SUNTEXT REVIEWS

SunText Review of Arts & Social Sciences
ISSN: 2766-4600

Open Access
Research Article
Volume 4:3

Nutritional Advertising: Marketing or Cheating?

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Received date: 15 November 2023; **Accepted date:** 02 December 2023; **Published date:** 09 December 2023

Citation: Maia M, Duarte A (2023). Nutritional Advertising: Marketing or Cheating. SunText Rev Arts Social Sci 4(3): 163.

DOI: https://doi.org/10.51737/2766-4600.2023.063

Abstract

Scientific data revealing a link between diseases and a poor diet have made consumers more attentive to what they consume and wanting to adopt new lifestyles. Although nutritional knowledge is scarce, brands need to reinvent themselves and be attentive to these changes so that they can keep up with their competition. Therefore, the aim of this study is to understand the perspective from the two sides: brands and consumers. On the one hand, how do brands advertise (supposedly) healthy products and, on the other, how do consumers perceive these same products. For a more targeted study, we chose to study the biscuit sector with an observational study in a supermarket, analyzed through a questionnaire survey. Overall, this study concludes that consumers are somewhat concerned with their eating habits. However, this preoccupation differs from the true nutritional reality from each product. We then conclude that the public's lack of knowledge is the key factor that allow companies to sell these products in a healthy way.

Keywords: Advertising; Communication; Nutrition; Healthy; Labels

Introduction

The growing concern for well-being and health has been evident in recent years and the search for a healthy lifestyle has become an obsession for many people [1,2]. As a result, we have seen a change in the communication made by the brands themselves and the appearance of many others aimed at satisfying these recent public desires. Any supermarket is full of "light", "diet", "sugar-free", "organic", "gluten-free" products and, in our subconscious, all these characteristics equate to healthy products that will help us lose weight [3]. But do we really know what we're buying and consuming? Are all these products that advertise themselves as "healthy" really healthy?

The need to clarify and demystify all the "secrets" behind product labels justifies this research, which aims to answer the following question: How does the information provided on the labels of products reported as healthy influence consumers' perceptions?

Theoretical framework

It is not certain where advertising originated or when it began, but the truth is that the history of advertising has evolved step by step with human development and technical progress [4]. Although different authors suggest different dates and moments for its emergence there is a consensus that, although Gutenberg's invention of the movable typo machine in the 15th century gave a significant boost to communication, it was with the Industrial Revolution that productive, commercial, and communicative activities really became a mass phenomenon. Despite this natural evolution, it took until the end of the 20th century for a new and significant change to revolutionize this industry once again: the appearance of the internet. With it, the world became virtually networked, consumers had instant and easy access to information and became increasingly suspicious of advertising [5,6].

Ethics in advertising

Ethics, according to Tai, is a set of moral principles whose aim is to improve the well- being of society [7]. As an extremely persuasive activity with clear commercial motivations, advertising is often accused of ethical violations which, for the most part, are centered on an apparent lack of social responsibility and regularly target potentially more vulnerable groups, such as children, minorities, or the disadvantaged [8]. With consumers' growing concern and demand for truthful, serious, responsible, and sustainable communication organizations are changing their

approach and communication to demonstrate coherence between their actions and the image they wish to project [9,10].

The packaging as a communication tool

As a result of consumer demands, immediate access to information, ever-increasing competition, and the internationalization of markets, as well as legislation in different countries, packaging is constantly evolving [11]. "Packaging is a complete and complex object that combines two major functions: to contain the product and to advertise it" and is an important communication tool as it plays a fundamental role in decision-making [12-14]. In other words, packaging can both be used as a marketing tool and can help consumers make informed choices [15]. In the case of eating products, and to ensure that consumers receive reliable nutritional information about the products they buy, the organizations responsible for health issues have created regulations so that the message on the packaging can be more easily controlled [16]. Food labels must therefore inform consumers about the composition of products to avoid misunderstandings and protect them from misuse and possible risks [17]. In recent years, nutritional claims have been added to the traditional nutritional information in the form of a table on the back of the pack and, in fact, this is what consumers base their purchasing decision on [16-18]. Nutritional information is not understood by most people as it is difficult to understand for those who are not in the field of nutrition but the nutritional claims on the front of packs are better perceived by consumers, something that can be understood as subjective perception or understanding [19-21]. It should also be noted that visual elements are usually the most eye- catching and their processing in the consumer's mind is unconscious, while verbal elements require greater cognitive effort to be attractive and trigger attention [22]. For better and easier nutritional reading, front-of-pack labelling systems have been created to allow quick decision-making through a simple format that is accessible to view and spontaneous to interpret [23]. It is important to note that these labels do not provide a complete assessment of the product's level of health, but rather a summary and not very detailed analysis of the product [24]. One such case is Nutri-Score (Figure 1). Created in France in 2017 by Santé publique France, this system, which has since been adopted by many other countries, consists of assessing the nutritional profile of a food product using an algorithm based on nutritional criteria that classifies the product between dark green, being the healthiest, (letter A) and red, being the least healthy, (letter E) [25]. In the Nutritional Traffic Light (Figure 2), some of the nutritional elements (fat, saturated fat, sugar, and salt/sodium) are represented by a symbol that indicates whether the value is low (in green), medium (in orange) or high (in red) [24]. Another system is the Health Star Rating (Figure 3), which classifies the general nutritional profile of foods and assigns them ratings ranging from half a star to 5 stars, making it quick and easy to compare similar products - the more stars it has, the healthier the product. Nutritional information on packaging has evolved a lot over time. In the beginning, this data was only used to inform consumers about the nature and composition of products, but now a detailed description is mandatory so that trade is fair and free from fraud, and so that food choices are made in an informed manner, with full factual knowledge [26].

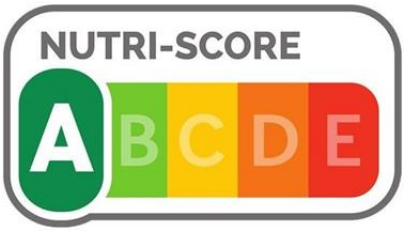


***Figure 1**: Nutri-Score.*
Source: Santé publique France, 2021.

***Figure 2**: Nutritional Traffic Light (example) Source: Costa, 2021.*

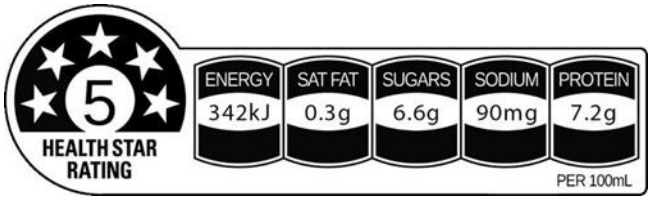


***Figure 3**: Health Star Rating System.*
Source: healthdirect, 2021.

***Figure 4**: Label Decoder.*
Source: Programa Nacional Promoção Alimentação Saudável, 2015.

Examples of this are regulations 178/2002, 1924/2006 and 1169/2011 of the European Parliament, or the General Standards for the Labelling of Prepackaged Foods of the Codex Alimentarius - International Food Standards, to name just a few. As the decision to choose a product is becoming increasingly difficult, given the variety on the market and the short time available to make that choice the National Program for the Promotion of Healthy Eating (NPPHE) has created a Label Decoder in Portugal (Figure 4), in conjunction with the Directorate General for Health, based on the recommendations of the UK Department of Health/Ministry of Health. It is therefore suggested that consumers take these cards with them when they go shopping, opting mainly for foods/drinks whose nutrients fall into the green category, moderating those in the yellow category and avoiding those in the red category [27].

