

**MASTER
MANAGEMENT**

**Can product placement promote
healthier lifestyles among children?
A study with 10 to 12 years old
Portuguese children**

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Dissertation

Master in Management



Supervised by

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Bibliographic Note

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Abstract

The World Health Organization estimated that, in 2016, children aged 5 to 19 years old, had a 18% prevalence of overweight (World Health Organization, 2020). This phenomenon aggravates when one in every three children with an excess of weight will keep that condition as an adult (Wang & Lobstein, 2006).

It is widely claimed that advertising food leads to increasing childhood obesity, once it sets children's food preferences and consumption patterns (Carter et al., 2011; Fleming-Milici & Harris, 2020; Radnitz et al., 2009). Product placement consists in placing a product in a storyline to subtly promote it (Auty & Lewis, 2004; Brown et al., 2017; Gupta & Lord, 1998). Commonly used by companies to target children (Naderer et al., 2019; Palmer & Carpenter, 2006; Ward et al., 2018), it is a strategy that frequently expose them to unhealthy foods (Naderer et al., 2019; Radnitz et al., 2009). But will it also work for healthy foods? This dissertation main goal is to measure the placement effectiveness on a healthy product placement, and test if it is as much effective as an unhealthy one.

We conducted an experimental study with 151 Portuguese students from the 5th and 6th grade. First, participants were exposed to a stimuli with a 2x3 design where the type of product (healthy vs non-healthy RTE cereal) and the type of placement (interactive placement vs. static placement vs. no placement) were manipulated. Then, we ask them to answer a questionnaire.

Results suggest no differences between the healthy and non-healthy cereal placements, indicating that this strategy can be just as effective on healthy cereals than on unhealthy ones. A paradigm shift is needed on this issue, so we hope that companies could use these findings to replicate this sort of stimuli on healthy products and, consequently, promote healthier lifestyles among children.

Keywords: Product Placement, Marketing, Breakfast Cereals, Healthy, Non-Healthy, Quantitative Study

Resumo

A Organização Mundial de Saúde estimou que, em 2016, as crianças entre os 5 e os 19 anos tinham uma prevalência de excesso de peso de 18% (World Health Organization, 2020). Este fenómeno agrava-se quando uma em cada três crianças com excesso de peso manterá essa condição como adulto (Wang & Lobstein, 2006).

É muitas vezes defendido que a publicidade alimentar leva ao aumento da obesidade infantil, uma vez que define as preferências alimentares e os padrões de consumo das crianças (Carter et al., 2011; Fleming-Milici & Harris, 2020; Radnitz et al., 2009). Colocar um produto, taticamente, num enredo é uma estratégia para, subtilmente, promovê-lo (Auty & Lewis, 2004; Brown et al., 2017; Gupta & Lord, 1998). É uma estratégia recorrentemente usada com crianças (Naderer et al., 2019; Palmer & Carpenter, 2006; Ward et al., 2018), expondo-as frequentemente a alimentos pouco saudáveis (Naderer et al., 2019; Radnitz et al., 2009). Mas também funcionará para alimentos saudáveis? O principal objetivo desta dissertação é medir a eficácia da colocação de um produto saudável, e testar se esta é tão eficaz como a de um não saudável.

Realizamos um estudo experimental com 151 alunos portugueses do 5º e 6º ano. Primeiramente, os participantes foram expostos a um estímulo com um design 2x3 onde o tipo de produto (cereais saudáveis vs. não saudáveis) e o tipo de colocação de produto (estática vs. Interativa vs. nenhuma) foram manipulados. Depois foi-lhes pedido que respondessem a um questionário.

Os resultados do estudo sugerem que não há diferenças entre as colocações saudáveis e não saudáveis dos cereais, indicando que esta estratégia pode ser tão eficaz em cereais saudáveis como em cereais não saudáveis. É necessária uma mudança de paradigma nesta matéria, pelo que esperamos que as empresas possam utilizar estas descobertas para replicar este tipo de estímulos em produtos saudáveis e, conseqüentemente, promover estilos de vida saudáveis entre as crianças.

Palavras-chave: Colocação de Produto, Marketing, Cereais de Pequeno Almoço, Saudável, Não Saudável, Estudo Quantitativo

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1. Introduction

The World Health Organization (WHO) estimated that, in 2019, 38.2 million children under the age of 5 were overweight or obese. Moreover, for older children, with ages comprehended between 5 and 19 years old, the prevalence of overweight was 18% in 2016 (World Health Organization, 2020). This epidemic triggers various risks like the risk for sleep apnea and type-2 diabetes, but also prompts other problems (Palmer & Carpenter, 2006) such as cardiovascular diseases, musculoskeletal disorders, and some cancers, all of them diseases that may concur for causing premature death (World Health Organization, 2020). One out of every three children with an excess of weight will keep that condition as an adult (Wang & Lobstein, 2006), making it imperative to focus our attention on this public health problem during childhood (Lobstein et al., 2004).

Among other causes, many authors claim that food advertising leads to increasing childhood obesity, once it sets food preferences in children and lead to consumption patterns (Carter et al., 2011; Fleming-Milici & Harris, 2020; Radnitz et al., 2009). Bhadoria et al. (2015) warned that we should not undervalue the marketing role in childhood obesity. In fact, advertising might not only influence immediate preferences but also create a misperception about an appropriate healthy lifestyle (Kunkel et al., 2004). From a managerial point of view, studies within this field have been contributing to a better understanding of the most efficient ways to target young audiences (Ward, 1974), individuals that are still in formation, with their experiences today affecting their future preferences (Dotson & Hyatt, 2005).

Children are exposed to marketing since they are 3 years old (Preston, 2016), when they may be still unable to defend themselves from the advertising pressure due to their development phase (Naderer et al., 2019; Rozendaal et al., 2010). According to Preston (2016) a society that allows this to happen, must invest widely and make every effort to understand this phenomenon. Therefore, studies of this phenomenon may draw political attention, which might result in a political issue discussion, and bring it to the political agenda.

Recent studies show that, more than ever kids are being exposed to media content (Brown et al., 2017). The technology available online, changed the way children play, interact, and communicate. Therefore, for the companies to keep up this trend they need to update their methods to deliver the message to young children (Mallinckrodt & Mizerski, 2007). There are many strategies to draw young children's attention for targeted products. Product

placement is a technique that consists in tactically place a product in a storyline to, subtly, present the product to the audience (Auty & Lewis, 2004; Brown et al., 2017; Gupta & Lord, 1998). This strategy, commonly used by companies to target children (Naderer et al., 2019; Palmer & Carpenter, 2006; Ward et al., 2018), often run on an implicit level, making the young consumer cognitive defenses powerless to defend themselves (Naderer, Matthes, & Zeller, 2018). In a product placement setting it is determinant to know the level of Character Product Interaction (CPI), which is how characters interact with the placed product, a topic that was considered not sufficiently investigated (Auty & Lewis, 2004; Naderer, Matthes, & Zeller, 2018).

