undermined by studies which discussed that both the list of ingredients and the nutrition facts/information generally contain difficult terms that cannot be simply interpreted by consumers, and, in most cases, people do not

even know the meaning of those words and which nutrition facts are the most relevant (Ikonen et al., 2020). Regarding the variability of food labels and the difficulty of understanding part of the information contained in food packaging, some of them will be analysed in the next sections.

2.2.1 Food labelling formats

For the past ten years, several authors have been substantially studying the efficacy of diverse food labels formats, however, most studies discussed that it can be very subjective (Nieto et al., 2020; Brambila-Macias et al., 2011). As a result, the World Health Organization (2018) identified three principal structures as the most common within the food industry which are types of labels, front and back of package labelling, and categories of symbols.

According to the World Health Organization (2017), types of labels can be divided into nutrition declaration, ingredients list, and health and nutrition claims. The first is related to the portion, number of calories, and the quantity of macro and micronutrients such as carbohydrates, fats, protein, vitamins, and minerals contained in the product. The second presents all ingredients used in the production of the food item in descending order. Then, the last one refers to the benefits in terms of health and nutrition of eating a specific product such as 'rich in fiber', 'low in saturated fat', or 'organic'. Considering the types of labels described above, it is argued that all pre-packaged food must provide detailed information about its content, however, other studies have proven that consumers usually are more attracted by claims written on the package than nutrition data or ingredients table (Grunert & Wills, 2008).

In addition, several studies suggested that people frequently think that these labels formats are confusing and, sometimes, are not reliable or explanatory which directly influences their choices (Ares et al., 2018; Nieto et al., 2020; de Morais Sato et al., 2019).

2.2.2 Different types of food labels in Europe

As stated in research, the diversity of food labels began when it was realized that the population was experiencing an increase in health problems such as cardiovascular diseases, diabetes, and obesity caused by poor eating habits (Ikonen et al., 2020). The World Health Organization (2018) identified that the high consumption of products rich in trans and saturated fats, salt and sugar, and the insufficient intake of whole grains, vegetables and fruits contributed to this scenario. Thus, the most viable plan to change this context was to provide easy to interpret front-of-package (FOP) strategies on food labels to guide customers to make healthier choices.

The World Health Organization (2018) defines four types of FOP labels which can be found in European countries. The "KeyHole" scheme is very widespread in the Nordic region and this symbol aims to classify all products that have less salt, less sugar, more fibre, or whole grains, less or better fat than the original ones. It is said that the presence of this logo on food packages has optimized the purchase of healthier products, mainly because consumers do not need to read all the information disposed on the labels. In addition, the "KeyHole" can also be encountered in fresh food such as meats, fishes, tubers, vegetables, and fruits. Contrariwise, ultra-processed foods are not allowed to have this logo on their packages, for example candies, soft drinks, and products that contain artificial sweeteners (Onozaka et al., 2014).

Another food labelling identified by the World Health Organization (2018) is the heart symbol "Better choice" combined with salt warning labels that is mandatory in Finland. The idea is similar to what the Nordic countries have adopted when using the "KeyHole" and, even though the symbol is a heart, this does not mean that products that bring it in their packaging are only good for cardiovascular health, but also to promote a general well-being (Lahti-Koski et al., 2012). Several authors considered both "KeyHole" and "Better choice" as the best ways to identify a healthy food item since they comply with the most important criteria suggested by the WHO, which is to provide accessible and easy-to-understand information to consumers (Emrich et al., 2017; Onozaka et al., 2014; Trudel et al., 2015).

The third type of label presented by the World Health Organization (2018) has been used by France and it is called Nutri-Score. It consists in a front-of-pack label

formulated on a five-colour nutritional scale which goes from dark green to dark orange. Also, there are letters from A to E along with the colours to increase the logo intelligibility by the customers. Nutri-Score works through the calculation of a nutrient description scheme based on the United Kingdom's Food Standards Agency nutrient profiling system that was established to control television advertising to kids. The punctuation goes from -15 (healthiest) to +40 (least healthy), so the more foods which are high in energy (calories), sugar, saturated fat and sodium consumers purchase, they are likely to get an elevated positive score, which is characterized as bad dietary (Julia and Hercberg, 2017). Researchers argued that the Nutri-score does not facilitate the understanding of the label by consumers, on the contrary, it makes the process of eating healthily more complicated and not accessible to a high number of people due to the math involved (Ikone at al., 2015; Tonkin et al., 2018).

Finally, the World Health of Organization (2018) highlights the traffic-lights system embraced by the United Kingdom and Ireland. Traffic-lights labels inform the amount of energy (calories) and specific nutrients such as salt, sugar, total fat, and saturated fat. The colours used are red, amber, and green, and, according to them the product is classified as "high", "medium", or "low" respectively. Studies have shown that even though this type of food label has been the preferred option for most consumers, including places outside the UK like Australia and Canada; it can also lead people astray. This can be explained because all products with a fully red traffic-lights are considered unhealthy, however not all products that have a mixture of green and amber traffic-lights, all amber, or all green can be characterized as healthy. The last two situations can be easily misinterpreted by consumers since products that have the colours amber and green on their labels are seen as good options (Emrich et al., 2017; Kuchler et al., 2020; Khandpur et al., 2018).

Figures 2 and 3 show the types of FOP labels described in this section.

Figure 2. Examples of front-of-package labels around the world (Dumoitier et al., 2019)
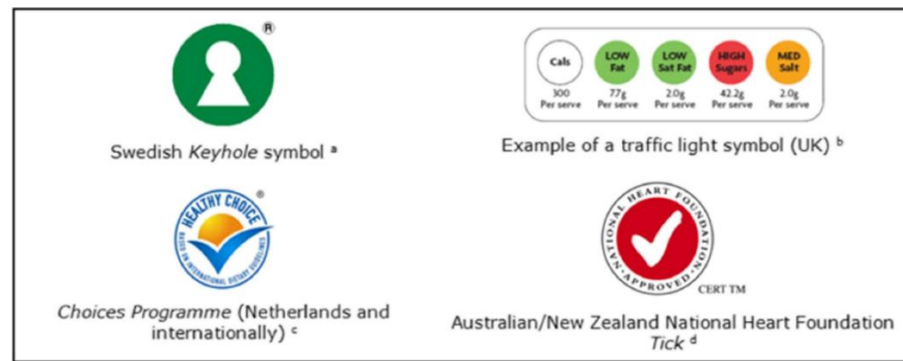
Figure 3. Examples of front-of-package labels in Finland and France (WHO, 2018)

2.2.3 Legislation for food labelling in Europe

The legislation for food labelling in Europe is based on the Directive 2000/13/EC of the European Parliament and of the Council established on the 20th of March 2000. This law presents all mandatory information that pre-packaged food items must inform consumers in relation to labels, presentations, and advertisements.

According to this Directive, there are some information that food producers or industries must provide on the labels, such as:

- name of the product.
- ingredients list.
- amount of specific ingredients or certain categories of components, for example additives and flavourings.
- net quantity.
- "use by" date.
- conditions of use and/or storage.

- name of the business, address of the manufacturer and/or the company responsible for the packaging process.

Focusing on the list of ingredients, European Commission (2020) explains that every ingredient shall appear written in descending order and in a way that consumers will fully understand. However, studies emphasized that customers usually feel confused about all the details contained on food labels since they are not sure about the meaning of some words described in the ingredients list. Also, it is shown that most of consumers do not know that the first ingredient is the one that appears in the biggest quantity in the product and the last one, the smallest, which is a key information to someone who is looking for healthier food items (Kuchler et al., 2020; Nieto et al., 2020; Khandpur et al., 2018).

In addition, there are other content that it is commonly found on food stuff labels which is the nutritional information. The Codex Alimentarius (2017) proposed by both FAO and WHO defines that nutrition labelling is obligatory to all pre-packaged food and must inform the quantity of nutrients contained in each product. Thus, the amount of energy, carbohydrate, protein, fat, saturated fat, sugars, sodium, vitamins, and minerals (when the quantity is relevant) shall be calculated based on the average data about nutrient intake and displayed numerically on food labels. As mentioned previously in this chapter, there is evidence regarding the difficulty presented by consumers in analysing and interpreting all these numbers. Many people have reported not knowing which nutritional information is most important. Others, who understand the relevance of it, do not know how to convert the values shown in the table into real diet habits (de Morais Sato et al. 2019). Clearly, previous knowledge gained from health professionals or reliable sources could change this scenario as argued by Khandpur et al. (2018) who conducted a study with people who were on a diet. Dieters tend to be more interested in health and nutrition which influences their food choices and impacts on how they analyse products' labels when looking for healthier options (Khandpur et al., 2018).

2.3 Introduction to choice architecture theory

Choice architecture was the theory chosen to assess the influence of food labels on the consumption of healthy products by consumers. The concept of choice architecture, also called as the design of environments, was first brought by Cass Sunstein and Richard Thaler on their book "Nudge: Improving Decisions about Health, Wealth, and Happiness" launched in 2008. According to studies, this theory is defined as an intervention in which the environment is subtly changed and organized to influence people's decisions (Johnson et al., 2012; Thorndike et al., 2017). These interventions can be either material, social or intelligence and generally are implemented in known situations such as homes or worksites to obtain a controlled behavioural analysis (Landais et al., 2020; Meder et al., 2018).

Choice architecture is typically adopted by organisations to benefit both company and customers through the simplification of the decision-making process. This strategy aims to improve customer experience and satisfaction, reduce risks of failures, and increase profits (Thomas, 2019; Meder et al.,2018). However, Harvard Business Review (2008) outlines that the design of environments can create defaults which are responsible for both positive and negative choices. Furthermore, these defaults can also be a useful tool to organisations, as they consider heterogeneity among consumers according to the type of decision-making most appropriate for them. There are customers who prefer to make active choices, others who prefer the influence of the company to guide their decisions, and some who do not care about making choices (Johnson et al., 2012).

2.3.1 How does choice architecture work?

As mentioned previously, the choice architecture can be put into practice in three different ways. The first is related to a physical modification that can be done within an environment to persuade people to perform certain actions. For instance, shopping centres have stairs, escalators, and lifts available to the public, however, some shopping's administrations use footprints on the floor to convince the majority to use the stairs or escalators and leave the elevators to those who really need it such as people with disabilities (Johnson et al., 2012; Landais et al., 2020).

The second way is characterized as a change in a social environment through the utilization of social rules that can be illustrative or directive. Using an illustrative approach is the same as giving information about other people's behaviour to induce the same or the opposite of it. An example are marketing campaigns promoted by governments to encourage society to do recycling in Europe (Almosa et al., 2017). On the other hand, the directive perspective has a more incisive method since it provides data about other's consent on specific circumstances (Landais et al., 2020). For instance, companies that are selling a new product often share videos on media that contain influencers or famous people recommending the product, talking about the good experiences they have had using it (Lin et al., 2018).

Lastly, there is a type of intervention that modifies the way the message is presented emphasizing the benefits or harms of something (Landais et al., 2020). A classic example described by BBC (2019) are the labels on cigarettes packs, which usually show images of people with lungs' diseases caused by smoking habits. Even though consumers will only see the message if they buy cigarettes, the goal is to warn smokers about the long-term damage caused by this product and try to change their behaviour over time.

2.3.2 Examples of choice architecture within the food context

A study conducted in primary schools' cafeterias in North Wales evaluated the use of choice architecture interventions to encourage the consumption of fruits and vegetables by children. Two schools were selected, one as a control and the other as an intervention. In the control school no changes were made while five strategies to make these products more attractive were adopted in the intervention school (Marcano-Olivier et al., 2019).

At the starting point of the dining row were placed brilliantly coloured advertises with fun and motivational messages about fruits and vegetables. Then, creative names such as "Dinosaur Tree Broccoli" and exciting images were used to label the food. Also, the way of serving fruits was changed to a more inviting format. Finally, vegetables were allocated before starters and principal meals as well as fruits were set before desserts (Broers et al., 2017; Marcano-Olivier et al., 2019;).

As a result, the study concluded that the consume of vegetables and fruits increased in the school that had the intervention. These data were measured by calculating the daily intake of fruits, vegetables, fibres, vitamin C, and sugar at lunchtime by children at primary ages (Broers et al., 2017; Marcano-Olivier et al., 2019). Thorndike (2020) argued that interventions such as the case described previously are relevant, however, the use of only one strategy to encourage people to change their dietary habits is not enough. It is necessary to not only change the environment but also change people's mentality in relation to healthy choices.