Methodology

Instruments used and sample

A mixed methodology was used for this study, combining qualitative and quantitative methods. The qualitative method was based on points of sale visits, recording, and analyzing the data. As for the quantitative method, the instrument used was a questionnaire survey. For the study in question, we chose to use a non-probabilistic random sample, since everyone in the sample has a known, non-zero chance of being selected.

Methodological design

Biscuits, which can be eaten anywhere, at any time of day and by all age groups and economic classes, are one of the food products most favored by consumers and, representing 3% of the value generated by food goods, are found in most Portuguese homes [28,29]. However, this product, which is often associated with snacking moments, has been declining in sales due to increased competition from healthier options that end up taking their place in consumers' lives, which means that this sector must reinvent itself and provide consumers products that are compatible with their healthier lifestyles, to slow down the decline in consumption [29,56]. After choosing the object of study - biscuit packaging - it was also decided that it would be carried out in two hypermarkets since they sell a wide variety of food products. The food products were chosen with the advice of a nutrition professional, nutritionist Ana Sofia Ramos, registered with the Order of Nutritionists under number 4860N, and analyzed using the Label Decoder mentioned above [27]. The questionnaire survey was carried out online via Google Forms and was available between 24 September and 4 October 2021. The questions are shown (Table 1).

Results

Observation

To find out about the market and the options available for biscuits in the healthy eating category, an observational study was carried out, which is described in the following (Table 2).

Questionnaire survey

With a random sample, the survey received a total of 400 responses, of which 72.25% were female and 27.75% male (Graph 1), with the majority aged over 51 and between 36 and 50 (Graph 2). Of all the respondents, 44.3% have a bachelor's degree and 28.25% have secondary education. 19.25% said they had a master's degree and few people had postgraduate or PhD degrees (Graph 3). Regarding their district of residence, the overwhelming majority (75.75%) live in Lisbon, with 6.75% in Setubal and 6% in Porto (Graph 4).

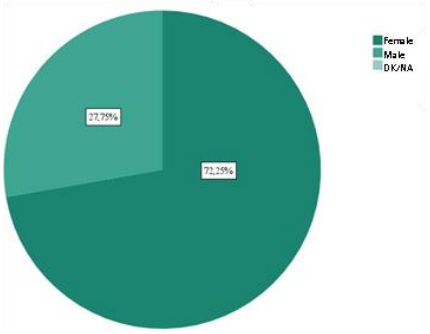
Concern about food and shopping habits

As can be seen (Graph 5), concern for health is a factor that has been on the rise. However, it was essential to understand whether this was accompanied by due attention to eating habits. 89.5% of respondents (358) replied that they are concerned about food and only 8.75% (35) said "No", with 1.75% replying "Don't know/no answer" (Graph 6). Of the 400 responses, 292 indicate the number of individuals whose eating habits are in line with their concern for food, compared to 96 who indicate that their eating practices are not (Graph 7). Since worldwide obesity and various diseases associated with poor diet have been increasing, we asked the participants if they had any pathologies associated with poor diet. 290 of them answered in the negative and 105 in the affirmative (Graph 8).

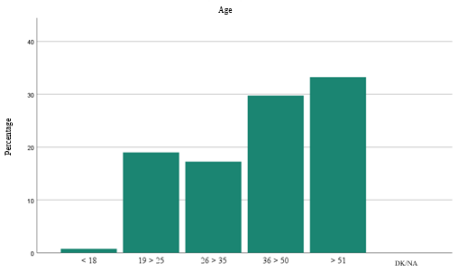
Eating out

People were also asked about their eating habits when dining out. When faced with 4 statements, respondents assessed their level of agreement using a 5-point Likert scale, where 1 = "Strongly disagree" and 5 = "Strongly agree". About the statement "When eating out, I always choose a quick option", most responses were between levels 1, 2, and 3, with 107, 124, and 116 responses respectively. Only 51 people agree/strongly agree and 2 people say they don't know (chart 9). Regarding the statement, "When eating out, I stick to my usual diet", the largest number of responses were at level 3, where neither agree nor disagree. However, 138 people disagreed and 109 agreed, as well as 5 who did not indicate their level of agreement (Graph 9). The data obtained from the last two questions is somewhat contradictory. In the statement "When eating out, I choose a healthier option", most responses are between levels 1, 2, and 3, with values of 45, 110, and 152, respectively. Only 56 people indicated that they agreed and 31 that they totally agreed, and 6 Doesn’t Know/Doesn´t Answer (DK/DA) (chart 9). This suggests that when people eat out, they opt for less healthy options. But for the last statement, "When eating out, I choose a

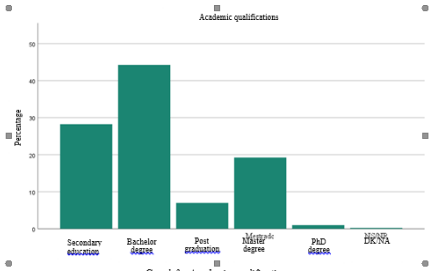
less healthy option", 302 answers are between levels 1, 2, and 3 and only 88 indicate that they agree/strongly agree. In other words, this is not an issue with much relevance and impact for individuals and, when they eat out, there is no rule as to the type of food they will eat.