The literature shows that children subjected to this strategy are frequently exposed to unhealthy foods (Naderer et al., 2019; Radnitz et al., 2009). However, there seems to exist a gap regarding the influence of media content on children's food preferences (Brown et al., 2017), especially in what concerns to healthy food options (Naderer, Matthes, Binder, et al., 2018). Furthermore, Ready-to-eat cereals, or RTE cereals, have a regular presence on breakfast tables, particularly when we consider children's choices for this meal (Vaala & Ritter, 2020) but this food category often contains added sugar or salt (Angelino et al., 2019). RTE cereals are also the predominant product advertised (Harrison & Marske, 2005; Palmer & Carpenter, 2006) and therefore it seems to exist an opportunity for the promotion of healthy options (Vaala & Ritter, 2020).

With all the information above in mind, and considering that the use of incentive messages, through marketing, is an effective strategy to promote healthier choices (Maimaran & Huang, 2019), this dissertation's main goal is to measure the placement effectiveness regarding healthy product promotion. To do so, we conducted a 2x3 experimental study where we manipulated the type of product (healthy vs non-healthy RTE cereal) and the type of placement (interactive placement vs. static placement vs. no placement) and tried to answer the following research questions:

- Will the healthy cereal product placement increase children's product recognition, evaluation, preference over other alternatives, and the likelihood to ask their parents to purchase the cereal?
- Will the results be higher in the Interactive placement?
- Will healthy cereal placement get as higher results as the unhealthy one?

- Will it make a difference in children's choices if they notice the placement intent?

This dissertation is divided into 8 sections, namely: Introduction, Literature Review, Methodology, Results, Discussion and Implications, Limitations and Further Research, References, and Appendices.

This first section, the Introduction, aims to explain the purpose of our work and the research questions we aim to answer. In the Literature Review section, we expose the pertinent concepts and conceptualizations previously addressed in the literature regarding this subject, as well as our hypotheses. To a proper understanding of our investigation, in section number three, we address the methodology applied on the empiric study. Subsequently, at section four, we present the results of our investigation. In the next section, we develop a discussion around the results presented in the previous section. Following the results discussion, we address, in section six, our study limitations and propose some guidelines for future research. Afterwards, we display the bibliographic references used throughout the dissertation and the Appendices, which contains all the content used in the experimental study.

2. Literature Review

This section of our study is divided into three subsections. Hence, the first subsection will begin by addressing the Childhood Overweight and Obesity problem. The second subsection will be focused on Food-Related Marketing Strategies used on Children, and, lastly, the third subsection will address the Consumer Socialization of children.

2.1 Children Overweight and Obesity

According to the World Health Organization (2020), obesity and overweight are characterized by excessive accumulation of body fat that might have negative impact on health. For adults, 20 years old or older, the rule states that the adult show overweight with a Body Mass Index (BMI)¹ greater than or equal to 25 kg/m² and indicates obesity in the case of a BMI above or equal to 30 kg/m².

For Children, the literature suggests that children under 5 years of age are considered overweight whenever their BMI is greater than two standard deviations above the WHO Child Growth Standards Median, and obese when the BMI is greater than three standard deviations above the WHO Child Growth Standards Median. For children between 5 and 19 years old, the BMI needs to be greater than one standard deviation above WHO Child Growth Reference Median for them to be considered overweight, and greater than two standard deviations above to be considered obese (World Health Organization, 2020).

Starting at an early stage of their lives, children are presented with a wide range of foods. These experiences with food variety will play a key role in their preferences during adulthood (Birch, 1980; Fitzgerald et al., 2010). Evidence shows that children prefer energy-dense and nutrient-poor foods (EDNP foods). This situation tends to aggravate once it is proved that children have a considerable amount of money, for their personal use, which is used mainly on the purchase of EDNP foods (Hartmann et al., 2017; Lent et al., 2015; Ogba & Johnson, 2010). Nevertheless, young people show a good understanding of what it means to have a healthy eating behavior (Fitzgerald et al., 2010). The problem may lay in what is the most important determinant for choosing food. Food preferences, and consequently product type, are more relevant than nutritional characteristics (Fitzgerald et al., 2010; Hartmann et al.,

¹ Body mass index, or BMI, is an index of weight-for-height used to classify overweight and obesity in adults. It is the ratio between the person's weight in kilograms and the square of his height (World Health Organization, 2020).

2017). In fact, children often show a “biological preference” for food and beverages that taste sweet or salty (Kraak et al., 2016).

Ready-to-eat (RTE) cereals are famous among children's choices, being regularly present on breakfast tables worldwide (Vaala & Ritter, 2020). Breakfast is one of the most important meals of the day once it is important to a balanced diet (van den Boom et al., 2006), and must contain at least milk, or any dairy product, fruit, and cereals, unrefined if possible (Angelino et al., 2019). Children who regularly consume cereals are more likely to have a suitable BMI (Albertson et al., 2003; Costa-Font & Revoredo-Giha, 2019). Also, a study found a direct relationship between breakfast quality and RTE cereals consumption (van den Boom et al., 2006). Nonetheless, breakfast cereals are a heterogeneous category, with much of the cereal options containing added sugar or salt. In this regard, a study with 371 products discovered that at least 25% of them had excessive salt quantities and that 13% had higher sugar content than the objectives proposed (Angelino et al., 2019). Those who show a concern with the effective promotion of health options should be aware of this breakfast trend, of the great prevalence of cereals (Vaala & Ritter, 2020).

The WHO estimated that, in 2019, 38.2 million children under the age of 5 were overweight or obese. Moreover, for older children, with ages comprehended between 5 and 19 years old, the prevalence of overweight was 18% in 2016. According to COSI², Portugal was able to reduce the values of overweight and obesity by 8,3%, between 2008 and 2019, in children with ages comprehended between 6 and 8 years old. While results are promising, the overweight and obesity rate, in 2019, was still high and remained stocked at 29.6% of all Portuguese children in that age range. Once overweight children are more likely to become overweight adults, with one-third of overweight children continuing to be it during adulthood (Wang & Lobstein, 2006), it is extremely important to make every effort to fight this epidemic during childhood (Lobstein et al., 2004).