Another research made in the United States gathered some factors that influence retailers within the food industry to implement marketing strategies combined with choice architecture in American food stores. In the previous study, it was analysed the perspective of the consumer, but in this investigation, it was examined businesses' managers and owners' sides in relation to the design of environments (Houghtaling et al., 2019).

The methodology used was based on the analysis of data found on papers published between the years 2005 and 2017, and the focus was to promote strategies to motivate customers to purchase healthy food. According to the authors, it was identified that there is a difficulty in training the team to put the interventions into practice and to sustain them to improve the quality of the service. On the other hand, the interpersonal relationships between sellers and customers, employees and managers, and customers and team workers were associated as a good strategy to influence decision-making, especially when the relationship is friendly and reliable (Wilson et al., 2016).

Other elements spotted in the study were the food store environment, its supply management, and the community in which the store is inserted. Running a physical store requires fixed and variable costs, time, space, among other resources that can facilitate or difficult the process of changing the store's atmosphere. In addition, sellers realized that stocking healthy items was more expensive than unhealthy products which are usually stocked and delivered by its producers. Thus, bigger companies showed better infrastructure and management skills to apply them in comparison to local and smaller businesses. Moreover, the food store community appeared as an important element within this scenario. Depending on the store

location which can be in low, medium, or high-income areas, the other retailers can detain or not the knowledge about health and nutrition, which influences what products are going to be encountered on the store's shelves (Kraak et al., 2017; Pinard et al., 2016).

Furthermore, national and international policies and sociocultural values were described as significant factors in this research. It is known that there are rules that control the process of buying and selling healthy products to the public and it is essential that any retailer knows them to ensure the safety and quality of the products sold. Also, people have their own values and cultures, which impacts on their behaviours and the way they stimulate health and well-being (Story et al., 2008).

Considering the study conducted in the U.S., Bucher et al. (2016) explained that theoretical studies are important, but they are not as relevant as interventions. The combination of these two approaches could be ideal for the development of future work.

2.3.3 Critical analysis on choice architecture

Notably, the choice architecture theory plays an interesting role within the social environment since it is not a simple task to impact on people's decisions. However, considering that choice architecture is a tool that can be used by anyone, it is possible to identify both positive and negative impacts (Hertwig & Grüne-Yanoff, 2017).

The manipulation is considered the main negative effect caused by the misapplication of the choice architecture techniques, which is usually related only to influence buyers to purchase in bulk or more expensive products and make a higher profit to companies. In this scenario, the business is the biggest beneficiary and customers can be misled to get something that they would not normally buy (Loewenstein & Chater, 2017).

Other fact discussed in research is the higher impact of the use of choice architecture defaults on people that have lower income and lower literacy in comparison to people who have a higher level of education and, consequently, earn higher wages. Analysing the social impact of it, it can contribute to increase the disparities among

people from different economic classes within the society (Thomas, 2019; Mrkva et al., 2021).

On the other hand, studies argue that good strategies applied to the choice architecture nudges can generate positive impacts on both businesses and consumers. One example is the reduction of the use of plastic bags in supermarkets in Europe by charging them or offering eco-friendly options. This action improves environmental awareness and encourages people to change without noticing. It flows naturally and it makes people feel proud of themselves which can influence their following decisions. Overall, choice architecture nudges and defaults are important to shape decisions and are likely to be successful if policy makers and marketers understand the heterogeneity existent among consumers and develop the right strategies to reach the target segment considering both company and customer sides (Theotokis and Manganari, 2015; Haan and Linde, 2016; Trujillo et al., 2021).

2.4 The influence of choice architecture on young consumers' dietary habits

Supermarkets are considered the most common place to buy groceries worldwide and the impact that this has on people's dietary habits is highly relevant, but little studied (Young et al., 2020)

A research conducted in New Zealand showed that non-healthy items which are rich in sugar, fat, salt, preservatives, and flavourings represented most of the products displayed on supermarkets shelves in developed countries. In addition, the sale of this type of food is more profitable for the industry, which drives strong promotion and marketing strategies to attract customers' attention. Substantial part of these strategies is based on choice architecture, thereby, customers are influenced to buy more high and ultra-processed food rather than fruits, vegetables, grains, and fresh food (Charlton et al., 2015; Thornton et al., 2012).

Tags placed on accessible shelves (on the eye-line of the customer), price strategies, food samples, and mass publicity have been considered good interventions in supermarkets and groceries stores. However, the use of them is almost exclusive to promote and sell unhealthy products which impacts on consumers' food choices and, consequently, on their health and well-being (Hartmann-Boyce et al., 2018).

2.4.1 How can choice architecture strategies help consumers make healthier choices?

Despite the fact described above, the use of "nudges", as it is called, within the choice architecture theory can be helpful to consumers who are looking for a healthy diet.

It is known that consumer decision-making process is not only influenced by conscious concepts, beliefs and wants. As explored by the literature, the environment has a significant impact on people's choices, and it is the same in terms of food choices (Cameron et al., 2016).

Previous studies discussed that if the food industry puts as much effort as they put into choice architecture strategies to sell unhealthy food, the scenario of obesity and other chronic diseases caused by poor eating habits could be changed (Thow et al., 2010).

Then, researchers applied some interventions in different supermarkets around the world to investigate the impact of these on consumers' behaviour. The strategies used were based on changing the environment to encourage customers to buy healthy groceries. For instance, all healthy cereals were displayed in the most accessible shelves, salads were portioned into bowls facilitating its consumption, and healthy products received flashy tags to get people's attention. As a result, most of the consumers bought more healthy groceries than non-healthy items (Thow et al., 2010; Vermeer et al., 2009). However, as argued by some authors, people need to be educated to make better choices since the use of nudges are not sustainable in the long term. Knowing the importance of a balance diet, basic nutrition concepts, and how to understand food labelling are considered more effective to help people make better choices. Thus, if both strategies could be combined, consumers could experience positive changes in their lifestyle (Young et al., 2020).

2.5 What does influence consumers' decision-making process in relation to food choices?

Consumer behaviour has been thoroughly studied for the last few decades and it is known that there are many factors that can influence it, such as physical, psychological or emotional, neurological, social, and environmental aspects (Bauer

and Reisch, 2019). In the context of a healthy lifestyle, people are mostly influenced by the environment in which they are inserted and by personalities and brands that sell the benefits of eating nutritious food, practicing exercises, and taking good care of body and mind (Rojas-Mendez et al., 2015).

Considering people's behaviour in diverse scenarios and what influences it, the literature defines three factors that effectively impact on consumers' food choices.

2.5.1 Personal determinants

According to the literature, there is a wide range of personal determinants that can influence on consumers' food choices. However, some of them are considered stronger than others such as health and physical appearance. When growing up, people experience diverse types of relationships with others and with themselves. As a result, they create their own representations of healthy and unhealthy food considering the effects they feel when eating something. Also, the existence of "beauty models" have a strong influence on how they see their bodies as good or bad (Vila Lopez & Kuster-Boluda, 2016).

Another personal element that strongly affects people is emotions. It is verified that certain types of food cause feelings such as pleasure and joy. On the contrary, bad emotions can reflect on negative choices of food (Pettigrew, 2016; Roberts, 2008).

Other determinant is related to the appearance, taste, and smell of the food. The taste tends to be the most important factor to influence on consumers' decision, but when this knowledge is limited, people are more likely to choose products based on brands or price. In addition, cost and convenience are both important personal determinants, since more and more consumers value practicality and low prices when purchasing groceries (Ene, 2008; Rose et al., 2010).

Finally, environmental conscience and sociodemographic (age, gender, and literacy) play important role on people's food choices. Over time, consumers have been more conscious about the environment, thus, it has increased the consumption of natural and organic food, recyclable packaging, among others. Also, as showed by WHO (2017) and other researchers, young adults are more concerned about eating healthy than teenagers, women are more likely to choose healthier products than men, and

knowledge about health and nutrition highly impact on food purchases (Gould, 2002).

2.5.2 Sociocultural determinants

Culture is a strong determinant in many areas of peoples' lives, and it is the same in the context of food choices. As stated by research, food is a representation of culture that reveals important parts of the traditions of diverse civilizations. Food is what brings them together and what it is passed from one generation to another. Thus, family and relatives eating habits influence on consumers' food choices since they learn in childhood what is healthy, tasty, and represents their culture (Prescott et al., 2002; Rozin, 2006).

Eating habits of people on workplaces and schools are also relevant in the consumers' decision-making process. Individuals tend to acquire the habits of the people they live with the most, especially eating habits (WHO, 2017).

Furthermore, social media has become a strong influence on people's food choices. The easy access to technology and information has increased the number of people sharing what they do, including their dietary routine. As a result, more and more people are getting influenced by others about what they eat (Simeone & Scarpato, 2020).

2.5.3 Contextual determinants

Contextual elements are identified as a powerful determinant of people's food choices. Studies discussed that the availability and variety of products in groceries stores, as well as the environment in which individuals purchase food have a strong influence on their choices. A researcher discovered that depending on the light of the ambient, people can eat healthy or unhealthy food due to the message sent to the brain. In addition, the place where people usually eat can affect their choices since it can impact on people's emotions and feelings as well (Biswas et al., 2017).

Legal regulations and marketing strategies are also important to shape consumers' food choices (McFerran et al., 2010). As stated by Dimitri & Rogus (2014), the most relevant strategy within marketing in the food industry is the packaging. Consumers'

perception about a food item due to the information displayed on its label was identified as a powerful motivation to make individuals buy certain products.

2.6 The impact of food labelling on young consumers' dietary healthy habits – theoretical framework

There are several studies to evaluate the influence of food labelling on consumers' food choices in relation to healthy products. Most of them argued that all information contained on labels such as health claims, nutrition facts, list of ingredients, and labelling symbols can impact on people's decisions, however, it is not clear if consumers understand this content when they read it and if their choices are, in fact, based on food labels (Ares et al., 2018; Bucher et al., 2016; Cameron et al., 2016).

To investigate the real impact of food labels on better food choices by consumers, Grunert & Wills (2007) created a framework based on the results of 58 studies conducted in Europe about consumer behaviour. This theoretical framework examines five principal elements that are involved in this process, and it was used in the current research as a model to develop the questionnaire applied in the focus group method and to analyse the results found.

2.6.1 Search and exposure

Grunert & Wills (2007) explain that the first step to explore the impact of food labels on consumers is to investigate whether they are exposed to it or not. As an example, people who prepare a shopping list before going to a grocery store are more likely to pay attention at what they are purchasing than people who only decide what to buy when they are inside the supermarket, by impulse or influenced by marketing strategies. In addition, if consumers search for something specific, it increases individuals' exposure to food labels since they are more likely to read the information displayed on them (Grunert & Aachman, 2016).

2.6.2 Perception and understanding

Subsequently, consumers tend to perceive the information on food labels which can happen in two ways. One way occurs consciously, so the individual is focused on the content. On the other hand, the second way is subconscious, and the person does not process the information completely. Decisions made subconsciously are more likely to not be based on nutrition information contained on labels. Moreover, the way consumers perceive a label diverge from the real meaning of the message. Thus, understanding the content provided by a food label is essential to guide people's choices. Nevertheless, inferences can happen which can be either subjective or objective. A subjective inference tends to be similar to the perception, on the contrary, an objective inference is inclined to be very close to the message communicated by the food label content. Researchers argued that most consumers can understand basic information on food labels, although, the more specific and complex the details, the less the person is likely to comprehend (Miller & Cassady, 2015).

2.6.3 Use

According to Grunert & Wills (2007), there is a lack of studies that evaluate if consumers use food labels to decide what to purchase in food shops. Most researchers outlined an extensive use of nutrition labels to guide people's food choices, however, it is not proven that they use it indeed and, when they use it, there are no further investigation if they understand them.

Thus, Grunert and Wills discussed that consumers might read food labels but not use it as a tool to choose products. In fact, there are only two situations when they use the information contained on the front of the package, one is to test a new product and the other is to compare two different brands.