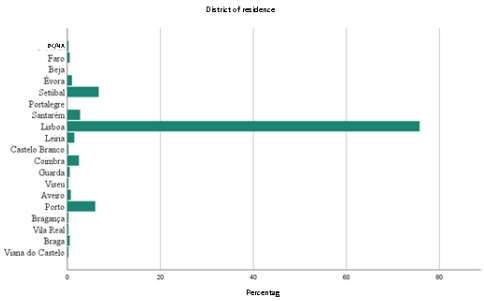
***Graph 1**: Gender.*



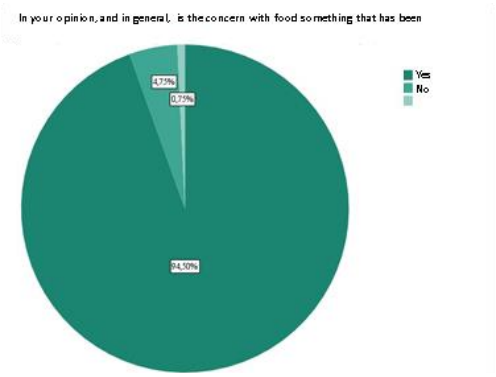
***Graph 2**: Age.*



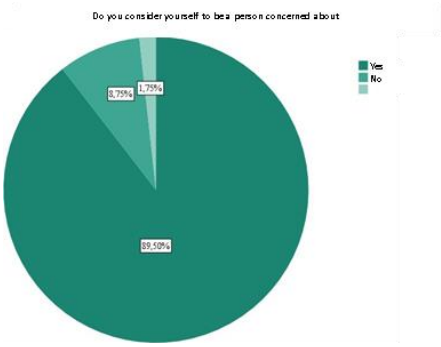
***Graph 3**: Academic qualifications.*



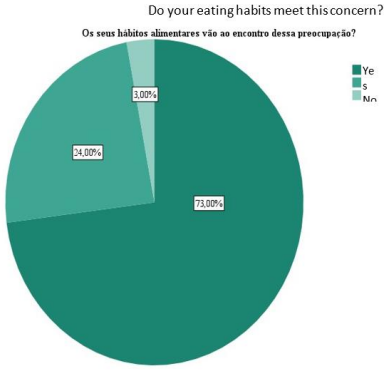
***Graph 4**: District of residence.*



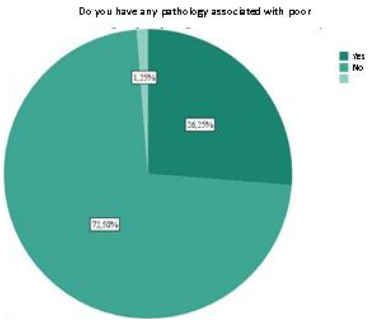
***Graph 5**: In your opinion, and in general, is the concern with food something that has been increasing?.*



***Graph 6**: Do you consider yourself to be a person concerned about food?.*



***Graph 7:** Do your eating habits meet this concern?.*



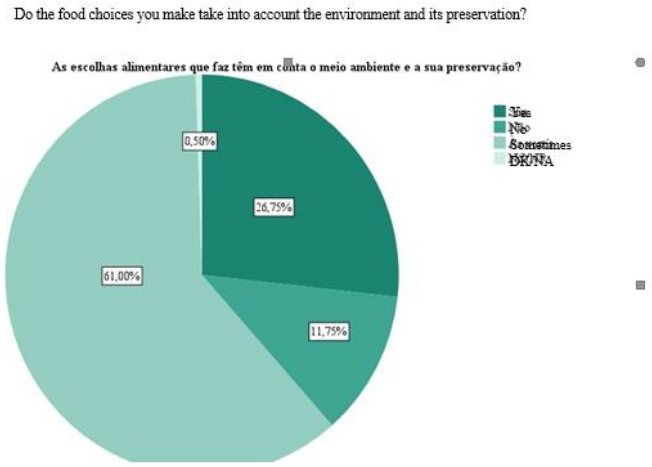
***Graph 8**: Do you have any pathology associated with poor diet?.*

		Counting	% N table total
When eating out, I always choose a quick option.	1	107	26,8%
	2	124	31,0%
	3	116	29,0%
	4	40	10,0%
	5	11	2,8%
	DK/NA	2	0,5%
When eating out, I keep to my usual diet.	1	39	9,8%
	2	99	24,8%
	3	148	37,0%
	4	74	18,5%
	5	35	8,8%
	DK/NA	5	1,3%
When eating out, I choose a healthier option.	1	45	11,3%
	2	110	27,5%
	3	152	38,0%
	4	56	14,0%
	5	31	7,8%
	DK/NA	6	1,5%
When eating out, I choose a less healthy option.	1	98	24,5%
	2	102	25,5%
	3	102	25,5%
	4	64	16,0%
	5	24	6,0%
	DK/NA	10	2,5%

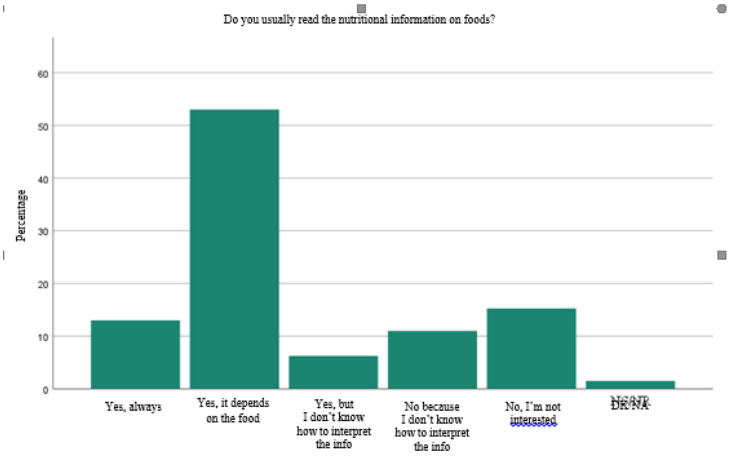
***Figure 9**: Level of agreement: eating out.*

		Counting	% N table total
On a supermarket visit, I prefer food produced in a sustainable way.	1	24	6,0%
	2	87	21,8%
	3	166	41,5%
	4	90	22,5%
	5	28	7,0%
	DK/NA	5	1,3%
On a supermarket visit, I choose foods that I know are good on a nutritional level.	1	13	3,3%
	2	43	10,8%
	3	130	32,5%
	4	147	36,8%
	5	61	15,3%
	DK/NA	6	1,5%
On a supermarket visit, I choose foods and food products of vegetable origin.	1	43	10,8%
	2	87	21,8%
	3	143	35,8%
	4	89	22,3%
	5	30	7,5%
	DK/NA	8	2,0%
Numa ida ao supermercado, opto por alimentos cujas embalagens contenham alegações nutricionais e de saúde	1	34	8,5%
	2	91	22,8%
	3	126	31,5%
	4	91	22,8%
	5	45	11,3%
	DK/NA	13	3,3%

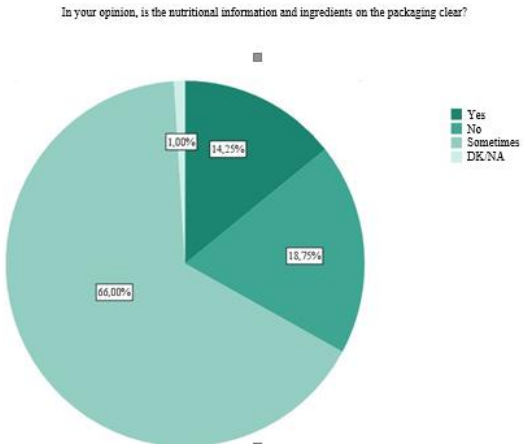
***Figure 11**: Level of agreement: going to the supermarket.*



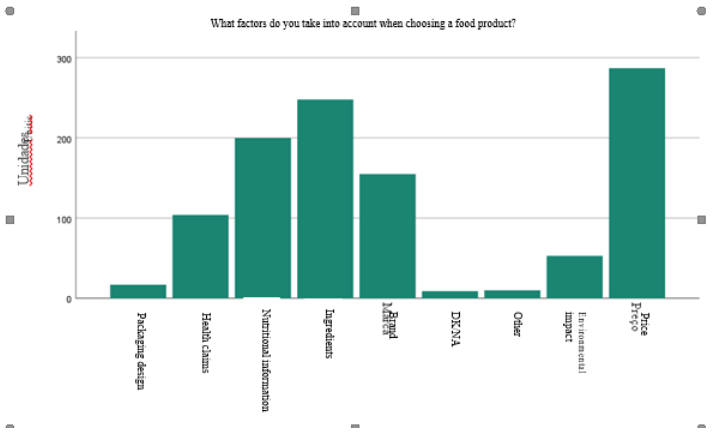
***Graph 10**: Do the food choices you make consider the environment and its preservation?.*