Children’s food choices leading to overweight and obesity are influenced by multiple factors such as individual, social, physical, and environmental factors (Birch & Fisher, 1998; Fitzgerald et al., 2010). Eating is seen as a social experience, and other's experiences while

² Childhood Obesity Surveillance Initiative (COSI) Portugal is a system for monitoring the nutritional status of school-age children (between 6 and 8 years old), integrated into the Childhood Obesity Surveillance Study Initiative for Europe (COSI/OMS Europe).

eating might serve as a model for our personal choice. Children, in particular, are heavily influenced by their friend's choices, as well as the model's choices, that can be family or not (Birch, 1980; Birch & Fisher, 1998). Actually, some reports state that children's snack consumption has a positive correlation with the snacks consumed by their parents, proposing that modeling has an impact on children eating habits (Radnitz et al., 2009). Also, despite reduced portions provide better sensory pleasure (Cornil & Chandon, 2016), portion and package size influence children's decisions (Rolls et al., 2000). Then a bigger plate, or glass, might increase children's energy consumption at lunchtime (Hetherington et al., 2018).

In addition, factors that influence children's decisions as well as other causes for this health condition among children are diverse and widely studied. Although genetics might seem to be a direct cause for the increase in childhood obesity, it is responsible for less than 5% of childhood obesity cases. The same applies to the Basal metabolic rate³, which has not a major responsibility for the rising values in this epidemic (Anderson & Butcher, 2006). Furthermore, the consumption of fast food is regularly linked to the increasing values in childhood obesity, yet it is difficult to find a causal relationship between obesity and fast-food consumption (Bhadoria et al., 2015). On the opposite, sugary beverages appears to be one of the factors for overweight (Anderson & Butcher, 2006). Also, food is often seen as a reward leading to unhealthy habits (Budd & Hayman, 2008). Moreover, the portion size, rising over the years is seen as a relevant cause for overweight, since it increases caloric consumption determining their nutritional status (Maimaran & Huang, 2019). Children being more sedentary and leaving less time available to practice physical activity should also be considered (Bhadoria et al., 2015).

Besides these factors, a considerable amount of scientific evidence concludes that promoting food, throughout advertisement, is a major contribution to childhood obesity. Children's preferences regarding food are distorting when food is promoted, as well as consumption patterns (Brown et al., 2017; Carter et al., 2011; Fleming-Milici & Harris, 2020; Harris et al., 2013). That being said, and as Bhadoria et al. (2015) framework indicates, the marketing role should not be underestimated in this matter, as we will see in the next section.

³ Basal metabolic rate is the body's energy expenditure while resting (Bhadoria et al., 2015).

2.2 Food-Related Marketing Strategies used on Children

Advertising to children was slowly introduced by 1950's in the television. Young targets arouse the interest of marketing specialists once they represented a potentially profitable market segment (Palmer & Carpenter, 2006). Through the years evidence shows that food-related advertising affects consumption, in particular among children whenever targeting them with unhealthy foods (Folkvord et al., 2017).

Strategies made to persuade children start, as expected, in the company's effort to make children recognize the brand. Organizations that aim to target children often try to build up their brands with logos, brand mascots, or characters easier to be identified, recognized, and remembered by younger consumers (Connor, 2006; De Veirman et al., 2019; Elliott, 2012). In fact, Preston (2016) found this method effective with preschoolers capable of recognizing the brands that were advertised. Connor (2006) underlines this stating that the brand goal, in some cases, is not necessarily to promote their products but to build brand loyalty. The rationale used by companies, in this case, is that the sooner children are aware of the brand, the stronger will be the brand loyalty over the years. Companies use these strategies quite often, especially food and beverage companies, appealing to brand awareness and loyalty with a focus on taste, fun, or happiness (Ward et al., 2018). Ultimately, previous research on brand mascots or characters show that this strategy is used mainly on food and, as a result, children eating habits are been shaped leading to high consumption of EDNP foods (De Veirman et al., 2019).

2.2.1 Packaging

One of the first communications made by a brand to its target is the product package. It is used as a marketing tool, pointing product features and attributes, and is most frequently used in products labeled as unhealthy foods (Mehta et al., 2012). Strategies, such as fun or taste, are also used quite often on the packaging to increase the likelihood to purchase by young targets (Elliott, 2012; Hebden et al., 2011; Ogba & Johnson, 2010). Actually, a study confirmed that food with a McDonald's branding on the package is preferred when compared with generic packaging (Ward et al., 2018).

The presence of these strategies in unhealthy food is more frequent than in healthy food (Hebden et al., 2011; Mehta et al., 2012). Hebden and her college's study found that of all 352 food and beverages with characters on the package, 74% were related to unhealthy items.

On those items, they found chocolate, high-fat/high-sugar spreads, snack food, breakfast cereals, cereal bars, and noodles (Hebden et al., 2011).

Advertising professionals recognize the importance of appealing food packaging to persuade children and make them purchase the product (Palmer & Carpenter, 2006). As we discussed previously, familiar logos, brand mascots, or characters lead to better brand recognition (Connor, 2006; De Veirman et al., 2019). However, the use of familiar characters on the product packaging is also common, especially in pre-school children (De Veirman et al., 2019; Hebden et al., 2011). A study conducted by the latter in 2011 provided evidence that when familiar characters were part of the package, preschoolers were more likely to ask their parents to purchase the product, when compared with packages without the familiar characters (Hebden et al., 2011). Elliott's (2012) study, addressing packaging features, is consistent with these findings. Of all packages in the sample, 86% had a cartoon image on the package front, typically representing an animal or a child. Besides, 15% of the sample brands used games or any kind of activity to catch the children's attention. Also, 3 in every 10 products contained a game in the package back. Coloring the package with the right color is also of paramount importance for both attract attention and generate expectations. On top of children's preferences are bright colors especially in beverages, cereals, and biscuits (Angka et al., 2020; Elliott, 2012; Grimes & Doole, 1998).

Ogba and Johnson confirmed previous evidence that suggested a positive correlation between food packaging and children's preferences. They also confirmed the use of model characters to promote the product and make the children request permission to purchase it. Also emphasizes that this occurs especially with unhealthy foods, such as cereal and snacks (Ogba & Johnson, 2010).

2.2.2 Television Advertising

The preferred channel for companies to catch children's attention is television. A study conducted in 2017 showed that children with ages comprehended between 2 years old and 11 years old watch, on average, more than 11 food advertisings on television per day. Moreover, it was estimated that 72% of those advertisements were considered unhealthy categories such as fast-food restaurants, cereal, candy, snacks, and sugary drinks (Harris et al., 2017)

In fact, a study from Connor (2006) conducted in three different channels (Disney, Public Broadcasting Service (PBS), and Nickelodeon), showed that Disney had 9 advertisements, all from McDonald's and all targeting children, on PBS 60% of advertisements were food-related and 59% of them were aimed at children and, finally, on Nickelodeon 21% of advertisements were food-related and 54% of them were aimed at children.