2.6.4 Liking

Liking something increases individuals' interest on it. Grunert & Wills (2007) reported that consumers tend to like diverse label formats that use a wide variety of colours, symbols, creative shapes, and interesting information. As stated in the study, people

analyse three elements to decide if they like the label or not. The first characteristic is simplicity. In consumers' point of view, the less time used to analyse the label and the easier it is to understand all the information, the better. Then, consumers like to understand the meaning of symbols such as traffic lights and health logos. Finally, customers do not like to feel pressure to behave in some specific way, thus, they do not show much interest in nutrition information.

2.6.5 Evaluation and decision

The last stage of the consumer decision-making process is to evaluate the pros and cons about a product and to decide whether to purchase it or not. As argued by Grunert & Wills (2007), this phase is only possible if consumers go through an efficient exposure and/or search first. Then, understanding the content of the food label, using its information to guide their choices, and be satisfied with the product can result in a positive experience provided by the label.

Finally, the researcher highlights two articles that contributed to the development of the current project. De Morais et al. (2019) and World Health Organization (2017) are qualitative studies that stood out in the existing literature since both explored similar angles to those investigated in the present research.

Chapter 3 - Research Methodology

3.1 Chapter Introduction

According to a model developed by Saunders, Lewis, and Thornhill (2019) called "research onion", the research methodology should be divided into six principal subsections to organize its structure and make it easier to understand for both the authors and the readers. Given that, this section starts presenting the aims and objectives of the study followed by the proposed research methodology. Then, based on the "onion model", the author explains the philosophy behind of all the research, which was the most appropriate approach to explore it, and the main strategy used to collect all the data needed. Subsequently, the method chosen, and the population selected are going to be introduced and justified using relevant references, and all the material collected is going to be analysed. Finally, the research methodology section ends up giving a brief overview of the ethical issues and limitations involved within the study.

3.2 Research Aims and Objectives

Due to the rapid increase of the noncommunicable diseases such as diabetes, hypertension, and obesity among young adults caused by poor eating habits; it was established by the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) that the food industry should provide adequate food labels so that people could make better and healthier choices when purchasing their food (WHO, 2018). However, the reality has been very different since studies have shown that even though the labels presented on food items are complete, the content provided is not easy to understand and most of it has been seen as too much information to be interpreted by consumers (Borgmeier and Westenhoefer, 2009; Nieto et al., 2020).

Thus, the current research aims to investigate the way customers perceive food labels, how they are influenced to buy healthy groceries, highlighting food labelling strategies based on the choice architecture theory and evaluating the impact of these food labels both in consumers choice criteria and in the quality of their eating habits.

Furthermore, it was defined five more specific research objectives that are listed below:

Table 1. Research objectives

Research objective 1	To investigate whether people search for or are exposed to food labels and the importance of it.
Research objective 2	To examine people's perceptions and understanding on food labelling.
Research objective 3	To assess how people use a label's information to their advantage.
Research objective 4	To analyse the impact of food labelling on healthier choices.
Research objective 5	To evaluate the benefits that motivate people to choose healthy products.

3.3 Proposed Research Methodology

The main objective of the current research is to qualitatively examine how food labelling impacts consumers' decisions when looking for healthy products using an investigative method. Given the findings in the literature review, it was spotted that there is a controversy between the role that the label should have and how it is perceived by consumers. Therefore, to preserve the neutrality of the author, diverse methods and methodologies were analysed, discussed, and compared in this section.

As mentioned previously, the research methodology framework used to develop the study is based on the research onion (Figure 4) proposed by Saunders, Lewis, and Thornhill. According to these authors, the research process in not only about collecting data and analysing it – these are inside the deepest layer. However, there are more phases that every researcher needs to go through before fully immersing

in the data section and each one of them determines different research methods (Saunders et al., 2019).

According to the authors, the first layer is called philosophy and will guide the writer through the following steps which are the approach and strategy. During this process, researchers should evaluate their thoughts, beliefs, and assumptions to make the best decision that will be a great fit for the study. Following that, the choice of methods, time horizon, data collection and data analysis will flow accordingly, and the research methodology will be completely and thoroughly explored. Thus, the next sections will explain in detail what each of the layers means (Saunders et al., 2019).

Figure 4. Research Onion (Saunders et al., 2019)
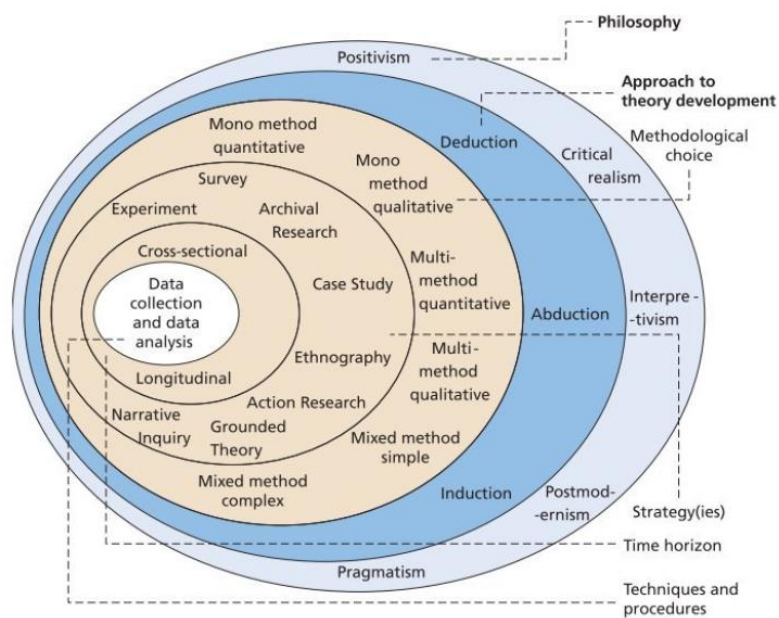
3.4 Research Philosophy

The main role of the research philosophy is to identify in which theories the knowledge is based on according to researchers' beliefs and skills. The selection of a research philosophy is usually personal; however, some authors argue that it can also be determined by the prior knowledge that the academic has acquired (Saunders et al., 2019; Haydam and Steenkamp, 2020).

As mentioned by Saunders, Lewis, and Thornhill, the philosophy is the outermost layer of the research onion model (Figure 4) and it is divided into three different perspectives which are ontology, epistemology, and axiology.

3.4.1 Ontology, epistemology, and axiology

Ontology is defined as the presumption of "the nature of reality". In other words, when investigating a specific situation in real life, the ontological approach focuses on what already exists, how it happened, and the way it was managed. Commonly, it is not considered another angle to solve or change the reality studied. This assumption can be either objective or subjective (Saunders et al., 2019).

On the other hand, the epistemology has as its basis the knowledge. All diverse types of knowledge such as verbal, written, or numerical data are relevant to build reasonable and sustainable narratives. In addition, the way the knowledge is reported significantly impacts the results of the research. Since the epistemology perspective embraces a broad range of theories, it gives the researcher many choices of methods that must be carefully selected through the evaluation of their strengths and weaknesses (Saunders et al., 2019).

Finally, the third approach within the research philosophy is axiology, which alludes to values and ethical principles. As mentioned by Heron (1996), personal values and beliefs can shape the way a research will be conducted since they guide human actions and decisions. Thus, choosing a specific research topic or research methodology reveals which values are most important to represent the author's deepest essence when conducting a study (Saunders et al., 2019).

Given the three contexts described above, the epistemology was the angle chosen by the author to carry out the current study. The reason for not selecting ontology or axiology perspectives can be explained by the aim of the research which is essentially based on the knowledge of the participants on food labelling. As discussed by literature, the epistemology approach guides the research process through validation and reliability which are considered essential to the data collection and its analysis.

3.4.2 Interpretivism

Saunders et al. (2019) argue that interpretivism is an epistemological orientation that requires researchers to understand the objectives of the study through social science analysis. It considers that different people present diverse backgrounds which results in contrasting perception of the reality.

The main idea of interpretivism within a study is to generate new and substantial conceptions of social environments. This perspective matches the principal aim of this research and reinforces the subjectivity contained in qualitative studies that are responsible for building distinctiveness and meaningfulness to the field of research.

3.4 Research Approach

Easterby-Smith et al. (2012) highlighted three reasons to justify the importance of defining the research approach. First, they argue that having a well thought-out approach facilitates the process of making good decisions when it comes to the research design. A more informed research approach enables the researcher to have a better overall image of the whole process such as data collection (where, what, and how to collect the data), which type of analysis to perform on the data and how to interpret good results. Secondly, a well-defined approach facilitates the choice of methodologies and plan of action that might or might not work for the study. Lastly, Easterby-Smith et al. (2012) also state that having knowledge on different approaches enables the researcher to adapt the approach in case unexpected issues or constraints are encountered during the survey.

Saunders et al., (2019) cite three different research approaches for business students, namely deductive approach, inductive approach, and abductive approach. This study discusses only the first two mentioned above.

3.4.1 Deductive Approach

The deductive research is a Sherlock Holmes like approach where a predefined theory is put to test to be verified using propositions that are based on facts (collected data). There are different ways to conduct a deductive study, but Blaikie (2010) proposes a six steps method:

1. Formulate a set of hypotheses that will be the body of the theory being tested.

2. Have a clear understanding of the necessary requirements for the theory to hold and of the scenarios where the theory does not hold. Then, introduce propositions that can be tested.

3. Continue from this step only if the reasoning and the logic behind the proposed propositions contribute to new ideas.

4. Gather appropriate data and analyse them to test the hypotheses.

5. The results of the analysis will dictate if the proposed theory holds or not. If the tests fail, then the theory must be discarded or changed.

6. In case of positive outcomes from the propositions' tests, the theory is validated.

However, the deduction does not enable flexibility during the process of the research. Since there is a predetermined theory, there is no room for observations outside the scope which limits the study and makes it as an absolute truth. For this reason, it is not an adequate fit for qualitative research (Saunders et al., 2019).

3.4.2 Inductive Approach

Unlike the deductive approach, the inductive perspective's process goes the other way around. Instead of starting with a well-defined theory to be proven or disproven, the inductive approach pursues a clear understanding of the perceptions involved within the research area. In one hand a deductive study stays focused on specific propositions to validate a theory, on the other hand an inductive research gives room to discovering new patterns and new findings that might be hidden in the collected data. Moreover, the inductive approach accepts subjective views from the participants, which in turn enriches the value of a qualitative study (Saunders et al., 2019).

Considering the above, this study made use of the inductive research approach.

3.5 Research Strategy

Strategy can be defined as a plan of action created to accomplish a long-term or overall goal. In the case of a research strategy, the researcher designs a plan to find the answers to the research questions and the objectives that originated the study (Saunders et al., 2019). Considering the context of food labelling and consumers' decision-making process, which is highly subjective, the author chose a qualitative mono method as an exploratory resource to investigate the influence of food labels on people's healthy choices.

As discussed by Adams et al. (2014), quantitative methods can reflect patterns, make predictions, or find averages among the population through numerical data. It is more related to statistics and numbers to test hypothesis and to explain different phenomena. On the other hand, qualitative methods deep dive into thoughts, ideas, and experiences expressed by a person. The qualitative method allows researchers to explore personalized data which open a wide range of possibilities to discover new information and compare them to the literature.

The subject studied in the current research is a contemporary theme often investigated by several authors. However, the angle which the literature usually approaches does not focus on consumers' opinions, thoughts, and ideas about which kind of label could be helpful to stimulate them to make better choices. In the present study, the author aims to explore people's perspective through qualitative methods to fill this relevant gap found in the literature.

In addition, the use of inductive approach is usually associated to qualitative research since it explores the subjectivity in the answers of the interviewees, what can bring to light important information not studied before by other authors (Bansal and Corley, 2011). Furthermore, the participants of the study took part in focus groups conducted and mediated by the researcher. 15 people were divided into 3 groups of 5 each. The focus group was chosen as a research strategy because it gives the author the ability to investigate attitudes, habits, and behaviours of consumers to acknowledge the subject and sensibly describe determined situations in which the participants experienced the effect of food labelling on their choices within a healthy

context. Also, given the circumstances, the focus group was considered the best strategy in terms of safety (due to Covid-19 pandemic), low cost, simple to execute, and great access to collected data which was recorded (Breen, 2006).