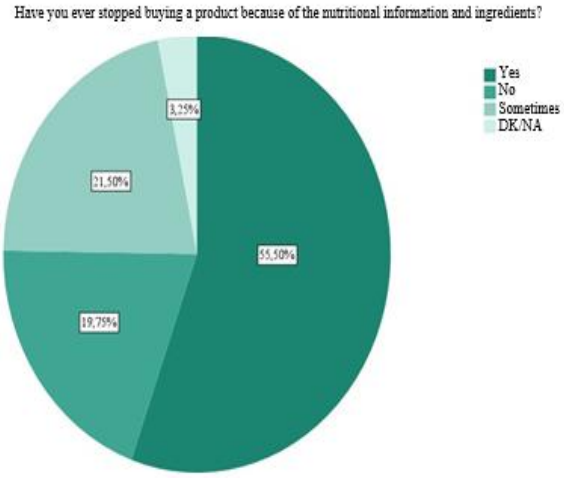
***Graph 12:** Do you usually read the nutritional information on foods?.*



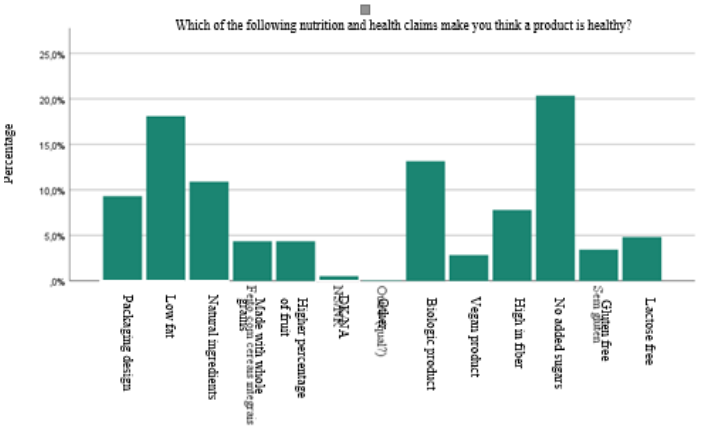
Graph 13: *In your opinion, is the nutritional information and ingredients on the packaging clear?.*



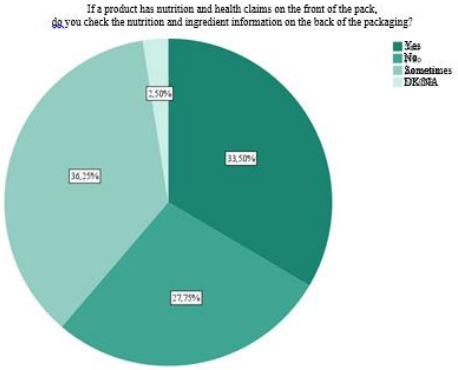
Graph 16*: What factors do you consider when choosing a food product?.*



Graph 14*: Have you ever stopped buying a product because of the nutritional information and ingredients?.*



Graph 17*: Which of the following nutrition and health claims make you think a product is healthy?.*



Graph 15*: If a product has nutrition and health claims on the front of the pack, do you check the nutrition and ingredient information on the back of the packaging?.*

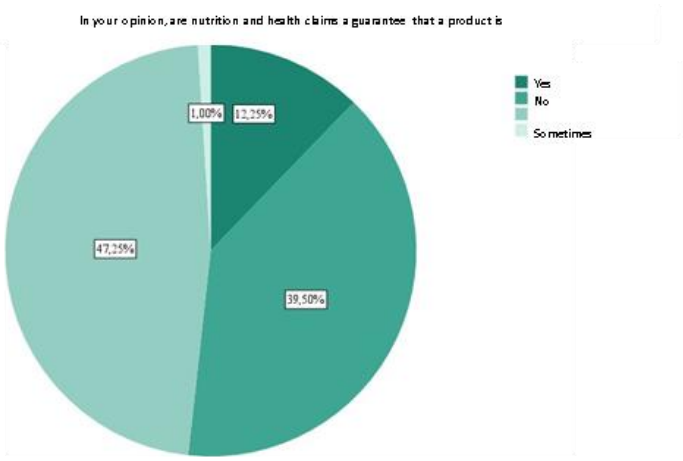
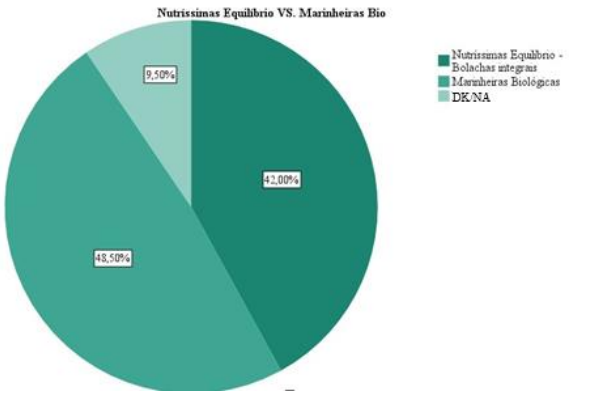
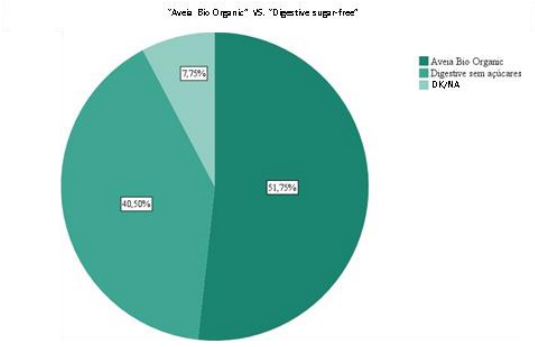


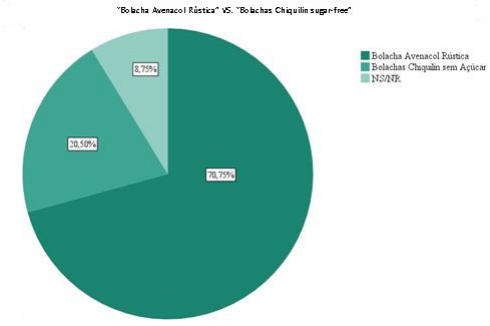
Figure 18*: In your opinion, are nutrition and health claims a guarantee that a product is healthy?.*