From a nutritional point of view, advertising on television is heavily associated with the increase of preference, and consumption, of EDNP products (Brown et al., 2017). Predominating in the television advertising content, aimed at children, is the fast-food industry (Harris et al., 2013) but among all types of food, breakfast cereals are the predominant product advertised (Harrison & Marske, 2005; Palmer & Carpenter, 2006).

On all these food advertisements, Connor (2006) study indicates that fun is used with appealing purposes, on average, in 82% of all food-related advertising aiming children, being the most used appeal to children of the three (taste, fun, or happiness) suggested by Ward et al. (2018)

2.2.3 Advergames

Since 1993 literature alerted us that traditional television advertising was losing the capability to deliver an effective message. Mostly whenever advertising specialists faced a younger target, the need to find effective alternatives of communication was emerging (Secunda & Israel, 1993). The technology made available on the Web, changed the way children play and communicate. To keep up with these changes, companies needed to update their methods to deliver the message (Mallinckrodt & Mizerski, 2007).

Kids are exposed to media content as they were never in the past (Brown et al., 2017), and another famous way to incorporate advertising on media is using advergames. The advergame is an online game where the brand is incorporated in the playing action. By doing so the company provides the player an interactive and innovative way to communicate their message (Gross, 2010; Vanwesenbeeck et al., 2017). An advergame can be played on a console, a computer using a CD, or online (Mallinckrodt & Mizerski, 2007). In fact, by 2020 advergames emerged and are an effective way to catch target attention and deliver brand messages, using fun and entertainment (Sung & Lee, 2020).

The use of advertising on games is considerably superior to children, rather than to adults. The main reason advergames target children the most is because they are more susceptible

to persuasive intent, as we already discussed in this literature review (Folkvord & van 't Riet, 2018). The majority of advergames choose a simple design and a simple game to be played (Vanwesenbeeck et al., 2017). When playing an advergame children have two things to process, the game and the advertising message. Aiming to get the higher score possible, the main thing to process is the game, making it difficult to process the advertising message and intent (Vanwesenbeeck et al., 2017). That is why this strategy is commonly named *immersive advertising* (Mallinckrodt & Mizerski, 2007). Additionally, it was also discovered that protective messages, showed at the beginning of a game, do not reduce the energy intake of children (Folkvord et al., 2017).

In 2007 a study took place to investigate the preference changes after playing an advergame in different age groups. One of the main conclusions was that those who played the advergame choose the cereals, one of the unhealthy options, more regularly than children in the control group, with no contact with the game (Mallinckrodt & Mizerski, 2007). Another study, conducted in 2017, tried to investigate this attitude change and the purchase intention change after playing an advergame, where 69% of all respondents showed a positive attitude change towards the brand. In other words, they changed the evaluation of the brand for a positive one (Vanwesenbeeck et al., 2017). Another study in 2017 with children from Spain and The Netherlands compared the children's behaviour after playing a food-related advergame or a non-food-related advergame. Findings showed that both children, Spanish and Dutch, ate more caloric snacks after playing an advergame with food advertising (Folkvord et al., 2017). More recent findings (Smith et al., 2020) support the previous ones. In this new study, it was proved that the persuasive intent displayed on advergames, especially on the ones that incorporated the advertising in the game experience, influence children to select unhealthy food alternatives. Whenever the game did not promote the unhealthy snack, only a minority of children opted for its consumption. Nevertheless, another study showed that, when exposed to healthy rewards vs unhealthy rewards, the healthy content of the game induced children to choose more healthy options after playing the game (Dias & Agante, 2011). Thus, it is important to see if the impact of media on children is exclusive of unhealthy foods or if it also exists in healthy food, and consequently can be used to influence children for taking better food options/choices.

2.2.4 Media Product Placements

From a very young age television becomes part of children's day-to-day life. Children aged 1 or 2 years old watch television on a regular basis (Palmer & Carpenter, 2006). Product placement is a technique that consists of tactically placing a product in a storyline to, subtly, present the product to the audience (Auty & Lewis, 2004; Brown et al., 2017; Gupta & Lord, 1998). Beyond television advertising and advergames, product placement in movies or television shows, seen by children, is a common practice for companies who target children (Naderer et al., 2019; Palmer & Carpenter, 2006; Ward et al., 2018). Product placement was defined, early in 1993, as the integration of products, or services, in motion pictures with the return on cash fees. The first record we have of this technic being used dates back to 1945 when in a Warner Bother's movie Joan Crawford noticeably drinks a Jack Daniels whiskey (Secunda & Israel, 1993).

This strategy is very effective, and perhaps one of the biggest successes is the E.T movie, from 1982, where Reese's Pieces was the product placed in the movie. The product placement resulted in an increase of 65% in sales within 30 days after the movie premier (Gupta & Lord, 1998). Driving our attention to children, we have a great example of the movie Smurfs, where M&M's are highly placed. In the plot, the character literally fell in love with the candies (Naderer, Matthes, & Zeller, 2018). A study addressing the use of product placement in the most successful movies in Germany concludes that movies targeting all ages and children up to 6 years old contained more placements than movies targeting children older than 12 years old. Plus, found that comedies were the movie genre with more placements since they reinforce the positive association with the brand. In contrast, fantasy movies were the less probable to be used for product placement purposes (Naderer et al., 2019). Among food placements, flavor, fun, and taste dominate the appeals used by the advertisers. Breakfast cereals product placements commonly used the flavor and taste appeal, while beverage and snack placements resort to fun and taste (Palmer & Carpenter, 2006).

Previous research on this matter demonstrates brand placement efficacy. Product placement leads to higher rates of product recognition and consumption among children, compared with the rates on individuals who had not seen the media content (Auty & Lewis, 2004; Naderer, Matthes, & Zeller, 2018). However, it is important to state that recognition memory develops earlier than recall memory, considered to be developed at 7 years old (Rosado & Agante, 2012). Moreover, Russell and Stern (2006) observed that people who identify with

the character endorsing the product usually will accept the character evaluation of the product and make it their own. A study conducted with food items concludes that children exposed to food-related placement, in a movie, were more probable to prefer the snack placed in the movie than children not exposed to the product placement in the movie previously watched (Brown et al., 2017). Also, children have a considerable impact on their parent's purchase decisions (Naderer et al., 2019), and studies highlight that, for instance, when a package contains a familiar character endorsement, children's are more likely to ask their parents to purchase the product (Hebden et al., 2011). It can be interesting to understand if the same applies to product placement. Furthermore, when discussing Television Advertising, we alert for the predominance of advertising content from the fast-food industry (Harris et al., 2013). However, among all types of food, breakfast cereals are the prevalent category advertised (Harrison & Marske, 2005; Palmer & Carpenter, 2006). Supported by this literature, we formulated the following hypotheses:

H₁: Cereal placement positively affects the product recognition levels (**H_{1.1}**), the product evaluation levels (**H_{1.2}**), the product preference levels (**H_{1.3}**), the intention to consume the cereal (**H_{1.4}**), and the intention to buy it (**H_{1.5}**).