3.6 Qualitative Data Primary Collection

The method adopted to collect the primary data of the study was semi structured focus groups. This approach has been used significantly in qualitative research since it has low cost, and it can be managed in less time in comparison to other methods used in business and social research. However, it is argued that even though it is a common and accessible method of data collection, the use of focus group is considered delicate since the questions must be well prepared to get all or most of the answers that match the research questions and the objectives of the study (Saunders et al., 2019; Walle, 2015).

Furthermore, the focus group is a method that maximizes the potential of communication since it motivates people to discuss about a topic bringing personal experiences into the conversation and giving them open space to reflect about it. As a result, the data collected is more likely to be authentic and genuine instead of superficial information since individuals' beliefs, feelings, opinions, and behaviours are observed and noted which builds a descriptive and elaborate material to be analysed (Stewarts and Shamdasani, 2015).

To investigate the experiences of the population sample in the purchase of healthy food items through the influence of food labelling, the researcher followed a script previously designed with a list of 15 questions (See Appendices 2 and 3). Before starting each session, the moderator explained the subject of the study to the interviewees and asked them consent to record the audio used for the current research purposes only.

Regarding the script of questions, the first three inquiries were correlated to the first research objective, the following three questions were linked to the second research objective and so on. In addition, the mediator divided the questions in four categories: engagement, exploration, probing, and exit. The purpose of the first category was to develop understanding about the topic to guarantee more

descriptive responses in the exploration category. Then, in the probing stage the participants had the opportunity to give additional and thorough details about their experiences leading the session to the exit inquiries which showed the participants that the interview was ending but they could express any final ideas or thoughts about the subject.

3.7 Population Sample

As defined by literature, the population sample must be selected systematically to answer the research questions, aims, and objectives of the study. For this reason, choosing the right sample in a qualitative research can define if the study will be successful or not. Thus, there are some steps that must be followed to specify the population that is going to be analysed (Saunders et al., 2019; Walle, 2015).

First, the researcher must define the "sample universe" which is also named "study population". Through inclusion and/or exclusion criteria, the author of the study may establish which group within a population matches the subject of the investigation. In the current research, the sample universe chosen is composed by young adults aged between 20 and 85 years old who have been living in Dublin, middle class, European and non-European, male and female, who are responsible for buying groceries at home. Since this population is quite big and representative, the exclusion criteria was based on age – younger than 20 and older than 35 years old were not selected because of the limited time available to develop the study (Saunders et al., 2019; Robinson, 2014).

Secondly, it is necessary to delineate the sample size which should be relevant in terms of representing the sample universe. Researchers discuss that a reasonable size for a qualitative study should be between 12 and 30 people considering the homogeneity and heterogeneity among them, respectively. Because the present research aims to analyse diverse opinions of consumers on food labelling, the sample size was locked in 15 participants (Saunders et al., 2019; Robinson, 2014).

Thirdly, studies have shown the importance of choosing a strategy to select the most suitable participants to the research and a reliable source to contact them to

guarantee their engagement in the investigation (Saunders et al., 2019; Robinson, 2014).

3.8 Analysing Qualitative Data

The author audio recorded all three sessions conducted with the 15 participants within the study. The interviews lasted between 30 minutes up to one hour and the mediator specified each research objective correlated to the questions before asking them to make the analysis process more efficient.

As argued by Saunders et al. (2019), qualitative data is usually composed by verbal, textual, and visual data. In this study, the verbal data was recorded and transcribed straightaway by the author to guarantee the most accurate information possible. The textual data was composed by notes and observations written by the researcher during the interviews and the visual was captured by the webcams while the participants expressed their opinions, ideas, and thoughts through body and facial expressions.

It is essential to pay attention not only to what the interviewees said but how they did it. Then, during the sessions, the author made sure to observe mindfully all participants' reactions and took notes about which question caused more intense responses and why. A research notebook was used as a complement to help the researcher in the analysis of the data collected through comments, observations, and data taken from the literature. Finally, all information collected through the focus groups was compared to previous articles linked to the same subject and the results were discussed by the author using academic references.

3.9 Ethical Issues

When conducting a research, the researcher must consider and respect The Code of Ethical Conduct which protects the integrity of every participant in a study. All information about the research should be given in advance to the sample population to guarantee that they fully understand the objective of the study and how the research will be managed. In addition, the author read and signed an Ethical Review Application Form which was made available by the National College of Ireland. Also, the researcher had familiarised herself with the General Data Protection Regulation

(GDPR) instituted in 2018 in Europe which preserves the confidentiality and privacy of personal data. Therefore, all security measures were taken to ensure that the methods used for the data collection and analysis of the study were in accordance with ethical guidelines (See Appendix 1).

3.10 Limitations to Research

Due to the Covid-19 pandemic, all the data collection process was carried out using online platforms. This fact might have impacted the results since the participants did not have contact with the selected food labels physically. Thus, the experience of the participants was not full when it comes to their interaction with the products. The products and labels were selected by the author and presented in a specific way that does not reflect the reality in stores, supermarkets, among others. Also, the size of the sample chosen to participate in the study was small – 15 participants. Even though this is not a big group it is still a significant population sample regarding statistical requirements.

Chapter 4 – Research Findings and Discussion

4.1 Introduction

The articles reviewed in chapter 1 and 2 substantially indicate the influence of food labelling on consumers' decision-making process. To expand the knowledge about this subject and fill the gaps found in the literature, the inductive method used by the author provided a profound understanding of people's perception of food labelling and its impact on their health through rich discussions in focus groups. The questions were designed in accordance with each objective proposed by the author to answer the main research question that originated the current study: 'Does food labelling influence consumer choices regarding healthy products?'.

This chapter is focused on comparing the results obtained in the present research with data previously found in the literature.

4.2 Qualitative Research Findings

As stated in a report published by the World Health Nutrition (2018), the use of food labelling around the world is a strategy to improve awareness about the impact of poor eating habits on people's general health and well-being. Overall, analysing the individuals who took place in the research, 80% of the participants within the focus groups showed significantly interest in food labels. The remaining 20% considered food labelling important, even though they do not use it as a criteria to choose a product.

4.2.1 Objective 1 'To investigate whether people search for or are exposed to food labels and the importance of it'

In this part of the research, the author describes the interest of consumers in looking at the label of the products they usually purchase, if they plan what they are going to buy or make decisions during purchases, and if they think that the existence of food labelling is important. Also, possible issues that are related to people's interest in food labelling will be presented and examined.

4.2.1.1 Consumers' interest in food labelling

Each individual within the focus groups was aware about the existence of food labelling, even when they did not show interest in it. Among the 15 participants in the focus group, only 5 revealed often reading the labels of what they buy in grocery shops, 7 explained that they only read food labels when they are on a diet or dietary restriction such as food allergies and pregnancy, and 3 said that they never read it. Among the 15 individuals, only 2 mentioned not making a shopping list when going to purchase groceries.

A few answers given by the interviewees were: "*I only read labels when I want to eat healthier*". "*I just read them if I am on a diet*". "*I never read food labels, because I do not understand the content*". Researchers argue that most of the people who read labels of food items are on a diet or have prior knowledge to interpret it correctly. Notably, as previous considered by the author, there are two main issues that impact on consumers' interest in food labelling: lack of knowledge to understand the content and apply it to their eating routine, and insufficient information about the importance of healthy eating habits (Borgmeier and Westenhoefer, 2009; Nieto et al., 2020).

Furthermore, in the study described in Chapter 2, which was the model used in the current research, the World Health Organization (2017) supports the idea that search is different to exposure. When a person is actively looking for a specific item, it will be more likely to perceive the information on the label, and, consequently, his/her food choices will be influenced by it. On the other hand, if the content of a label catches a person's attention accidentally, the chances to occur misinterpretations is high, what can also affect people's decisions.

4.2.1.2 Food labelling design

The food industry uses diverse strategies to catch the attention of consumers through different elements contained on the labels such as nutrition and health benefits, well-designed packages, and interesting colours, drawings, and formats (Dubois et al., 2020). When questioned about which information on the label gets their attention first, 80% of the interviewees declared that it is the design of the

package. Within this portion, three participants complemented their answers saying that health and nutrition claims such as "gluten free", "less fat", "light", and "organic" also easily get their attention. *"Packaging really gets my attention and if the product is light or less fat, I am definitely going to buy it". "I am tricked by marketing, if I read gluten free, I think it is a good option and I buy it".* One participant mentioned that what he likes the most about packaging design is when the package is transparent because he can see the content, thus, he does not feel disappointed when he opens the product.

The remaining 20% of the respondents stated that they frequently look at the list of ingredients. Two interviewees in this group reinforced that if they see many ingredients or a high quantity of preservatives, they tend to think that it is a bad option. *"I always look at the first ingredient, for example, if I want a tomato sauce and the first ingredient is sugar, I change to an option that the first ingredient is tomato".*

Dubois et al. (2020) indicates that most consumers tend to choose products by the packaging design and the phrases usually written in capital letters to highlight the benefits gained by consuming a specific food item. As stated by research, what strongly influences consumer-making decision process is the visual elements. Using flashy colours such as yellow and red, a message is sent to the brain what creates the desire for something that people did not even know they wanted. In addition, reading big signs on food labels, specially related to health and nutrition, triggered consumers to buy it because it gives the sensation they are purchasing something good for their bodies which also reflects in neurological and psychological reactions that provoke a feeling of pleasure and well-being (Borgmeier and Westenhoefer, 2009; Bucher et al., 2016; Talati et al., 2016).

4.2.1.3 The importance of food labelling from consumers' point of view

At this stage, the author aimed to explore how people understand the importance of food labelling. All participants agreed that it is essential that every pre-packaged food has a label. Some interviewees explained that it is important to know what you are consuming before buying it as well as if the ingredients are compatible with the

information presented at the front part of the label. *'If I am buying an orange juice, I want to make sure that it has orange on the ingredients list'.* In addition, other participants mentioned that having a label indicates that this product is reliable, and its origin is trustworthy. Furthermore, it was outlined the importance of food labels in case people have a special condition such as an allergy or a pregnancy, in which some ingredients must be avoided. To sum up, it was revealed that it is extremely necessary to know what you are eating, and the label must have this information clearly and accessible.

4.2.2 Objective 2 'To examine people's perception and understanding on food labelling

As discussed by the World Health Organization (2017), what people perceive from health and nutrition content on pre-packaged foods can be different from what information is being communicated through the label. Thus, in this section, the researcher aimed to examine the difference between what consumers perceive and what they understand when reading a food label to assess the impact of it on their food choices.

4.2.2.1 Analysis of food labelling content by consumers

100% of the participants within the focus group concurred that all content provided on food labels are important. Even though over 50% of the participants admitted to not fully understand what some words and values mean, they considered indispensable to have all that information available to consumers.

Ten participants emphasized that the use of simple words could facilitate the understanding of the label by the population as well as the warnings used on cigarette labels. *'It should be written something like daily consumption of this product can cause cancer'*. Additionally, almost all interviewees announced that even not understanding what some ingredients are, especially in highly industrialized products, they tend to buy the product anyway.

Also, information such as "vegan", "vegetarian", and "organic" were described as very useful and interesting. This is consistent with the fact that the number of people

who are worried about eating less or no animal products, and natural food without pesticides or hormones has increased over time (Pham et al., 2019; Lusk, 2019).

Some participants complemented saying that it is highly important to know if the package is recyclable or not since people have been more concerned about sustainability and environmental causes. It was discussed why some products sold in Irish groceries stores have this information and some does not, because in the participants' opinion it should be a mandatory information.

4.2.2.2 Consumers' understanding on food labelling

When asked about which information on food labels they usually analyse, all participants who analyse labels declared looking very carefully into the list of ingredients. Five respondents mentioned also looking at the calories, quantity of carbohydrates, the amount of sugar, protein, fat, and sodium per portion presented on the nutrition facts. Within the group of three people who declared never reading the labels, it was revealed that big signs, symbols, and the format of the package are usually what they analyse.

Two participants declared not being convinced by the front of package, so they always look into the back of package to check if the information is reliable and in accordance with they are expecting. '*I do not get tricked by what is written in big letter on the label. I always check the ingredients list and the nutrition facts'*.

Overall, only 4 out of 15 participants showed that they do understand all the information contained on a food label. Although they declared understanding that the ingredients list may contain chemicals, they revealed that they do not know which specific component the name refers to and the damage that can be caused by it. However, they attribute the presence of these chemical components to products that are not healthy.