***Graph 19**: "Nutríssimas Equilíbrio" VS. "Marinheiras Biológicas".*



***Graph 20:** "Aveia Bio Organic" VS. "Digestive sugar-free".*



***Graph 21:** "Bolacha Avenacol Rústica" VS. "Bolachas Chiquilin sugar-free".*

Going to the supermarket

People were also asked whether their food choices take the environment and its preservation into account. The results show that "sometimes" is the majority answer (244 answers, 61%) but 107 people indicate "yes" and only 47 indicate "no" and 2 say "DK/DA" (Graph 10). Four statements were made again, with each respondent marking their level of agreement on a 5-point Likert scale. Thus, in the statement "On a supermarket visit, I choose food produced in a sustainable way", 166 people indicated that they neither agreed nor disagreed (level 3) against 111 who disagreed/strongly disagreed and 118 who agreed/strongly agreed (only 5 people indicated that they didn't know) (Graph 11). In other words, this is not yet a relevant issue for consumers, because although there are more people who agree than those who disagree, the difference is quite slight, and most people remain indifferent. Regarding the statement "On a supermarket visit, I choose foods that I know are good nutritionally", most of the answers are between levels 3, 4, and 5, with 130, 147, and 61 answers respectively, against 56 people who indicate that they totally disagree/disagree and 6 people who answer "DK/DA" (Graph 11). When it came to the statement "On a supermarket visit, I choose food and food products of vegetable origin", most responses were again at level 3, with a total of 143. Again, the difference between levels 1 and 2 and 3 and 4 was very small, with 130 being the total number of people who disagreed/strongly disagreed and 119 being the number of people who agreed/strongly agreed. 8 people answered "DK/DA". Finally, for the statement "On a supermarket visit, I choose foods whose packaging contains nutrition and health claims", "neither agree nor disagree" was once again the option with the most responses, with a total of 126. As before, the difference between the levels of disagreement and agreement is quite small. This time, levels 1 and 2 had a total of 125 responses and levels 3 and 4 had 136 (Graph 11). In other words, habits of buying sustainable and healthy products are not yet ingrained in people's lifestyles.

Reading labels

To get a good understanding of how people read and understand labels, a few questions were asked. To the question "Do you read the nutritional information on food?", the majority (53%) answered "Yes, it depends on the food". 69 people indicated that they may (or may not) have this habit, but that they don't know how to interpret the information, 61 of those surveyed said that they don't do it due to lack of interest and only 52 said that they always do it (Graph 12). When asked whether the nutritional information and ingredients on the packaging are clear, 264 (66%) of the respondents said "Sometimes" and 75 people said "No", which is in line with the number of people who said they didn't know how to interpret the nutritional information in the previous question. Lastly, 57 people said that the information was clear, which is also in line with the figures mentioned in the previous question, in which 264 peoplesaid that they read the nutritional information (either always or depending on the food) (Graph 13). Considering the number of people who indicated "sometimes" when asked about the clarity of the information on the packaging (264 people), it is consistent that 222 said they had already stopped buying a product because of its nutritional information. Only 79 said they hadn't and 86 said they sometimes had (Graph 14). Since the front of the package generally doesn't contain all the information needed to properly analyze the product, we asked about the habit of reading the nutritional information and ingredients on the back. The

answers to this question were close, with 134 people saying yes, 111 saying no and 145 saying sometimes (chart 15). Despite the very close figures and the fact that the majority say they do so, the number of people who don't check the nutritional information and ingredients on the back of packs leads us to conclude that it's not common knowledge that this information alone isn't enough to fully understand the product in question. Given that front of pack reading is of great importance when making a choice, we asked which of a list of seven factors were considered the most. The most chosen factor was the price, with 26.5% of the total responses, followed by ingredients with 22.9%. Other relevant factors were also mentioned, such as nutritional information (18.5%) and the brand (14.3%). There were also those who chose other factors, such as "environmental impact", "national products/produced in Portugal", "organic vs. non-organic", "the flavor", "the type of packaging (avoiding plastic)", "whatever I want", "the price/sustainability ratio", "whether it is of plant or animal origin" and "the quality" (Graph 16). By crossing the "Age" factor with "Do you consider yourself a food-conscious person?" and "What factors do you take into account when choosing a food product?", the following conclusions were drawn: the 3 responses obtained by under-18s, all of them indicate that they are concerned about food. The factors that respondents mention when choosing a food product are the ingredients (3 answers), the price (3 answers), and the nutritional information (1 answer); in the 19-25 age range, there were 79 responses, 69 of which said they were concerned about food. These 69 people chose price (29.4%), ingredients (21%), nutritional information (19.6%), and brand (17.8%) in the first place. Health claims (5.1%), potential allergens (4.2%), packaging design (1.9%), and environmental impact were also mentioned to a slightly lesser extent, with one respondent mentioning "other (which?)"; of the 67 answers given by people aged between 26 and 35, 58 said they were concerned about food. Once again, price was the most mentioned factor, with 26.2% of the total responses, followed by nutritional information with 20.4%. Ingredients (18.3%), the brand (13.6%), and health claims (9.9%) were also selected. The design of the packaging (5.2%), and potential allergens (4.2%) were mentioned to a lesser extent, and in the "other" option, three people answered "organic vs. non-organic", "whether it's of plant or animal origin" and "type of packaging (avoid plastic)".

***Table 1**: Theoretical foundation.*

Question	Theoretical background
Informed consent	General Data Protection Regulation - Law 58/2019
Q1: Do you consider yourself a healthy person?	Proença (2010); Plank & Gould (1990); Sanderson (2016)
Q2: Are your eating habits in line with this concern?	
Q3: Do you have any pathologies associated with a bad diet (diabetes, obesity, high cholesterol, etc.)?	Greger (2019); World Health Organization (2000); Nestle (2002)
Q4: In your opinion and in general, is concern aboutfood something that has been increasing?	Dudeja & Gupta (2017); Northup (2014); Plank & Gould (1990); Proença (2010); Carmo (2020)
Q5: Do the food choices you make take the environment and its preservation into account?	Lairon (2019); Scheer & Moss (2011); Sanderson (2016)
Q6: Do you read the nutritional information on food?	Cowburn & Stockley (2004); Muñoz (2018)
Q7: Please indicate your level of agreement with thestatements on a scale of 1 to 5 (where 1 = Strongly Disagree and 5 = Strongly Agree):	Dudeja e Minhas (2017); Brunner, van der Horst, & Siegrist, (2010); Dudeja & Gupta (2017)
Q7.1: When I eat out, I always choose a quick option	
Q7.2: When I eat out, I stick to my usual diet	
Q7.3: When I eat out, I choose a healthier option	
Q7.4: When I eat out I choose a less healthy option	
Q8: Please indicate your level of agreement with the statements on a scale of 1 to 5 (where 1 = Strongly Disagree and 5 = Strongly Agree):	Lairon (2019); Scheer & Moss (2011); Northup (2014); Marinho, Hamann & Lima (2007); Kanter, Vanderlee & Vandevijvere (2018); Leitzmann (2005); Aschemann-