In this type of marketing strategy it is important to know how to distinguish different types of placements. Gupta and Lord (1998) proposed a two-dimensional approach, depending on the presentation mode of the placement and how prominent the placement is. Regarding the prominence level, the most prominent placements are the ones where the product is highly visible for the audience, usually at the center of the screen. Whenever a placement is meant to be subtler, the product is not shown as a visual focus, and usually are exposed for a small amount of time. Addressing the placement mode, Gupta and Lord proposed three types, Visual only (VIS), Audio only (AUD), and combined Audio-Visual (AV). VIS type only requires showing the product, AUD type is when the product name, or message, is simply mentioned. AV approach combines the two previous ones, showing and mentioning the product name, message, or features. This last placement mode, more interactive than the others, was found to be regularly used (Naderer et al., 2019). It was previous acknowledged in the literature that CPI-placements⁴, when a character interacts with the product, result in more visual attention from watchers than static⁵ ones, when the product only appears in the

⁴ Type of placement where characters interact with the product placed, endorsing it.

⁵ Type of placement where the product just appears, characters do not interact with it.

screen (Kamleitner & Jyote, 2013; Naderer, Matthes, & Zeller, 2018), because audio stimuli normally guide the individual visual attention to the characters (Naderer, Matthes, & Zeller, 2018). This effectiveness can be improved using the main character in the interaction with other characters and the product, or brand (Naderer et al., 2019).

After testing their hypothesis, Gupta and Lord (1998) concluded that choosing a prominent placement, with a central position on the screen and more screen time, results in a higher probability of the product being remembered. This is consistent with recent literature, where prominent placement in movies is the best way, and a highly used one, to place a product (Auty & Lewis, 2004). More recent studies show that to place the product in the plot might be a better option, especially with children as a target. Whenever a movie character interacts with a product the consumer might experience “second-hand” learning about the product, increasing its perceived value (Naderer et al., 2019). Considering the literature insights regarding types of placements, we formulate H_2 to test if an Interactive placement has a greater effect than a static placement:

H_2 : The effects that the placement has, are higher on an interactive placement, when compared with a static placement, concerning product recognition levels (**$H_{2.1}$**), product evaluation levels (**$H_{2.2}$**), product preference levels (**$H_{2.3}$**), the intention to consume the cereal (**$H_{2.4}$**), and the intention to buy it (**$H_{2.5}$**).

Children subjected to this strategy are frequently exposed to unhealthy foods, certainly more than the exposure of healthy ones (Fleming-Milici & Harris, 2020; Radnitz et al., 2009). This statement is consistent with Naderer et al. (2019) findings, where 21.7% of all evaluated product placements were snacks, beverages, restaurants, or supermarkets, with snacks and beverages predominating. However, a study found no differences in the way these different foods are placed (Radnitz et al., 2009). We already discussed that food preferences are more relevant than nutritional characteristics (Fitzgerald et al., 2010; Hartmann et al., 2017) and that children often show a “biological preference” for food and beverages that taste sweet or salty (Kraak et al., 2016). That might have been a good explanation for Cantor (1981) findings suggesting that unhealthy food advertising can overcome healthy food advertising when showed right after the healthy one. Then, we propose hypothesis three, expecting that the non-healthy cereal placement will have a greater result when compared with the healthy cereal placement.

H₃: The effects that the placement has, are higher on the ones placing a non-healthy cereal, when compared to the ones placing a healthy cereal, concerning product recognition (**H_{3.1}**), product evaluation levels (**H_{3.2}**), product preference levels (**H_{3.3}**), the intention to consume the cereal (**H_{3.4}**), and the intention to buy it (**H_{3.5}**).

2.3 Children Consumer Socialization

Five decades ago, researchers started to look at children from a different perspective, certainly with more interest as a consumer (Ward, 1974). Children's role as consumers starts at an early stage of their life (Ekström, 2006), even just as a passenger in a shopping cart at a grocery store (John, 1999).

2.3.1 Children Consumer Socialization

Ward, in 1974, was the first to define consumer socialization “as processes by which young people acquire skills, knowledge, and attitudes relevant to their functioning as consumers in the marketplace” (Ward, 1974, p.2). John (1999), proposes that consumer socialization should be looked as a series of stages that catch the significant changes between preschoolers and adolescents.

Ekström (2006) states that nowadays the phenomenon of children becoming consumers are happening earlier than in past generations. The marketing strategies used by all sorts of companies are the reason for this to happen sooner. As a result, children become aware younger and despite their low, almost insignificant, income children have a considerable impact on family purchases (Mau et al., 2014). Notwithstanding the conceptualization we stated until this point, the transition to an adult takes longer than literature previously expected, with more education and delay to form a family. That being said, socialization should focus more on how children form their identity as adults (Furstenberg, 2000). In agreement with Furstenberg's point of view, Ekström (2006) defends that consumer socialization should be seen as a process throughout a lifetime.

The stages referred to in the second paragraph occur during cognitive and social developments through childhood. Cognitive improvements, as children become older, contribute widely to information processing and decision-making skills (Ginsburg & Opper, 1988; Roedder, 1981). Within the social perspective, the more relevant issue is the social perspective-taking that allows children to see other perspectives further than their own. Gaining this capability is important to improve purchase influence and negotiation skills

(Selman, 1980). Then, John (1999) divided her framework into three stages, perceptual stage (3 years old to 7 years old), analytical stage (7 years old to 11 years old), and reflective stage (11 years old to 16 years old). In fact, the major critics of advertising directed to young targets are policymakers, parents, and consumer advocacy groups, claiming the cognitive development argument. They argue that children have fewer capabilities to defend themselves from advertising attempts, once they are cognitively not as developed as adults who properly understand the advertising intent (Naderer et al., 2019; Rozendaal et al., 2010), as John explains on her framework.

The perceptual stage (3 to 7 years old) is characterized by perceptual features, with a unidimensional focus and an egocentric perspective, as expected once children are not yet sufficiently developed on a social level (John, 1999). One of the most common issues regarding persuasion intent is the children capability to distinguish between commercials and programs (Preston, 2016; Rozendaal et al., 2010). When kids reach the age of 5, during the first stage, they are capable of distinguish between these content (Butter et al., 1981; Preston, 2016).