4.2.2.3 Consumers' perception on food labelling

Considering that what people perceive from a message could be different from what who wrote the message wanted to communicate, the participants were questioned about what type of information they would like to find on a food label. The author's

objective is to explore which kind of information consumers perceive being useful to them. As a result, 80% of the interviewees declared that recipes and tips on which type of food or beverage goes with the product they are purchasing would be very interesting to have on a label.

Moreover, all participants reinforced the necessity to have all the content that is already being used such as nutrition facts, ingredients list, use by date, health and nutrition claims; however, it should be written or presented in a much simpler way than it is.

According to researchers, due to the lack of time people have, reading and interpreting a food label should be an easy and fast task. This is the responsibility of the food industry and regulatory institutions that should facilitate the process and make it efficient to consumers. If the purpose of having a label is to influence society to make better choices that will impact positively on their health, the food labels should answer all the questions people may have about a food item and not give them difficult terms, values, and percentages to wonder what that is about (Grunert and Wills, 2007; Nieto et al., 2020).

4.2.3 Objective 3 'To assess how people use a label's information to their advantage

As defined by the World Health Organization (2017), people can use the information provided on a label to compare food items and decide which one is better for them. However, it is known that using and understanding the label's content can influence people's behaviour in different ways. On one hand, using the label as a guide to make choices can be related to consumers' perception which can lead to a misinterpreted choice. On the other hand, using the knowledge to interpret food label's content can give consumers the ability to choose consciously, although, it does not mean their decision will be healthy. Given that, the researcher aimed to understand in which way people use food labels to help them to make healthier choices.

4.2.3.1 Consumers' perceptions on healthy products

According to half of the participants, a short, clean, and easy to understand ingredients list indicates that a product is healthy. In their point of view, whole grain

ingredients, none or less sugar, no artificial sweeteners, and the absence of chemical components are good characteristics for a healthy item. In other words, the fewer artificial ingredients, and the more natural ingredients, the better.

The other half revealed that claims such as "less fat", "light", "less sugar", "no added sugar", and "gluten free" give them the idea that it is a good and healthy option in relation to ordinary food items. Nevertheless, some respondents said that they are not sure if these characteristics make the product a healthy option or not. *'Once I went to buy a gluten-free pasta; but it was made of maize and rice flour. I questioned myself if it was better than a regular pasta".*

Only one participant mentioned the traffic light system used in food labels around Europe. As stated by him, when the traffic light is all green, he trusts that it is a healthy product. Also, it was mentioned by a female participant that the marketing strategies used by the industry to sell a product as a great option is very convincing to her, especially if the brand has a good reputation in relation to health and nutrition. *'I always believe in big signs and images that say the product is healthy, I am the perfect client who is caught by marketing strategies'.*

As discussed in recent studies, when consumers need to make a choice, they tend to consider more health and nutrition claims written in capital letters at the front part of a package rather than the content on the back part of the package like ingredients list and nutrition facts. This can be explained due to fact that this type of information is usually in evidence, and it does not require time to be analysed since it is objective and easy to understand. Nevertheless, most of the time this content is misunderstood by consumers, and, consequently, people purchase non healthy items without realizing it (de Morais Sato et al., 2019; Nieto et al., 2020; WHO, 2017).

4.2.3.2 Relationship between food label information and consumers' choices

The participants were questioned if they already gave up on buying a product after checking an information on the label that made them feel dissatisfied. Overall, the high amount of fat, sugar, and sodium is a determinant factor to change consumers' idea of purchasing a product. The interviewees explained that cereal and protein bars

are usually products sold as healthy options but if you check their ingredients list you will find high quantities of sugar. *'You think cereal bars are healthy, but when you read the list of ingredients you find out that the first item is sugar'*.

Furthermore, other respondents reported not purchasing a food item if the traffic light is all red. Even though they like the appearance of it, when they look and see all the lights red they tend to give up and look for another product with better characteristics. Also, the size of the ingredients list was mentioned as a strong determinant to choose a good product. *'If the list has more than 8 ingredients, I change my mind immediately.'* As a complement, three people declared not purchasing products that contain hydrogenated fat and ultra-processed food such as ham, sausage, and salami.

4.2.3.3 Labels' liability from consumers' perspective

In terms of liability, most of the participants declared not believing in the information presented on the front part of the package. As stated by them, everything that is written to catch someone's attention such as "healthy", "best choice", and "only natural ingredients" are more likely to be found in products that are not good completely. *'We tend to believe in what is written with greater visibility, but it is always best to check on the ingredients list on the back'.*

On the contrary, most of the interviewees agreed that both the list of ingredients and the use by date are the most reliable information in a label. However, two participants mentioned that they are not sure if the industry can hide ingredients from the label to make their products look healthier. Additionally, one participant revealed that only the appearance of the product makes him want to or not purchase it. *'If the product looks good, I take it. If it does not, I do not buy it'.*

4.2.4 Objective 4 'To analyse the impact of food labelling on healthier choices'

According to the World Health Organization (2018), food labelling is an important tool to help people improve their knowledge about health and nutrition, consequently, consumers can make healthier choices and have positive impacts on their health and well-being. Although, the author of the current research has

previously identified that there are few studies that investigated the opinion of consumers in relation to this subject. Then, it was decided to explore directly and in a practical way how people analyse food labels to identify the healthiest option.

4.2.4.1 Link between food labels content and healthy choices

All the participants were asked to analyse and compare the list of ingredients, the nutrition facts, and the traffic light system of two different industrialized products. The objective was to identify the healthiest option. The three groups were confused about the list of ingredients because they did not know the meaning of all the words described on it. This confirms the theory supported by Nieto et al. (2020) which discusses that, regardless of literacy, most of the society do not fully understand the meaning of words that often appear in the ingredients list. Because of it, all participants decided to choose the product that has more known ingredients than preservatives and other chemical components on the label.

Following that, the three groups examined the nutrition information. The author put two different formats – one in text format and another in table format - on purpose to prove a theory. As expected, all participants agreed that nutrition facts should be presented in table format because it is easier to see all the information at once. When questioned about the content, the first group focused on the amount of fat, the second on the quantity of sugar, and the last group compared the number of calories, sugar, fat, and sodium between the two labels. All interviewees chose the product which had the least amount of the nutrients they were looking at.

Finally, the participants analysed the traffic light system of both products. One had three green lights and one amber while the other had three red lights and one green. As a result, 100% of the respondents chose the first option since it had more green lights which indicates that it is a good option.

It is important to highlight that both products chosen by the author were not healthy options, however, one was made of real meat while the other was an ultra-processed food. Also, the researcher aimed to prove what studies have argued that when people look only at one information such as the traffic light system, it can induce consumers to think the product is great because it is almost everything green,

however, when they look at the ingredients, they do not understand most of the words used, which indicates that there are unhealthy ingredients within that product (Trudel et al., 2015).

4.2.5 Objective 5 'To evaluate the benefits that motivate people to choose healthy products'

In this section, the researcher aimed to inspect a subject that is hardly found in the literature which is consumers' point of view in relation to the benefits caused by the consumption of healthy products in their lifestyle.

4.2.5.1 The impact of healthy choices on consumer's lifestyle

Ten participants concurred that eating healthily is a way of self-care and it can influence a chain reaction that will lead people to take care of themselves in other areas of their lives, such as physical activity and mental health. The other five individuals revealed that in their opinion it is the other way around. The decision of starting an exercise routine will influence on better eating habits. Overall, all respondents declared that a healthy diet provides more energy for everyday life and impacts directly on promoting a better quality of life.

As argued by researchers, it is scientifically proven that the quality of the diet directly influences people's performance in their daily activities. It affects people's mood and energy to deal with life situations, the functioning of the brain, and emotions. For this reason, it is highly important to show society that simple changes of diet habits can make a big difference on their lifestyle (Hodgkins et al., 2015; WHO, 2018).

4.2.5.2 The relationship between food labelling and dietary habits

The last question asked to all participants was about the importance of easy-to-understand food labels to help the construction of healthy eating habits for the society. All interviewees explained that if you understand the label you will be more likely to make better choices. *'We are usually caught by marketing strategies, so, if we are sure that we can trust and understand the information on the label, we will definitely make healthier choices.'*

Additionally, the participants emphasized that if people have previous knowledge on how to interpret food labels, they will be able to actively make good choices or, at least, understand everything that is written on a label. *'If you do not know the meaning of the word, sometimes you just buy the product because you like the taste. But, if you know that all those weird words mean sugar or fat, you will change your mind quickly'.* As well presented by the respondents, knowledge is freedom, so you can choose consciously and knowing what is feeding your body and mind.

However, some participants pointed out that only having an easy-to-interpret label is not enough. People need to be educated about it to build their own knowledge to be able to critically analyse all the information provided by food labels.

Chapter 5 – Conclusions and Recommendations

5.1 Conclusions

The present research investigated consumers' understanding and perceptions of food labelling in relation to healthy choices through a qualitative research strategy. It was also studied the influence of choice architecture strategies on people's decisions and its implications on individuals' health and well-being.

Firstly, the author concluded that, according to consumers' point of view, food labelling is essential, whether they understand it or not. It is an element of reliability that tells society that is safe to buy specific products. However, most people do not search for food labels, they are usually exposed to them which often induces consumers to make unhealthy choices.

Secondly, the use of choice architecture strategies on food packaging is highly efficient to get consumers attention and to persuade them to purchase. Health and nutrition claims have a significant impact on people's choices, especially when they do not know how to interpret other information on food labels. The design of the package is also an efficient strategy to influence individuals' decisions.

Finally, the use of difficult words, symbols, numbers, and terms in food labels negatively affects consumers' food choices. The lack of knowledge influences people to buy what they like or want rather than products with better quality. Thus, consumers should be stimulated to read the ingredients list and the nutritional information, considering that both are the most important elements for a basic understanding of whether a product is healthy or not.

5.1.1 Education of food labelling and its impact on people's health

The present study revealed that if consumers had previous knowledge of nutrition and food labelling, they would tend to make healthier choices. Notably, the author identified the necessity of investing on education of food labelling since most consumers have never learned about it.

As a suggestion, the education system could explore this topic at intermediate and secondary schools while individuals are forming their opinions, ideas, and thoughts

on diverse subjects. Then, when they become adults, it would be less likely to be misled by marketing or choice architecture strategies used by the food and beverage industry.

In addition, public health institutions should invest in projects to improve awareness of food labelling and its impact on people's health. Marketing advertisements, folders, and open talks conducted by professionals could be some of the strategies to target adults and elderly about this topic.

The society must understand the positive impacts of a healthy diet as well as the negative effects of unhealthy eating habits. Knowledge is freedom, therefore, by understanding these aspects, people can make more conscious food choices and understand the consequences of them for their health in the short, medium, and long term.

5.2 Recommendations

5.2.1 Recommendations for Future Research

Analysing the limitations found in the present study, the author identified the following possible future works:

- To study whether the inclusion of nutrition and food labelling as a school module can impact on children and teenagers' decisions in relation to healthy choices.
- To propose labels designs with clear, concise, and easy-to-understand content to assess its impact on consumers food choices.
- To implement choice architecture strategies focused on healthy products in supermarkets, grocery shops, and convenience stores to evaluate their impact on people's decisions.

In light of the above, there are plenty of future work to be done within this topic that could be explored to enriches this academic research field.

5.2.2 Recommendations for Practitioners

According to the data gathered in the current study, consumers are highly influenced by choice architecture strategies used by the food industry. The use of big signs,

colourful or fancy packages, and health and nutrition claims usually play a relevant role in consumers' decisions. Moreover, the way supermarkets, grocery shops, and convenience stores organize their environment persuades people to make food choices subconsciously.

Therefore, practitioners should use choice architecture strategies focused on healthy products to convince consumers to purchase more fresh, natural, and organic food rather than industrialized products. Additionally, the industry should work together with the World Health Organization to produce a standard food label design with clear, concise, and easy-to-understand content. The idea is that when consumers look at the product, they will know straightaway if it is a healthy or unhealthy option.

References

Adams, J., Khan, H. T. A. and Raeside, R. (2014) *Research methods for business and social science students*. 2nd edn. Sage. Available at: https://eds.a.ebscohost.com/eds/ebookviewer/ebook/ZTAyMG13d19fNzg0ODgyX19BTg2?sid=fd6b4e1b-7a1e-4a70-bbf8-f410c7362900@sdc-v-sessmgr01&vid=11&hid=/&format=EB [Accessed 11 June 2021].