Q8.1: When going to the supermarket, I choose food produced in a sustainable way	Witzel, Gantriis, Fraga, & Perez-Cuet (2020)
Q8.2: When going to the supermarket, I choose food that I know is nutritionally good	
Q8.3: When going to the supermarket, I choose food and food products of vegetable origin	
Q8.4: When going to the supermarket, I choose foods whose packaging contains nutritional and health claims	
Q9: What factors do you consider when choosing a foodproduct?	Agariya, Johari, Sharma, Chandraul, & Singh(2012); Simmonds & Spence (2016); Koen, Blaauw & Wentzel-Viloen (2016); Stanhope & Havel (2008); Rundh (2005); Elliott & Truman (2020)
Q10: In your opinion, is the nutritional information and ingredients on the packaging clear?	Cowburn & Stockley (2004); Northup (2014);
Q11: Have you ever not bought a product because of the nutritional information and ingredients?	Cowburn & Stockley (2004);
Q12: If a product has nutrition and health claims on the front of the pack, do you check the nutrition informationand ingredients on the back of the pack?	Huang & Lu (2015); Borgmeier & Westenhoefer (2009); Kanter, Vanderlee & Vandevijvere (2018)
Q13: Which of the following nutrition and health claimsmake you think a product is healthy?	Stanhope & Havel (2008); Mateus (2019); Lindstrom (2011); The Nielsen Company (2015); Breen, James, Rangan & Gemming (2020)
Q14/15/16[1]: Which of the following products do you think is the healthiest at first glance?	PNPAS (2015); Stanhope & Havel (2008);
Q14: Nutríssimas Equilíbrio - Bolachas integrais VS. Marinheiras Biológicas	Cavallo & Piqueras-Fiszman (2016); Cowburn & Stockley (2004); Borgmeier & Westenhoefer (2009)
Q15: Aveia Bio Organic VS. Digestive sem açúcares	
Q16: Bolacha Avenacol Rústica VS. Bolacha Chiquilín sem açúcar	
Q17: In your opinion, are the nutrition and health claim a guarantee that the product is healthy? (E.g., "No added sugar", "Light", "Reduces the risk of", "Source of", "Free from", "Low in", "Organic", "Contains natural ingredients", etc.)	Bakers & Martinson (2001); Gaffney apud Bakers & Martinson (2001); Stanhope & Havel (2008); Lindstrom (2011)

Table 2: *Market Options analyzed and Correspondent ingredients.*

Name	Image	Lipids	Saturated lipids	Sugar	Salt	Unhealthy ingredients
Nutríssimas Equilíbrio		18,2g	2,3g	15,5g	0,7g	Cane sugar Sunflower oil
Aveia Bio Organic		19g	2g	19g	0,95g	Vegetable oil Sugar Glucose syrup Fructose

Digestive sem açúcares Diet Nature		16g	1,5g	<0,5g	0,88g	Vegetable oil
Bolacha de Aveia Avenacol Rústica		17g	3,9g	21g	0,65g	Sugar Vegetable oil Glucose syrup Fructose
Bolacha Maria Integral		9,3g	0,9g	23,2g	0,8g	Fructose Sunflower oil
Chip Choco sem glúten		23g	6g	0,7g	0,58g	Cocoa butter and cream Vegetable oil
Bolachas Zero Mini Cookies		19g	9,8g	<0,5g	0,85g	Cocoa butter and cream Vegetable palm fat

There was also one person who opted not to choose any of the factors. Between the ages of 36 and 50, a total of 118 responses were received, 104 of which said they were concerned about food. Of the factors mentioned when choosing a food product, price came first, with 26.2% of the total responses, followed by ingredients, with 23.4%, and nutritional information, with 20.6%. Respondents in this category also mentioned health claims (11.7%), the brand (10.6%), and potential allergens (5.3%). There were also two extra factors mentioned, "whatever I want" and "produced in Portugal" and 4 people who didn't mention any factors. Finally, of the 133 respondents aged over 51, 124 are concerned about food. In this bracket, price loses the lead to ingredients (28.3%), but reaches second place among the most mentioned factors, with 21.5% (a significant difference). Nutritional information (19.5%), health claims (12.6%), the brand (10.9%), and potential allergens (6.1%) were also mentioned, while "national products" and "price/sustainability ratio" were given as extra factors. In this range, only one person didn't select any of the options. It's important to note that only in the 16 to 25 and 26 to 35 age groups was the design of the packaging mentioned, as well as responses to the environment and its preservation. The most important factor is undoubtedly the price, and only in the 51+ age group was the price not mentioned the most. This leads to the conclusion that, for people over 51, price is no longer the most decisive factor. The four most mentioned factors were price, with 25.6% of all responses, followed by ingredients (23.5%), nutritional information (19.9%), and brand (12.7%). these figures lead us to conclude that although price is the most important factor, nutritional issues are beginning to gain strength when it comes to choosing food products.

Knowing that the use of triggers and keywords is essential to get the consumer to buy, we asked, from a list of eleven options, which

nutritional and health claims made the respondent think that a product is healthy. In this question, each person could choose the number of options that best suited their opinion. The most mentioned option was "no added sugar", with 308 answers (20.3%), followed by "low fat", with 274 answers (18.1%). The "organic product" option came third, with 199 responses (13.1%), and "natural ingredients" followed with 165 choices (10.9%). The option "low in cholesterol" was also mentioned a lot (141 responses and 9.3%), as was "high in fiber" (118 responses and 7.8%). The alternatives "lactose-free" (4.8%), "made with whole grains" (4.4%), "higher percentage of fruit" (4.4%), "gluten-free" (3.4%), "vegan product" (2.8%), the option not to answer (0.5%) and an extra option, mentioned by one respondent, "low salt and sugar content" (0.1%) should also be considered (Graph 17). Crossing again "Age" with "Do you consider yourself to be a food-conscious person?" and "Which of the following nutritional and health claims make you think a product is healthy?", it turns out that: all three respondents aged up to 18 mentioned being concerned about their diet. From the list of options presented, "low in fat", "contains natural ingredients" and "no added sugars" were also mentioned (the three options with 23.1% each of the total responses). "Low cholesterol content", "made with whole grains", "higher percentage of fruit" and "organic product" were also mentioned once each (7.7% for each option) between the ages of 19 and 25, 79 responses were obtained, 69 of which said they were concerned about their diet. In this bracket, the most mentioned option was "no added sugar", with 18.1% of the total responses, followed by "low fat", with 15.7%. It is also important to mention the options "organic product" and "contains natural ingredients", with 13.9% and 12.5%t respectively. Respondents in this age group also mentioned "lactose-free" (7.8%), "low in cholesterol" (7.5%), "vegan product" (5.7%), "high in fiber" (5.7%), "gluten-free" (5.3%), "made with whole grains" (4.3%) and "higher percentage of fruit" (3.6%) for the 58 individuals aged between 26 and 35 who say they are concerned about their diet, the claim they most associate with a product being healthy is "no added sugar", which received 48 responses (equivalent to 21.6%). With very close margins, in second and third place were "organic product" (16.2%), and "low fat content" (15.8%) respectively. "Contains natural ingredients" (9%), "low in cholesterol" (8.6%), "high in fiber" (6.3%), "higher percentage of fruit" and "lactose-free" (5% each), "made with whole grains" (4.5%), "vegan product" (4.1%) and "gluten-free" (3.6%) were also mentioned. This group also received an extra response where "low salt and low sugar content" was mentioned (0.5%) of the 118 answers given by people aged between 36 and 50, 104 were from those who indicated that diet was a concern. For these respondents, the most frequently mentioned claims were "no added sugar" (20.5%), and "low fat" (18.4%). The options "organic product" (12.8%), "contains natural ingredients" (10.6%), "high in fiber" (9.2%), and "low in cholesterol" (8.7%) were also mentioned with some expressiveness. Although with fewer references, the claims "higher percentage of fruit" (5.3%), "lactose-free" (4.3%), "made with whole grains" and "gluten-free" (3.6% each), and "vegan product" (2.4%) were also mentioned. In this range, two people didn't mention any of the options. Finally, for the 124 respondents who are concerned about their diet and are over 51 years old, the claims they take most into consideration are "no added sugar" (20.3%) and "low in fat" (18.8%). These respondents also mentioned "contains natural ingredients" (11.8%), "organic product" (11.4%), "low in cholesterol" (11.1%), and "high in fiber" (9.2%). With fewer mentions, they also referred to "made with whole grains" (5%), "lactose-free" (4.6%), "higher percentage of fruit" (3.9%), "gluten-free" (2.6%), and "vegan product" (1.3%). Out of a total of 358 people who indicated that they care about their diet, "no added sugar", "low fat", "organic" and "contains natural ingredients" are the claims that most condition respondents to think that a product is healthy.