In the analytic stage (7 to 11 years old), children tend to look at more than one dimension, focus on more than two attributes, and understand other perspectives (John, 1999). Preston (2016) alerted that despite children show the capability for distinguish both contents quite early, in practice it might not be that simple in what concerns to their responses to marketing communication attempts. As a matter of fact, children usually do not learn the difference until they have 7 or 8 years old, looking at advertising content as entertainment or as a way to get information (Butter et al., 1981). This lack of cognitive capacity makes it difficult for children under 8 to defend themselves from marketing approaches (Carter et al., 2011; Kunkel et al., 2004; Moses & Baldwin, 2005; Rozendaal et al., 2010). These are expected findings, once children aged less than 7 or 8 years old show little, or none, capacity to see other perspectives. When they enter the analytical stage, this capability starts to develop, and the distinction becomes more clear (John, 1999).

By the time children reach 11/12 years old and arrive at the reflective stage, where all knowledge acquired so far is enhanced by the ability to reflect (John, 1999). Nevertheless, still in these ages, some authors identified a problem which has been the failure in the distinction between children's awareness of the selling intent and the awareness of persuasion intent (Wright et al., 2005). Carter et al. (2011) in their framework found that only a minority

of children aged 11 or 12 were aware of the persuasive intent of advertising. This is consistent with a previous study that found that 12 years old children are still not sufficiently developed on a cognitive level, having not acquired all required capabilities (Rozendaal et al., 2010). These findings contrast with John (1999) proposal that children in the reflective stage, 11 to 16 years old, understand advertising tactics and appeals. Moving forward to adolescent consumers, they are not seen as vulnerable once they already show the necessary cognitive capabilities to protect themselves (Spotswooda & Nairn, 2016). Prior literature show that knowing the intent of advertising improves the ability to ignore or resist the messages embedded in it (Auty & Lewis, 2004).

Summarizing, children's protection regarding this matter has been widely studied. Even with some regulation developments, there are still gaps to be filled. More than twenty years ago John (1999) already stated that younger children are being manipulated and suggested that they are not prepared to defend themselves. Preston (2016) reinforced the need to better understand this phenomenon and what it implies in children.

2.3.2 Persuasive Intent Knowledge (PK)

As we previously showed, age is a determinant factor for the development of a consumer. For instance, literature suggested that despite been easy to distinguish the show content and the advertising (Preston, 2016), most children under 8 years old look at advertising as information content, not recognizing their persuasive intent (Carter et al., 2011; Kunkel et al., 2004; Moses & Baldwin, 2005; Rozendaal et al., 2010).

Usually, in the analytic stage when children have 4 or 5 years of age already distinguish between advertising and other content, but only at a perceptual level (Kunkel et al., 2004). In fact, Rosado and Agante (2012), highlighted the importance to distinguish recognition memory and recall memory, once recall memory is considered to be developed only at 7 years old. Moreover, Carter et al. (2011) in their framework found that only a minority of children aged 11 or 12 were aware of the persuasive intent of advertising, once they are not sufficiently developed at a cognitive level (Rozendaal et al., 2010).

Strategies such as product placement often run on an implicit level. Then, cognitive defenses that the young consumer might have are not enough to protect them from the implanted message created by advertisers. Actually, it was verified that the placement had the same effect in 14 or 15 adolescents and children aged 6 or 7 years old (Naderer, Matthes, & Zeller,

2018). This finding is consistent with previous literature indicating that despite older children present more developed cognitive capabilities (Rozendaal et al., 2010), processing the advertising is just a secondary task making it hard to comprehend the placement intent (Vanwesenbeeck et al., 2017).

Prior literature emphasize that knowledge of persuasive intent does not influence children's preferences, evaluation on the product, and choices (Mallinckrodt & Mizerski, 2007; Rifon et al., 2014). However, it was previously established that the activation of the persuasive intent knowledge led watchers to look to advertising more carefully (Friestad & Wright, 1994). Aligned with a more recent study from De Jans & Hudders (2020) exploiting the effect of advertising disclosures, we expect that participants with higher levels of persuasive intent knowledge will show higher levels of product recognition. Nevertheless, we expect that an activation of the persuasive intent knowledge will result in lower levels of product evaluation, product preference, intention to consume the cereal, and intention to buy it (Boerman & van Reijmersdal, 2020). Therefore, we establish hypothesis four:

H₄: Children's persuasive intent knowledge has a moderator effect raising the product recognition levels (**H_{4.1}**), decreasing product evaluation levels (**H_{4.2}**), decreasing product preference levels (**H_{4.3}**), decreasing the intention to consume the cereal (**H_{4.4}**), and decreasing the intention to buy it (**H_{4.5}**).

To finalize the literature review it is important to understand that attempts to restrict, or even ban, advertising attempts on children have not been effective (Maimaran & Huang, 2019), even with vast literature stating that they are more vulnerable to persuasive messages than adults (Mallinckrodt & Mizerski, 2007; Naderer et al., 2019; Naderer, Matthes, & Zeller, 2018; Rozendaal et al., 2010). The movie's market is not as regulated as other industries that contained advertising, as a consequence it is essential to investigate the product placements in movies aimed at children (Naderer et al., 2019). Regarding the CPI role as a media effect on children, it was considered not sufficiently investigated. Then, further studies about its role in brand memory, evaluation, or choice are of great importance (Auty & Lewis, 2004; Naderer, Matthes, & Zeller, 2018).

3. Methodology

This section intends to illustrate the chosen research methods. To do so we will address the method used to answer the investigation questions, the ethical and legal considerations required when developing an investigation with children, our sample constitution, the data collection process, the utilized stimuli, the reasoning beyond the questionnaire’s construction, and the software used to work on the collected data.

3.1 Method

Author(s)	Type of Work	Theme	Methodology	Sample
Brown, Callie L. Matherne, Camden E. Bulik, Cynthia M. Howard, Janna B. Ravanbakht, Sophie N. Skinner, Asheley C. Wood, Charles T. Bardone-Cone, Anna M. Brown, Jane D. Perrin, Andrew J. Levine, Cary Steiner, Michael J. Perrin, Eliana M. (2017)	Appetite Article	<i>“Influence of product placement in children's movies on children's snack choices”</i>	Experimental Study using Questionnaire at home, Post-movie questionnaires, and Focus Groups	114 children from North Carolina school district (9 to 11 years old)
Naderer, Brigitte Matthes, Jörg Zeller, Patrick (2018)	International Journal of Advertising Article	<i>“Placing snacks in children's movies: cognitive, evaluative, and conative effects of product placements with character product interaction”</i>	Experimental Study using Individual Interviews	363 children from eight schools in Austria (6 to 15 years old)
Matthes, Jörg Naderer, Brigitte (2015)	Journal of Consumer Behavior Article	<i>“Children's consumption behavior in response to food product placements”</i>	Experimental Study using Individual Interviews	121 children (6 to 14 years old)
Naderer, Brigitte Matthes, Jörg Marquart, Franziska Mayrhofer, Mira (2018)	International Journal of Advertising Article	<i>“Children's attitudinal and behavioral reactions to product placements: investigating the role of placement frequency, placement integration, and parental mediation”</i>	Experimental Study using Questionnaires at home (parents) and Individual interviews	130 children from a primary school in Australia (6 to 11 years old)
Uribe, Rodrigo Fuentes-García, Alejandra (2015)	Appetite Article	<i>“The effects of TV unhealthy food brand placement on children. Its separate and joint effect with advertising”</i>	Experimental Study using Questionnaires	483 children from Chile (with 9, 12, or 15 years old)

Table 1: Methodologies used by other Authors on product placement with children.