Aday, M. S., & Yener, U. (2014). 'Understanding the buying behaviour of young consumers regarding packaging attributes and labels', *International Journal of Consumer Studies*, *38*(4), pp. 385-393. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/ijcs.12105 [Accessed 23 July 2021].

Almosa, Y., Parkinson, J., & Rundle-Thiele, S. (2017). 'Littering reduction: A systematic review of research 1995–2015', *Social Marketing Quarterly*, *23*(3), pp. 203-222. https://doi.org/10.1177/1524500417697654 [Accessed 14 May 2021].

Ares, G., Aschemann-Witzel, J. A., Curutchet, M. R., Antunez, L., Moratorio, X., Bove, I. (2018) 'A citizen perspective on nutritional warnings as front-of-pack labels: insights for the design of accompanying policy measures' *Public Health Nutr.*, 21(18), pp. 3450–3461. https://doi.org/10.1017/S1368980018002045 [Accessed 07 May 2021].

Bansal, P., & Corley, K. (2011). 'The coming of age for qualitative research: Embracing the diversity of qualitative methods', *Academy of Management Journal*, 54(2), pp. 233-237. Available at: https://journals.aom.org/doi/full/10.5465/AMJ.2011.60262792 [Accessed 13 June 2021].

BBC (2019) *Why US lags behind on graphic cigarette warning*. Available at: https://www.bbc.com/news/world-us-canada-49374996 [Accessed 9 May 2021].

Biswas, D., Szocs, C., Chacko, R., & Wansink, B. (2017). 'Shining light on atmospherics: how ambient light influences food choices', *Journal of Marketing Research*, *54*(1), pp. 111-123. Available at: https://journals.sagepub.com/doi/abs/10.1509/jmr.14.0115 [Accessed 17 May 2021].

Blaikie, K. (2010) *Business Statistics.* 6th edn. Wiley.

Borgmeier, I., & Westenhoefer, J. (2009). 'Impact of different food label formats on healthiness evaluation and food choice of consumers: a randomized-controlled study', *BMC public health*, *9*(1), pp. 1-12. Available at: https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-9-184 [Accessed 19 May 2021].

Brambila-Macias, J., Shankar, B., Capacci, S., Mazzocchi, M., Perez-Cueto, F. J., Verbeke, W., & Traill, W. B. (2011) 'Policy interventions to promote healthy eating: a review of what works, what does not, and what is promising', *Food and nutrition bulletin*, *32*(4), pp. 365-375. https://doi.org/10.1177/156482651103200408 [Accessed 14 May 2021].

Breen, R. L. (2006). 'A practical guide to focus-group research', *Journal of geography in higher education*, *30*(3), pp. 463-475. Available at: https://www.tandfonline.com/doi/full/10.1080/03098260600927575 [Accessed 09 June 2021].

Broers, V. J., De Breucker, C., Van den Broucke, S., & Luminet, O. (2017). 'A systematic review and meta-analysis of the effectiveness of nudging to increase fruit and vegetable choice', *The European Journal of Public Health*, *27*(5), 912-920. https://doi.org/10.1093/eurpub/ckx085 [Accessed 14 May 2021].

Bucher, T., Collins, C., Rollo, M. E., McCaffrey, T. A., De Vlieger, N., Van der Bend, D., & Perez-Cueto, F. J. (2016) 'Nudging consumers towards healthier choices: a systematic review of positional influences on food choice', *British Journal of Nutrition*, *115*(12), pp. 2252-2263. Available at: https://www.cambridge.org/core/journals/british-journal-of-nutrition/article/nudging-consumers-towards-healthier-choices-a-systematic-review-of-positional-influences-on-food-choice/3D7DE450C7FEB6844E79D773C92A8B14 [Accessed 12 May 2021].

Cabrera, M., Machín, L., Arrúa, A., Antúnez, L., Curutchet, M. R., Giménez, A., & Ares, G. (2017). 'Nutrition warnings as front-of-pack labels: influence of design features on healthfulness perception and attentional capture', *Public health nutrition*, *20*(18), pp. 3360-3371. Available at: https://www.cambridge.org/core/journals/public-

health-nutrition/article/nutrition-warnings-as-frontofpack-labels-influence-of-design-features-on-healthfulness-perception-and-attentional-capture/1D45359C83C891BA20F3565083CEA363 [Accessed 10 May 2021].

Cameron, A. J., Charlton, E., Ngan, W. W., & Sacks, G. (2016). 'A systematic review of the effectiveness of supermarket-based interventions involving product, promotion, or place on the healthiness of consumer purchases', *Current Nutrition Reports*, *5*(3), pp. 129-138. Available at: https://link.springer.com/article/10.1007/s13668-016-0172-8 [Accessed 16 May 2021].

Cecchini, M., & Warin, L. (2016). 'Impact of food labelling systems on food choices and eating behaviours: a systematic review and meta-analysis of randomized studies', *Obesity reviews*, *17*(3), pp. 201 - 210. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/obr.12364 [Accessed 10 July 2021].

Charlton, E. L., Kähkönen, L. A., Sacks, G., & Cameron, A. J. (2015). 'Supermarkets and unhealthy food marketing: an international comparison of the content of supermarket catalogues/circulars', *Preventive medicine*, *81*, pp. 168-173. https://doi.org/10.1016/j.ypmed.2015.08.023 [Accessed 13 May 2021].

Corvalán Aguilar, C., Reyes, M., Garmendia, M. L., & Uauy Dagach-Imbarack, R. (2019). Structural responses to the obesity and non-communicable diseases epidemic: Update on the Chilean law of food labelling and advertising. *Obes. Rev.,* 20(3), pp. 367-374. https://doi.org/10.1111/obr.12802 [Accessed 21 July 2021].

de Morais Sato, P., Mais, L. A., Khandpur, N., Ulian, M. D., Bortoletto Martins, A. P., Garcia, M. T., & Scagliusi, F. B. (2019) 'Consumers' opinions on warning labels on food packages: A qualitative study in Brazil'. *PLoS One*, *14*(6), pp. 1-17 https://doi.org/10.1371/journal.pone.0218813 [Accessed 07 May 2021].

Dimitri, C., & Rogus, S. (2014). 'Food choices, food security, and food policy', *Journal of International Affairs*, pp. 19-31. Available at: https://www.jstor.org/stable/24461733 [Accessed 17 May 2021].

Domke, F. (2018). 'Vegetarian and Vegan Products-Labelling and Definitions', *European Food and Feed Law Review*, *13*(2), pp. 102-107. Available at: https://www.jstor.org/stable/9002131 [Accessed 17 July 2021].

Dubois, P., Albuquerque, P., Allais, O., Bonnet, C., Bertail, P., Combris, P., & Chandon, P. (2021). 'Effects of front-of-pack labels on the nutritional quality of supermarket food purchases: evidence from a large-scale randomized controlled trial', *Journal of the Academy of Marketing Science*, *49*(1), pp. 119-138. Available at: https://link.springer.com/article/10.1007/s11747-020-00723-5?marketingsource=MBA470MMasterTube [Accessed 22 May 2021].

Ducrot, P., Julia, C., Méjean, C, Kesse-guyot, E., Touvier, M., Fezeu, L. K., Hercberg, S., & Peneau, S. (2015) 'Impact of different front-of-pack nutrition labels on consumer purchasing intentions', *American Journal of Preventive Medicine,* 50(5), pp. 627-636. Available at: https://www.ajpmonline.org/article/S0749-3797(15)00724-2/fulltext [Accessed 19 July 2021].

Dumoitier, A., Abbo, V., Neuhofer, Z. T., & McFadden, B. R. (2019). 'A review of nutrition labeling and food choice in the United States', *Obesity science & practice*, *5*(6), pp. 581-591. Available at: https://onlinelibrary.wiley.com/doi/full/10.1002/osp4.374 [Accessed 12 May 2021].

Easterby-Smith, M., Thorpe, R., Jackson, P., Lowe, A. (2012) *Management Research.* 4th edn. Sage.

European Comission (2021) *Labeling and nutrition.* Available at: https://ec.europa.eu/food/safety/labelling_nutrition_en#:~:text=In%20the%20European%20Union%2C%20the,choice%20while%20purchasing%20their%20foodstuffs [Accessed 05 May 2021].

Emrich, T. E., Qi, Y., Lou, W. Y. and L'Abbe, M. R. (2017) 'Traffic-light labels could reduce population intakes of calories, total fat, saturated fat, and sodium', PLoS ONE, 12(2), pp. 1–10. doi: 10.1371/journal.pone.0171188 [Accessed 06 May 2021].

Ene, C. (2008). 'Consumer's food choices: Trends and challenges', *Buletinul, LX*, *2*, pp. 77-82. Available at: http://upg-bulletin-se.ro/old_site/archive/2008-2/9.%20Ene.pdf [Accessed 18 May 2021].

Food and Agriculture Organization of the United Nations – FAO (2021) *Food labelling.* Available at: http://www.fao.org/ag/humannutrition/foodlabel/76333/en/ [Accessed 05 May 2021].

Food and Agriculture Organization of the United Nations & World Health Organization (2018) *Codex Alimentarius – General Standard for the Labelling of Prepackaged Foods.* Available at: http://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FStandards%252FCXS%2B1-1985%252FCXS_001e.pdf [Accessed 05 May 2021].

GDPR.EU (2021) *Complete guide to GDPR compliance*. Available at: https://gdpr.eu/ [Accessed 23 June 2021].

Grebitus, C., Peschel, A. O., & Hughner, R. S. (2018). 'Voluntary food labeling: The additive effect of "free from" labels and region of origin', *Agribusiness*, *34*(4), pp. 714-727. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1002/agr.21558 [Accessed 18 July 2021].

Grunert, K. G., & Wills, J. M. (2007) 'A review of European research on consumer response to nutrition information on food labels', *Journal of public health*, *15*(5), pp. 385-399. Available at: https://link.springer.com/article/10.1007/s10389-007-0101-9 [Accessed 06 May 2021].

Gould, B. W. (2002). 'Household composition and food expenditures in China', *Agribusiness: An International Journal*, *18*(3), pp. 387-407. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1002/agr.10020 [Accessed 17 May 2021].

Grunert, K. G., & Wills, J. M. (2008) *Pan-European consumer research on in-store behaviour, understanding and use of nutrition information on food labels, and nutrition knowledge.* Available at: EUFIC% 20pan-European% 20results-full% 20presentation_FINAL. pdf. [Accessed 06 May 2021].

Hartmann-Boyce, J., Bianchi, F., Piernas, C., Riches, S. P., Frie, K., Nourse, R., & Jebb, S. A. (2018) 'Grocery store interventions to change food purchasing behaviors: a systematic review of randomized controlled trials', *The American journal of clinical nutrition*, *107*(6), pp. 1004-1016. Available at:

https://academic.oup.com/ajcn/article/107/6/1004/5032657?login=true [Accessed 15 May 2021].

Harvard Business Review (2008) *Nudge Your Customers Toward Better Choices.* Available at: https://hbr.org/2008/12/nudge-your-customers-toward-better-choices# [Accessed 07 May 2021].

Haydam, N. E. and Steenkamp, P. (2020) 'A Methodological Blueprint for Social Sciences Research – The Social Sciences Research Methodology Framework' *European Integration -Realities and Perspectives Proceedings,* 15(1). Available at: https://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=3&sid=28599ab0-62dd-4b62-a4f5-f50514a7c85b%40sessionmgr102 [Accessed 12 June 2021].

Heron, J. (1996) *Co-operative Inquiry: Research into the Human Condition.* Sage.

Hertwig, R., & Grüne-Yanoff, T. (2017). 'Nudging and boosting: Steering or empowering good decisions', *Perspectives on Psychological Science*, *12*(6), pp. 973-986. https://doi.org/10.1177/1745691617702496 [Accessed 11 May 2021].