- The option "no added sugar" comes first in all age ranges.
- "Low in fat" is always in first, second or third place.
- "Contains natural ingredients" takes first, third or fourth place.
- "Organic product" takes second, third or fourth place, except for under-18s.

It's important to note that low-cholesterol and lactose-free products are still considered healthy, as are those that claim to be rich in fiber. Although the number of respondents aged up to 18 was low (only 3), this was the only age group that didn't mention all the options that were presented. All the others always mentioned at least one of the options, even if some were mentioned only a few times. Since reading labels is an extremely important factor in making a good food choice, and to assess people's perception of the actions that brands take, we asked whether, in the respondent's opinion, nutritional and health claims are a guarantee that it is healthy. Of the 400 people who answered the question, 189 said "sometimes" and 158 said "no". Although only 49 respondents believe that nutrition and health claims are a guarantee that a product is healthy, the number of people answering "sometimes" shows that, for some, reading the front of the pack may be enough in some cases (which, as we have seen, is not the case).

Packaging: which product is healthier?

To assess consumers' perceptions of packaging and how healthy or unhealthy it is, three identical questions were asked in which they were asked to make a direct comparison between two products and indicate which of the two, at first glance, was healthier. Of the three questions, the second option was the one whose nutritional values and ingredients were better for health. However, it is important to clarify that this does not mean that because one option is better than the other, it becomes a healthy product. So, the first question

compared Nutríssimas Equilíbrio and Marinheiras Biológicas biscuits since the literature review indicates that packaging with blue and/or green tones transmits the sensation of health, and so we wanted to compare a product that satisfied this aspect with another that was healthier but didn't fulfill this criterion. The second question aimed to assess the perception of the terms "organic", "natural" and "organic". Thus, a product was chosen with the indication of being organic and natural and another that was a better option and did not have any of these claims, comparing the Bio Organic Oat biscuits with the Digestive sugar-free biscuits from DietNature brand. Finally, we set out to measure consumer perception of health claims on the front of the pack. As in the previous examples, an option was chosen that met these requirements and another with better values that didn't have any health claims. The examples presented were Avenacol Rústica biscuits compared to Chiquilín sugar-free biscuits. Of the three questions presented, only the first had the highest number of correct answers. Although it was by a small margin, Marinheiras Biológicas had a total of 194 responses, corresponding to 48.5% of the total responses, so the healthier option ended up being the one chosen. Nutríssimas Equilíbrio biscuits had a total of 168 responses (42%) and there were also 38 people who chose not to choose between the two options, answering “DK/DA" (Graph 19). In the second question, where Bio Organic oat biscuits were compared with Digestive sugar- free biscuits, most respondents chose the first option. Although there was some difference, Bio Organic received a total of 207 responses (equivalent to 51.7% of the total) compared to Digestive, which received 162 (40.5%), and there was a total of 31 responses to the "DK/DA" option (Graph 20). Finally, the third question had the largest difference. Avenacol biscuits, which are said to help reduce cholesterol, received a total of 283 responses, which equates to 70.8%. Only 82 people got it right when they chose sugar-free Chiquilín biscuits as the healthier option and there were still 35 people who didn't choose either option (Graph 21).

Conclusions

This study allows us to conclude that the lack of nutritional knowledge is widespread and is holding back the necessary change. Although respondents say they are concerned about their diet, the data shows that they lack knowledge on the subject and, therefore, this concern is not matched by consumption behavior. Although only 49 of the 400 respondents believe that nutrition and health claims are a guarantee that a product is healthy, the number of people who answered "sometimes" shows that for some, reading the front of the pack may be enough. Knowing which nutrition and health claims lead an individual to believe that a product is healthy, we can conclude that eating habits will not change as quickly as necessary and that these products will continue to be healthy in the minds of consumers who don't have enough knowledge to evaluate them otherwise. Misinformation is constant and growing day by day, and defense mechanisms need to be put in place to ensure that health always comes first and is kept up to date with what is true. On the brands' side, we can conclude that they use lack of knowledge as a key factor in selling. The combination of that lack of knowledge, front-of-pack labeling systems, nutritional and/or health claims, and good communication is the secret to selling a product as healthy, even if it is not. Although it is common to think that brands are misleading consumers, this is not the case, as all the necessary information is contained on the packaging, camouflaged, however, by its location, design, and poor prominence.

On the consumer side, we can admit that the information placed on food packaging labels is, for the most part, seen as reliable and, despite their alleged concern for food, the lack of knowledge is allowing brands to win, even if they often only confuse those who want to make the best choices for their health. For the future, there must be more concern about nutritional information and how it is read, and greater care on the part of organizations about how the message is conveyed. It may be an arduous and difficult road to travel, but if the information is conveyed as clearly as possible, there is hope that the problems associated with poor nutrition will no longer be one of the world's biggest concerns.

References

1. Dudeja P, Gupta RK, Minhas AS. Food Safety in the 21st Century - Public Health Perspective. 2017; 491-496.
2. Carmo Id. Alimentação: Mitos e Factos - Uma Perspetiva Científica. Portugal: Oficina do Livro. 2020
3. Ghodeswar BM. Building Brand Identity in Competitive Markets: A Conceptual Model. J Product Brand Management. 2008; 17: 4-12.
4. Morales DM. The history of advertising. University of Matanzas Camilo Cienfuegos. 2012.
5. Duarte A. The relationship between brands and consumers. Social Brand Management in a Post Covid-19 Era. 3-16. Routledge. 2023.
6. Kumar V, Gupta S. Conceptualizing the Evolution and Future of Advertising. J Advertising. 2016; 45.
7. Tai HS. Advertising Ethics: The Use of Sexual Appeal in Chinese Advertising.Teaching Business Ethics. 1999; 3: 87-100.
8. Treise D, Weigold MF, Conna J, Garrison H. Ethics in Advertising: Ideological Correlates of Consumer Perceptions. J Advertising. 1994; 23: 59-69.
9. Duarte A, Chambel S. Brand Activertising: From Profit-Purpose to Social Positioning. In The Role of Brands in an Era of Over-Information IGI Global. 2023; 198-215.
10. Schlegelmilch B, Pollach I. The Perils and Opportunities of Communicating. 2005; 21.
11. Rundh B. Packaging design: creating competitive advantage with product packaging. British Food J. 2009; 111: 988 -1002.
12. Sena M. Packaging: the image element of the product. In Media & Journalism - Advertising: Theories, Methods and Practices. Press of the University of Coimbra. 2019; 19: 313-319.