Looking at **table 1**, it becomes clear that the use of experimental research predominates in the previous studies on this matter. When choosing methodology, at the expense of a non-

experimental one, researchers can control extraneous variables and manipulating variables (Smith & Albaum, 2012). In other words, they design situations and manipulate variables to test hypotheses (Choen et al., 2007).

The use of experimental research usually results in quantitative research, or objective-based research. Then, facts are the unquestionable major objective once the analysis depends on impartiality. Consequently, no personal judgment should be done while analyzing data, characteristic of a qualitative approach (Smith & Albaum, 2012). When the objective is to evaluate the interference effects, experimental research seems to be the appropriate research model (Choen et al., 2007). Thus, and considering that our main objective is to measure the effectiveness of a healthy cereal placement on children, it seems to make perfect sense to use quantitative research and perform an experimental study. Doing so, we manipulated the initial context, the video content, and measured the effect with no personal judgments.

Another conclusion we made by analyzing **table 1** is that prior research used either individual interviews or questionnaires to collect the data. In fact, individual interviews was the preferred method, with just Uribe and Fuentes-García (2015) utilizing questionnaires as data collection method.

Author(s)	Type of Work	Theme	Methodology	Sample
Smith, Rachel Kelly, Bridget Yeatman, Heather Moore, Christopher Baur, Louise King, Lesley Boyland, Emma Chapman, Kathy Hughes, Clare Bauman, Adrian (2020)	Academy of Nutrition and Dietetics Article	<i>“Advertising Placement in Digital Game Design Influences Children's Choices of Advertised Snacks: A Randomized Trial”</i>	Experimental Study using Questionnaires	156 children recruited in Australia (7 to 12 years old)
Vanwesenbeeck, Ini Walrave, Michel Ponnet, Koen (2017)	International Journal of Advertising Article	<i>“Children and advergames: The role of product involvement, prior brand attitude, persuasion knowledge and game attitude in purchase intentions and changing attitudes”</i>	Experimental Study using Questionnaires	279 children (10 to 12 years old) in a classroom environment

Table 2: Methodologies used by other Authors on advergames with children.

Table 2 helped us to understand that, although not being regularly applied when doing an experimental design with product placement, questionnaires are a common data collection method in similar research on advergames. Smith et al. (2020) used questionnaires to measure

the attitudes to the tested brand, the children's awareness of advertising, the food choice, and the food consumption. Likewise, Vanwesenbeeck et al. (2017) used the same data collection method to measure the brand attitude, the purchase intention, the persuasion knowledge, and the attitudes towards the game. Both studies, consider similar measures to the ones we aimed to assess.

Prior research has shown concern about what children may know and are not able to verbalize, particularly in the recognition of persuasive intent (Macklin, 1987). Also, interviews add the challenge of carefully develop adequate questions, and getting unbiased and complete answers. Often, participants in an interview have no consideration to the question, delivering mechanical answers (Smith & Albaum, 2012). Also, with the pandemic situation, the questionnaires are the most suitable data collection method, once it involves less contact with participants, decreasing the contagion risk.

Ultimately, from a range of methods, quantitative research is more suitable for the present dissertation. Thus, we choose to develop an experimental study applying a questionnaire. Both the stimuli utilized in the experimental study and the questionnaire will be deeper clarified in the following sections.

3.2 Ethical and Legal Considerations

Once this study was developed with participants under 18 years old, our participants are considered children by UNICEF. Therefore, we needed to follow UNICEF international project, entitled “Ethical Research Involving Children”, guidelines (Graham et al., 2013). As such, we sent a consent letter to parents, or guardians, with the aim to explain the study and ask for their written consent (see **appendix 2**). Despite parents’ consent, the children's participation in the study was open to their option to participate. Thus, no children was forced to participate against their will, and they were informed of that option (Choen et al., 2007; Graham et al., 2013). Also, total confidentiality of their answers was properly explained at the beginning of the session.

In addition, we planned to perform the study in a public school, which we are legally obligated to request the Portuguese Education Authorities consent too. Although we made attempts to get their authorization to pursue the study, we, unfortunately, did not obtain their consent. The submitted document, with the relevant methodological considerations, can be consulted on **appendix 1**.

3.3 Participants

Given the fact that we aim to test the persuasive intent perception, it makes more sense to focus on older children. Then, we decided for children between the analytic and reflective stage, with ages comprehended between 10 and 12 years old (5th and 6th grades). Also, due to the rejection from the Portuguese Education Authorities, we had to find other ways to have access to children and therefore our participants were gathered from one private school and five after-school leisure activities and recreation centers. A total of 175 letters for parental consent were sent to parents. From these, we obtained 151 confirmations, representing a response rate of 86.29%. **Table 3** summarizes the composition of our final sample.

Age	Control Group	Group 1	Group 2	Group 3	Group 4	Totals
10	11	11	12	13	11	58
11	14	15	14	14	16	73
12	5	4	5	3	3	20
Totals	30	30	31	30	30	151

Table 3: Sample characterization.

The data collection process, respecting all the legal requirements, is explained in the next subsection.

3.4 Data Collection

A pre-test was performed with 3 children, two boys and one girl, with ages comprehended between 10 and 12 years old. In this task, no difficulties were noticed by the children in the questionnaire regarding its comprehension, so there was no need for adjustments. Furthermore, all participants in the test classified the video as “good”, describing it as “funny”, so no adjustments were done to the stimuli as well. The overall experience lasted, on average, 16 minutes, divided into 6 minutes for the initial and final explanations, and 10 minutes to watch the video and answer the questionnaire.

After the legal required parental consent, we went to the school and to the after-school leisure activities and recreation centers, to explain and describe the process in each class, or group of students on the after-school leisure activities and recreation centers. During this explanation, all the legal issues, above discussed, were clarified to the participants, such as their right to refuse to participate and the fact that all answers meant to be personal opinions and will not be, by any circumstance, judged, evaluated, or disclosed. Then, the class was divided into different groups. Thus, a portion of the class or group of students, were asked

to go to a designated classroom with access to computers, where the participants watched individually the video content (using headphones) and answered the questionnaire (on Google Forms). The other students remained in classroom, while the others were participating in the study.