Hodgkins, C. E., Raats, M. M., Fife-Schaw, C., Peacock, M., Gröppel-Klein, A., Koenigstorfer, J., & Grunert, K. G. (2015). 'Guiding healthier food choice: systematic comparison of four front-of-pack labelling systems and their effect on judgements of product healthiness', *British Journal of Nutrition*, *113*(10), pp. 1652-1663. Available at: https://www.cambridge.org/core/journals/british-journal-of-nutrition/article/guiding-healthier-food-choice-systematic-comparison-of-four-frontofpack-labelling-systems-and-their-effect-on-judgements-of-product-healthiness/6B1CFB5D61A07DE628C4262D4864D9A3 [Accessed 21 July 2021].

Houghtaling, B., Serrano, E. L., Kraak, V. I., Harden, S. M., Davis, G. C., & Misyak, S. A. (2019). 'A systematic review of factors that influence food store owner and manager decision making and ability or willingness to use choice architecture and marketing mix strategies to encourage healthy consumer purchases in the United States, 2005–2017'. *International Journal of Behavioral Nutrition and Physical Activity*, 16(1), pp. 1 - 14. https://doi.org/10.1186/s12966-019-0767-8 [Accessed 10 May 2021].

Ikonen, I., Sotgiu, F., Aydinli, A. and Verlegh, P. W. J. (2020) 'Consumer effects of front-of-package nutrition labelling: an interdisciplinary meta-analysis', *Journal of the*

Academy of Marketing Science, 48(3), pp. 360 – 383, Springer. Available at: https://link.springer.com/article/10.1007/s11747-019-00663-9 [Accessed 06 May 2021].

Johnson, E. J., Shu, S. B., Dellaert, B. G., Fox, C., Goldstein, D. G., Häubl, G., & Weber, E. U. (2012) 'Beyond nudges: Tools of a choice architecture', *Marketing Letters*, *23*(2), pp. 487-504. Available at: https://link.springer.com/article/10.1007/s11002-012-9186-1 [Accessed 11 May 2021].

Julia, C. & Hercberg, S. (2017) 'Development of a new front-of-pack nutrition label in France: the five-colour Nutri-Score', *Public Health Panorama,* 3(4), pp. 712-725. Available at: https://www.euro.who.int/__data/assets/pdf_file/0008/357308/PHP-1122-NutriScore-eng.pdf [Accessed 06 May 2021].

Julia, C., Péneau, S., Buscail, C., Gonzalez, R., Touvier, M., Hercberg, S., & Kesse-Guyot, E. (2017). 'Perception of different formats of front-of-pack nutrition labels according to sociodemographic, lifestyle and dietary factors in a French population: Cross-sectional study among the NutriNet-Santé cohort participants', *BMJ open*, *7*(6), pp. 1-11. Available at: https://bmjopen.bmj.com/content/7/6/e016108.abstract [Accessed 06 May 2021].

J. Van Buul, V., & Brouns, F. J. (2015). 'Nutrition and health claims as marketing tools', *Critical reviews in food science and nutrition*, *55*(11), pp. 1552-1560. https://doi.org/10.1080/10408398.2012.754738 [Accessed 21 July 2021].

Kanter, R., Vanderlee, L., & Vandevijvere, S. (2018). 'Front-of-package nutrition labelling policy: global progress and future directions', *Public Health Nutrition*, *21*(8), pp. 1399-1408. Available at: https://www.cambridge.org/core/journals/public-health-nutrition/article/frontofpackage-nutrition-labelling-policy-global-progress-and-future-directions/E24D6BBF326D3D78BFF28779457F5D6D [Accessed 22 July 2021].

Khandpur, N., Swinburn, B., Monteiro, C. A. (2018) 'Nutrient-based warning labels may help in the pursuit of healthy diet', *Obesity*, 26(11), pp. 1670 - 1671. https://doi.org/10.1002/oby.22318 [Accessed 14 May 2021].

Kraak, V. I., Englund, T., Misyak, S., & Serrano, E. L. (2017). 'A novel marketing mix and choice architecture framework to nudge restaurant customers toward healthy food environments to reduce obesity in the United States', *Obesity Reviews*, *18*(8), pp. 852-868. **https://doi.org/10.1111/obr.12553** [Accessed 14 May 2021].

Kumar, N., & Kapoor, S. (2017). 'Do labels influence purchase decisions of food products? Study of young consumers of an emerging market', *British Food Journal*, 119(2), pp.218 – 229. Available at: https://www.emerald.com/insight/content/doi/10.1108/BFJ-06-2016-0249/full/html [Accessed 23 July 2021].

Lahti-Koski, M., Helakorpi, S., Olli, M., Vartiainen, E., & Puska, P. (2012). 'Awareness and use of the Heart Symbol by Finnish consumers' *Public health nutrition*, 15(3), pp. 476 - 482. doi: 10.1017/S136898001100187X [Accessed 06 May 2021].

Landais, L. L., Damman, O. C., Schoonmade, L. J., Timmermans, D. R., Verhagen, E. A., & Jelsma, J. G. (2020). 'Choice architecture interventions to change physical activity and sedentary behavior: a systematic review of effects on intention, behavior and health outcomes during and after intervention'. *International Journal of Behavioral Nutrition and Physical Activity*, 17, pp. 1 - 37. https://doi.org/10.1186/s12966-020-00942-7 [Accessed 12 May 2021].

Lin, Y., Osman, M., Harris, A. J., & Read, D. (2018). 'Underlying wishes and nudged choices', Journal *of Experimental Psychology: Applied*, *24*(4), pp. 459. https://doi.org/10.1037/xap0000183 [Accessed 13 May 2021].

Loewenstein, G., & Chater, N. (2017). 'Putting nudges in perspective', *Behavioural Public Policy*, *1*(1), pp. 26-53. Available at: https://www.cambridge.org/core/journals/behavioural-public-policy/article/abs/putting-nudges-in perspective/94B40BD8E9CAF182BF709C8BBE0B0C3B [Accessed 14 May 2021].

Lusk, J. L. (2019). Consumer beliefs about healthy foods and diets. *PLoS One*, *14*(10), pp. 1 – 15. Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0223098 [Accessed 18 July 2021].

Marcano-Olivier, M., Pearson, R., Ruparell, A., Horne, P. J., Viktor, S., & Erjavec, M. (2019). 'A low-cost Behavioural Nudge and choice architecture intervention targeting school lunches increases children's consumption of fruit: a cluster randomised trial'. *International Journal of Behavioral Nutrition and Physical Activity*, 16(1), pp. 1 - 9. https://doi.org/10.1186/s12966-019-0773-x [Accessed 10 May 2021].

McFerran, B., Dahl, D. W., Fitzsimons, G. J., & Morales, A. C. (2010). 'I'll have what she's having: Effects of social influence and body type on the food choices of others', *Journal of Consumer Research*, *36*(6), pp. 915-929. Available at: https://academic.oup.com/jcr/article/36/6/915/1862922?login=true [Accessed 17 May 2021].

Meder, B., Fleischhut, N., & Osman, M. (2018). 'Beyond the confines of choice architecture: a critical analysis', *Journal of Economic Psychology*, 68, pp. 36-44. Available at: https://www.sciencedirect.com/science/article/pii/S0167487018300552 [Accessed 12 May 2021].

Meisinger, C., Ezzati, M., & Di Cesare, M. (2016). 'Trends in adult body-mass index in 200 countries from 1975 to 2014: a pooled analysis of 1698 population-based measurement studies with 19.2 million participants', *Lancet*, 387, pp. 1377-1396. Available at: https://opus.bibliothek.uni-augsburg.de/opus4/frontdoor/deliver/index/docId/84624/file/1-s2.0-S014067361630054X-main.pdf [Accessed 20 July 2021].

Miller, L. M. S., & Cassady, D. L. (2015). 'The effects of nutrition knowledge on food label use. A review of the literature', *Appetite*, *92*, pp. 207-216. Available at: https://www.sciencedirect.com/science/article/pii/S0195666315002743 [Accessed 18 May 2021].

Nieto, C., Castillo, A., Alcalde-Rabanal, J., Mena, C., Carriedo, A., Barquera, S. (2020) 'Perception of the use and understanding of nutrition labels among different socioeconomic groups in Mexico: a qualitative study' *Salud Publica de Mexico*, 62(3), pp. 274-283. https://doi.org/10.21149/10793 [Accessed 11 June 2020].

Onozaka, Y., Melbye, E. L., Skuland, A. V., & Hansen, H. (2014). 'Consumer intentions to buy front-of-pack nutrition labeled food products: The moderating effects of personality differences' *Journal of Food Products Marketing*, *20*(4), pp. 390 - 407. doi: 10.1080/10454446.2013.807409 [Accessed 06 May 2021].

Pham, T. H., Nguyen, T. N., Phan, T. T. H., & Nguyen, N. T. (2019). 'Evaluating the purchase behaviour of organic food by young consumers in an emerging market economy', *Journal of Strategic Marketing*, *27*(6), pp. 540-556. Available at: https://www.tandfonline.com/doi/abs/10.1080/0965254X.2018.1447984 [Accessed 23 July 2021].

Pechey, R., Hollands, G. J., Carter, P., & Marteau, T. M. (2020). 'Altering the availability of products within physical micro-environments: A conceptual framework', *BMC Public Health*, *20*(1), pp. 1-14. Available at: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-09052-2 [Accessed 19 July 2021].

Pettigrew, S. (2016). 'Pleasure: an under-utilised 'P'in social marketing for healthy eating', *Appetite*, *104*, pp. 60-69. Available at: https://www.sciencedirect.com/science/article/pii/S0195666315300556 [Accessed 17 May 2021].

Pinard, C. A., Shanks, C. B., Harden, S. M., & Yaroch, A. L. (2016). 'An integrative literature review of small food store research across urban and rural communities in the US', *Preventive medicine reports*, *3*, pp. 324-332. https://doi.org/10.1016/j.pmedr.2016.03.008 [Accessed 15 May 2021].

Prescott, J., Young, O., O'neill, L., Yau, N. J. N., & Stevens, R. (2002). 'Motives for food choice: a comparison of consumers from Japan, Taiwan, Malaysia and New Zealand', *Food quality and preference*, *13*(7-8), pp. 489-495. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0950329302000101 [Accessed 18 May 2021].

Roberts, C. J. (2008). 'The effects of stress on food choice, mood and bodyweight in healthy women.' *Nutrition Bulletin*, *33*(1), pp. 33-39. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-3010.2007.00666.x [Accessed 18 May 2021].

Robinson, O. C. (2014) 'Sampling in interview-based qualitative research: A theoretical and practical guide' *Qualitative research in psychology,* 11(1), pp. 25 – 41. Available at: https://eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?vid=3&sid=e5ce0452-df13-4ec8-a5dd-c18daf80a6f0%40sessionmgr4007 [Accessed 12 June 2021].

Rose, D., Bodor, J. N., Hutchinson, P. L., & Swalm, C. M. (2010). 'The importance of a multi-dimensional approach for studying the links between food access and consumption', *The Journal of nutrition*, *140*(6), pp. 1170-1174. Available at: https://academic.oup.com/jn/article/140/6/1170/4600381?login=true [Accessed 17 May 2021].

Rozin, P. (2006). 'The integration of biological, social, cultural and psychological influences on food choice', *Frontiers in nutritional science*, *3*, 19. Available at: https://books.google.ie/books?hl=pt-BR&lr=&id=DJPHxPg2oJQC&oi=fnd&pg=PA19&dq=Rozin+P+(2006).+The+integration+of+biological,+social,+cultural+and+psycological+influences+on+food+choice.+In:+Shepherd+R,+Raats+M,+editors.+The+psychology+of+food+choice,+Vol.+3.+Wallingford+(Oxon):+Centre+for+Agriculture+and+Bioscience+International+(CA&ots=EYaCUH54Kz&sig=cyMkHggskWwPo0Fqup5OJnN_290&redir_esc=y#v=onepage&q&f=false [Accessed 18 May 2021].

Sacks, G., Rayner, M., & Swinburn, B. (2009). 'Impact of front-of-pack 'traffic-light'nutrition labelling on consumer food purchases in the UK', *Health promotion international*, *24*(4), pp. 344-352. Available at: https://academic.oup.com/heapro/article/24/4/344/575241?login=true [Accessed 20 July 2021].

Saunders, M. N. K., Lewis, P. and Thornhill, A. (2019) *Research methods for business students*. 8th edn. Pearson Education Limited. Available at: https://r3.vlereader.com/Reader?ean=9781292208794# [Accessed 10 June 2021].