13. Underwood RL, Klein NM. Packaging as Brand Communication: Effects of Product Pictures on Consumer Responses to the Package and Brand. J Marketing Theory and Practice. 2002; 10: 58-68.
14. Elliott C, Truman E. The Power of Packaging: A Scoping Review and Assessment of Child-Targeted Food Packaging. Nutrients. 2020; 12.
15. Miklavec K, Hribar M, Kusar A, Pravst I. Heart Images on Food Labels: A Health Claim or Not? Foods. 2021; 10: 1-16.
16. Huang L, Lu J. The Impact of Package Color and the Nutrition Content Labels on the Perception of Food Healthiness and Purchase Intention. J Food Products Marketing. 2015; 1-29.
17. Koen N, Blaauw R, Wentzel-Viljoen E. Food and nutrition labelling: the past, present and the way forward. South African J Clinical Nutrition. 2016; 29: 13- 21.
18. Grunert KG, Wills JM, Fernandez-Celemin L. Nutrition knowledge and use and understanding of nutrition information on food labels among consumers in the UK. Appetite. 2010; 55: 177-189.
19. Cowburn G, Stockley L. Consumer understanding and use of nutrition labelling: a systematic review. Public Health Nutrition. 2004; 8: 21-28.
20. Northup T. Truth, Lies, and Packaging: How Food Marketing Creates a False Sense of Health. Food Studies - An Interdisciplinary J. 2014; 3: 9-18.
21. Borgmeier I, Westenhoefer J. Impact of different food label formats on healthiness evaluation and food choice of consumers: a randomized-controlled study. BMC Public Health. 2009; 9: 1-12.
22. Loose SM, Lockshin L, Louviere J. What you see may not be what you get: Asking consumers what matters may not reflect what they choose. Marketing Letters. 2009; 21: 335-350.
23. Kanter R, Vanderlee L, Vandevijvere S. Front-of-package nutrition labelling policy: global progress and future directions. Public Health Nutrition. 2018; 21: 1399-1408.
24. Hagmann D, Siegrist M. Nutri-Score, multiple traffic light and incomplete nutrition labelling on food packages: Effects on consumers' accuracy in identifying healthier snack options. Food Quality and Preference. 2020; 83.
25. Goiana-da-Silva F, Cruz-e-Silva D, Gregorio M, Nunes AM, Calhau C, Hercberg S, Araujo F. Nutri-Score: A Public Health Tool to Improve the Eating Habits of the Portuguese Population. Scientific J Medical Association. 2019; 32: 175-178.
26. Cheftel JC. Food and nutrition labelling in the European Union. Food Chemistry. 2005; 93: 531-550.
27. PNPAS. Label decoder. Obtained from National Program for the Promotion of Healthy Eating: 2015.
28. Tecno Alimentar. The Biscuit Industry. Obtained from TecnoAlimentar: Food Industry Magazine: 2020; 30.
29. Hypersuper. Analysis: Biscuits represent 3% of the value generated by food products. Obtained from Hipersuper: 2018; 3.
30. Agariya AK, Johari A, Sharma HK, Chandraul UN, Singh D. The Role of Packaging in Brand Communication. Inter J Scientific & Engineering Research. 2012; 3: 1-13.
31. Aschemann-Witzel J, Gantriis RF, Fraga P, Perez-Cuet FJ. Plant-based food and protein trend from a business perspective: markets, consumers, and the challenges and opportunities in the future. Critical Reviews in Food Science and Nutrition. 2021; 61.
32. Bakers S, Martinson DL. The Tares Test: Five Principles for Ethical Persuasion. Journal of Mass Media Ethics: Exploring Questions of Media Morality. 2001; 16: 148-175.
33. Breen M, James H, Rangan A, Gemming L. Prevalence of Product Claims and Marketing Buzzwords Found on Health Food Snack Products Does Not Relate to Nutrient Profile. Nutrients. 2020; 12: 1-13.
34. Brunner T, van der Horst K, Siegrist M. Convenience food products. Drivers for consumption. Appetite. 2010; 498-506.
35. Cavallo C, Piqueras-Fiszman B. Visual elements of packaging shaping healthiness evaluations of consumers: The case of olive oil. J Sensory Studies. 2016; 1-9.
36. Dudeja P, Minhas AS. Food safety in modern society - changing trends of food production and consumption. Food Safety in the 21st Century - Public Health Perspective. Elsevier. 2017; 90-95
37. Faculty of Nutrition and Food Sciences, U. Guide to Healthy Food Choice – Reading the label. Consumer Institute. 2002.
38. Greger M. How not to die. New York: Flatiron Books. 2019.
39. Lairon D. Biodiversity and sustainable nutrition with a food-based approach. Em B. Burlingame, S. Dernini, Sustainable Diets and Biodiversity Roma: FAO Headquarters. 2010; 30-35
40. Leitzmann C. Vegetarian diets: what are the advantages? Forum of Nutrition. Elmadfa. 2005; 57: 147-156.
41. Lindstrom M. Brandwashed: Os truques de marketing que as empresas usam para manipular as nossas mentes. New York: Martin Lindstrom Company, Limited. 2011.
42. Marinho MS, Hamann EM, Lima Ad. Practices and changes in eating behavior in the population of Brasilia, Federal District, Brazil. Brazilian J Maternal and Child Health. 2007; 251-261.
43. Mateus S. Emotive forms of persuasive speech. Media&Journalism - Advertising: Theories, methods and practices. 2019; 19: 127-141.
44. Munoz EM. Do we know what we eat? a nutritional perspective. Em J. A. Bartrina, & C. Perez-Rodrigo, Nutrionon Hospitalaria: Food, gastronomy and omics sciences - Meeting of Experts 2018; 61-65. Donostia-San Sebastian: Aran.
45. Nestle M. Food politics: How the food industry influences nutrition and health. 200 University of California Press.
46. Plank RE, Gould SJ. Health Consciousness, Scientific Orientation and Wellness. Health Marketing Quarterly. 1990; 65-82.
47. Proença RP. Food and globalization: Some reflections. Science and Culture. 2010; 62: 43-47.
48. Sanderson J. Health Conscious and Confused: Why 'Healthy' Trademarks Matter to Consumers. The University of New South Wales Law J. 2016; 658-683.
49. Sante publique France. Obtained from Nutri-Score: 2021; 28.
50. Scheer R, Moss D. Earth Talk Q&A. Retrieved from the Environmental Magazine: 2011; 23.
51. Corporate Ethics. J Marketing Management, 21: 267-290.
52. Shimp TA. Promotion Management and Marketing Communications. Dryden Press. 1993.
53. Simmonds G, Spence C. Thinking inside the box: How seeing products on, or through, the packaging influences consumer perceptions and purchase behaviour. Food Quality and Preference. 2016; 62: 340-351.

54. Stanhope KL, Havel PJ. Fructose consumption: potential mechanisms for its effects to increase visceral adiposity and induce dyslipidemia and insulin resistance. Curr Opin Lipidol. 2008; 19: 16-24.
55. The Nielsen Company. We Are What We Eat - Healthy Eating Trends Around the World. New York, USA: The Nielsen Company. 2015.
56. World Health Organization. Obesity: Preventing and managing the global pandemic. Geneva. 2000.