Simeone, M., & Scarpato, D. (2020) 'Sustainable consumption: How does social media affect food choices?', *Journal of Cleaner Production*, *277*, pp. 124036. https://doi.org/10.1016/j.jclepro.2020.124036 [Accessed 15 May 2021].

Story, M., Kaphingst, K. M., Robinson-O'Brien, R., & Glanz, K. (2008). 'Creating healthy food and eating environments: policy and environmental approaches', *Annu. Rev. Public Health*, *29*, pp. 253-272. Available at: https://www.annualreviews.org/doi/abs/10.1146/annurev.publhealth.29.020907.090926 [Accessed 15 May 2021].

Talati, Z., Pettigrew, S., Dixon, H., Neal, B., Ball, K., & Hughes, C. (2016). 'Do health claims and front-of-pack labels lead to a positivity bias in unhealthy foods?', *Nutrients*, *8*(12), pp. 1-18. Available at: https://www.mdpi.com/2072-6643/8/12/787 [Accessed 10 May 2021].

Thomas, M. D. (2019) 'Reapplying behavioral symmetry: public choice and choice architecture'. *Public Choice*, 180(1), pp. 11 - 25. https://doi.org/10.1007/s11127-018-0537-1 [Accessed 10 May 2021].

Thorndike, A. N. (2020) 'Healthy choice architecture in the supermarket: Does it work?'. *Social Science & Medicine,* 266, pp. 113459. Available at: https://www.sciencedirect.com/science/article/pii/S027795362030678X [Accessed 11 May 2021].

Thorndike, A. N., Bright, O. J. M., Dimond, M. A., Fishman, R., & Levy, D. E. (2017). 'Choice architecture to promote fruit and vegetable purchases by families participating in the Special Supplemental Program for Women, Infants, and Children (WIC): randomized corner store pilot study', *Public health nutrition*, *20*(7), pp. 1297-1305. Available at: https://www.cambridge.org/core/journals/public-health-nutrition/article/choice-architecture-to-promote-fruit-and-vegetable-purchases-by-families-participating-in-the-special-supplemental-program-for-women-infants-and-children-wic-randomized-corner-store-pilot-study/1366BA6920491D51759857F49739FCA4 [Accessed 12 May 2021].

Thornton, L. E., Cameron, A. J., McNaughton, S. A., Worsley, A., & Crawford, D. A. (2012) 'The availability of snack food displays that may trigger impulse purchases in Melbourne supermarkets', *BMC public health*, *12*(1), pp. 1-8. https://doi.org/10.1186/1471-2458-12-194 [Accessed 11 May 2021].

Thow, A. M., Jan, S., Leeder, S., & Swinburn, B. (2010). 'The effect of fiscal policy on diet, obesity and chronic disease: a systematic review', *Bulletin of the World Health Organization*, *88*, pp. 609-614. Available at: https://www.scielosp.org/article/bwho/2010.v88n8/609-614/ [Accessed 16 May 2021].

Trudel, R., Murray, K. B., Kim, S., & Chen, S. (2015). 'The impact of traffic light color-coding on food health perceptions and choice', *Journal of Experimental Psychology: Applied*, *21*(3), pp. 255-275. Available at: https://psycnet.apa.org/buy/2015-28576-001 [Accessed 18 May 2021].

U.S. Food & Drug Administration - FDA (2021) *Food Labeling & Nutrition.* Available at: https://www.fda.gov/food/food-labeling-nutrition [Accessed 05 May 2021].

Vermeer, W. M., Steenhuis, I. H., & Seidell, J. C. (2009). 'From the point-of-purchase perspective: a qualitative study of the feasibility of interventions aimed at portion-size', *Health policy*, *90*(1), pp. 73-80. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0168851008001759 [Accessed 16 May 2021].

Vila-Lopez, N., & Kuster-Boluda, I. (2016). 'Adolescents' food packaging perceptions. Does gender matter when weight control and health motivations are considered?', *Food quality and preference*, *52*, pp. 179-187. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0950329316300842 [Accessed 17 May 2021].

Walle, A. H. (2015) *Qualitative Research in Business: A Practical Overview.* Cambridge Scholars Publishing. Available at: https://books.google.ie/books?hl=pt-BR&lr=&id=2mYHCgAAQBAJ&oi=fnd&pg=PR7&dq=Walle,+A.+H.+(2015)+Qualitative+Research+in+Business:+A+Practical+Overview.+&ots=-w95gTTYHq&sig=MCeV46NKZUgcpRqj4_QxtGFOMpw&redir_esc=y#v=onepage&q=

Walle%2C%20A.%20H.%20(2015)%20Qualitative%20Research%20in%20Business%3A%20A%20Practical%20Overview.&f=false [Accessed 12 June 2021].

Wilson, A. L., Buckley, E., Buckley, J. D., & Bogomolova, S. (2016). 'Nudging healthier food and beverage choices through salience and priming. Evidence from a systematic review', *Food Quality and Preference*, *51*, pp. 47-64. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0950329316300210 [Accessed 15 May 2021].

World Health Organization (2017) *Portuguese consumers' attitudes towards food labelling.* Available at: https://www.euro.who.int/__data/assets/pdf_file/0016/353050/Foodlabeling-in-Portugal_web.pdf [Accessed 05 May 2021].

World Health Organization (2018) *Better food and nutrition in Europe: a progress report monitoring policy implementation in the WHO European Region.* Available at: https://www.euro.who.int/en/health-topics/disease-prevention/nutrition/publications/2018/better-food-and-nutrition-in-europe-progress-report-2018 [Accessed 05 May 2021].

Young, L., Rosin, M., Jiang, Y., Grey, J., Vandevijvere, S., Waterlander, W., & Mhurchu, C. N. (2020). 'The effect of a shelf placement intervention on sales of healthier and less healthy breakfast cereals in supermarkets: A co-designed pilot study', *Social Science & Medicine*, *266*, pp. 1-10. https://doi.org/10.1016/j.socscimed.2020.113337 [Accessed 16 May 2021].

Zepeda, L., Sirieix, L., Pizarro, A., Corderre, F., Rodier, F. (2013) 'A conceptual framework for analyzing consumers' food label preferences: An exploratory study of sustainability label in France, Quebec, Spain and the US'. *International Journal of Consumer Studies,* 37, pp. 605-616. https://doi.org/10.1111/ijcs.12041 [Accessed 12 May 2021].

Appendix 1 – Informed Consent Document

Dear participant, I would like to invite you to take part in a qualitative study to investigate consumers' perceptions and understanding of food labelling.

I am Larissa Figueiredo, student at the National College of Ireland, and the title of my thesis is *"Food labelling as Choice Architecture: An examination of the influence of food labels in the consumer decision-making process of healthy products among young consumers"*.

You are being asked to participate in a focus group with 4 more people to have a conversation about the topic mentioned above.

The session will last between 30-40 minutes, and it will be audio recorded following all the General Data Protection Regulation (GDPR) guidelines.

Following, you can find a consent form in order to protect your rights and to assure the safety measures adopted in this research.

Please, read carefully all the information below and if you have any questions, do not hesitate to contact me. At the end, you can write your full name to sign the document in case you agree.

- I (*write your name and surname*) voluntarily agree to participate in this research study.

- I agree to my interview being audio-recorded.

- I understand that all information I provide for this study will be treated confidentially.

- I acknowledge that in any report on the results of this research my identity will remain anonymous.

- I understand that the researcher will use my quotes in a direct/indirect manner.

- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.

_____ _____

Signature of the participant   *Date*

Appendix 2 – Focus Group – Interview Topic Guide

1.1 Do you usually make a list to buy your groceries, or do you decide in the store?

1.2 Do you usually read the labels of the products you purchase?

1.3 Which information on a label usually gets your attention first?

1.4 Do you think food label is important? Why?

2.1 Do you think all the information contained on food labels is necessary? Why? (List of ingredients, nutritional information, symbols, origin)

2.2 What information do you usually analyse on food labels?

2.3 What type of information would you like to find on food labels?

3.1 If you are looking for a healthy product, which information on the label makes you think it is a good option?

3.2 Did you ever give up on buying a product because of an information you dislike on its label? Which information and why?

3.3 Which content of a food label do you trust most and least?

4.1 Analysing the list of ingredients (photo 1), which option do you think is healthier? Why?

4.2 Analysing the nutritional information (photo 2), which option would you buy and why?

4.3 Analysing the traffic-light label (photo 3), which one is the best choice in your opinion? Why?
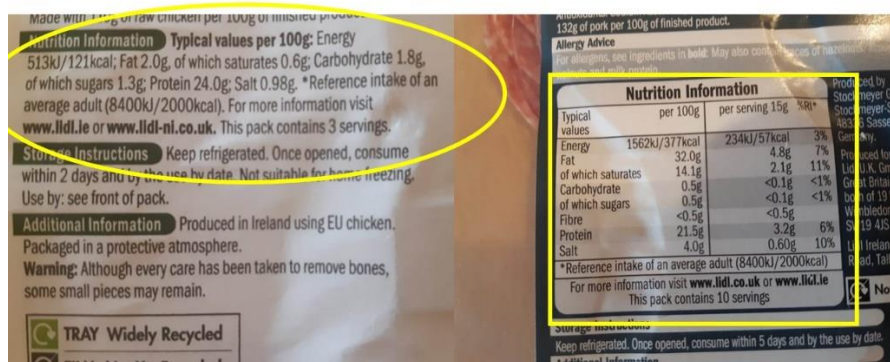
5.1 Do you think the consumption of healthy food items influences a kind of "chain reaction" on your habits? How?

5.2 Do you believe that easy to understand food labels can influence the construction of healthy diet habits for the population in general? How?

Appendix 3 – Food labels images – Focus Group

Beechwood smoked pork salami slices

Ingredients
Pork, Salt, Dextrose, Spices (contain **Mustard**), Spice Extracts, Beetroot Powder, Antioxidants: Sodium Ascorbate, Ascorbic Acid; Preservative: Sodium Nitrite. Made with 132g of pork per 100g of finished product.

Allergy Advice
For allergens, see ingredients in **bold**: May also contain traces of hazelnuts, almonds, walnuts and milk protein.

Pieces of cooked chicken breast in a sage and onion coating

Ingredients Chicken Breast, Preservative: Sodium Lactate; 3% Sage & Onion Coating (Herbs, Onion, Salt, Dextrose, Maize Starch, Natural Flavourings), Salt, Yeast Extract, Dextrose, Stabilisers: Diphosphates, Triphosphates, Polyphosphates. Made with 110g of raw chicken per 100g of finished product.

(Photo 1)

Nutrition Information Typical values per 100g: Energy 513kJ/121kcal; Fat 2.0g, of which saturates 0.6g; Carbohydrate 1.8g, of which sugars 1.3g; Protein 24.0g; Salt 0.98g. *Reference intake of an average adult (8400kJ/2000kcal). For more information visit www.lidl.ie or www.lidl-ni.co.uk. This pack contains 3 servings.

Storage Instructions Keep refrigerated. Once opened, consume within 2 days and by the use by date. Not suitable for home freezing. Use by: see front of pack.

Additional Information Produced in Ireland using EU chicken. Packaged in a protective atmosphere.
Warning: Although every care has been taken to remove bones, some small pieces may remain.

TRAY Widely Recycled
FILM Not Yet Recycled

Made with 110g of raw chicken per 100g of finished product.
132g of pork per 100g of finished product.

Allergy Advice
For allergens, see ingredients in **bold**: May also contain traces of hazelnuts and milk protein.

Nutrition Information

Typical values	per 100g	per serving 15g	%RI*
Energy	1562kJ/377kcal	234kJ/57kcal	3%
Fat	32.0g	4.8g	7%
of which saturates	14.1g	2.1g	11%
Carbohydrate	0.5g	<0.1g	<1%
of which sugars	0.5g	<0.1g	<1%
Fibre	<0.5g	<0.5g	
Protein	21.5g	3.2g	6%
Salt	4.0g	0.60g	10%

*Reference intake of an average adult (8400kJ/2000kcal). For more information visit www.lidl.co.uk or www.lidl.ie This pack contains 10 servings

Storage Instructions Keep refrigerated. Once opened, consume within 5 days and by the use by date.
Additional Information

(Photo 2)

(Photo 3)