The division of the class was made in a way to create homogeneous groups and was perceived as non-discriminatory by the children. Participants were randomly assigned to one of the experimental groups and the number of assigned participants at each time depended on the number of available computers. Ultimately, when all authorized students who wanted to participate took the questionnaire, we explained the study objective to the entire class.

3.5 Stimuli Design

As previously explained, we performed an experimental research manipulating two variables to evaluate the participant's responses. The manipulated variables, working as a stimulus to participants, were which cereal appears in the video and which type of appearance (or placement) the cereal had. In this subsection, we will address the rationality behind the cereal and video choices, and how the video was created.

3.5.1 Cereal Choice

The cereals choice was made by asking the professional opinion of three nutritionists, available in **appendix 5**. They were invited to classify a set of previously selected cereals between 1 and 12, in a document with cereals already divided between a healthy section (classification between 1 and 6) and a non-healthy section (classification between 7 and 12). Additionally, the document clarified that we were looking for an opinion considering a 10 to 12 years old children's breakfast, and a subsection dedicated to comments was left in both sections. The results can be found in the following table:

Cereal	Professional 1	Professional 2	Professional 3	Total
Nacional Zero	2	1	1	4
Weetabix	1	3	3	7
Corn Flakes Equilibrio	3	2	2	7
Kellogg's Corn Flakes	5	4	4	13
Kellogg's All-Bran	4	6	6	16
Special K Classic	6	5	5	16
Bolas de Chocolate	7	7	7	21
Nacional Cookie'z	11	8	8	27
Chocapic	8	10	10	28

Choco Cookies	12	9	9	30
Estrelitas	9	11	11	32
Lion	10	12	12	34

Table 4: Cereal's classification.

Table 4 shows that the “Nacional Zero” cereals had the lowest classification. So, according to the nutritionist’s classification, it seems that this cereal is suitable for the consumption by children with 10 to 12 years old. In this sense, we decided to use this cereal as our healthy option.



Figure 1: Healthy cereal choice: Nacional Zero.

Concerning the non-healthy cereals classification, the three nutritionists revealed more difficulties to rank the cereals. They acknowledged that all cereals in this section contain high levels of sugar and should not be considered suitable for children consumption. Quoting nutritionist Ana Rita: *"Therefore, within this categorization, cereals are all very identical."* Consequentially, and to assure the choice of two kinds of cereal identically known by children, and the use of the same brand “Nacional”, we decided to use cereals “Nacional Cookie’z” as our non-healthy option.



Figure 2: Non-healthy cereal choice: Nacional Cookie’z.

3.5.2 Video Contents

We used animated video contents, created on the website [Powtoon](#), also used in a similar study (Naderer, Matthes, Marquart, et al., 2018). Aiming to address the discrepancies between a Nacional Zero and a Nacional Cookie'z placement effectiveness, we needed to expose children to different stimuli. Also, one of our objectives laid in the effect of an Interactive placement when compared to a Static one. Therefore, 5 video contents were produced (see **table 5**).

It is important to highlight that, considering all we discussed in the literature section, when we addressed an Interactive placement, we were mentioning an audio-visual prominent placement, and whenever discussing a Static placement we were referring to a visual-only prominent placement. Subsequently, the only difference laid in the interaction the character had, or had not, with the product.

Two studies with similar characteristics decided to create a 7 minutes animated video (Matthes & Naderer, 2015; Naderer, Matthes, & Zeller, 2018). Moreover, La Ferle and Edwards (2006) discovered that from 573 appearances of product placements on storied programs, 80.6% lasted no more than 5 seconds. More recently, Naderer, Matthes, Binder, et al. (2018) conducted a study where they exposed children to a 7 minutes video with 7 product placements on a total of about 50 seconds of product exposure.

Based on literature, we decided to produce five video stimuli with a total duration of 5 minutes each, a duration considered to be long enough to catch the participant's attention (Mallinckrodt & Mizerski, 2007).

The first video produced was the one used on the control group. This video worked as a starting point to the four remaining ones, once it had no cereal placed. Then, this video was replicated two times for Experimental Groups 1 and 3, where we incorporated the Nacional Zero and the Nacional Cookie'z cereals, respectively. So far, the video script remained the same since the placements on these experimental groups were Static. Lastly, the videos from Experimental Groups 1 and 3 were duplicated once each for Experimental Groups 2 and 4, respectively. In these last videos, the script changed on the two scenes with placements, to include the interaction between characters about the cereal.

Regarding the exposure time and the cereals position on the screen, they were equal in all four experimental groups. The only difference between the Interactive and Static Placements occurs in the script, as we explained in the last paragraph. To conclude, all four experimental groups contained placements with two appearances, resulting in a total exposure time of 34 seconds, as the following table summarizes. Also, all utilized stimuli are presented in **appendix 4**.

Group	Type of Cereal	Type of Placement	Number of Appearances	Exposure Time	Sample Size (n)
Control Group	---	---	---	---	30
Experimental Group 1	Healthy	Static	2	34 sec	30
Experimental Group 2	Healthy	Interactive	2	34 sec	31
Experimental Group 3	Non-healthy	Static	2	34 sec	30
Experimental Group 4	Non-healthy	Interactive	2	34 sec	30

Table 5: Video content characteristics.

3.6 Variables and Measures

3.6.1 Parents Questionnaire

Along asking for parental consent, a few questions were also made to the parents or guardians, as you can see in **appendix 2**. When developing an investigation with children we must only include children when the knowledge cannot be obtained by other means (Graham et al., 2013). Therefore, we asked parents their children's age and gender, besides the following parameters:

Television exposure time

To measure the exposure effects that media might have on our participants we needed to know how much they are, usually, exposed to television. We decided to ask parents two different questions, "How many hours, approximately, your child watch television on a school day?" and "How many hours, approximately, your child watch television on a weekend day?" (Dixon et al., 2007). The possible answers were "None.", "Less than 1h.", "Between 1h and 2h.", "Between 3h and 4h.", "More than 4h."

We could have used a similar approach to Mallinckrodt and Mizerski (2007) framework, by asking the average hours of television the child watched on the last seven days. However, we decided not to use this approach once on a school day children spend a considerable amount of time outside their homes, compared to weekends. Also, by asking an average per day, instead of per week, we made parents' task easier, by not having to do any computation.

Cereal consumption frequency

We asked parents “How many times, on average, does your child eat cereals at breakfast, per week?”, with the possible answers being “None.”, “1 to 2 times.”, “3 to 4 times.”, “5 to 6 times.”, “Every Day.”. This question was also adapted from Mallinckrodt and Mizerski (2007), although we intended to obtain the average weekly cereal consumption, as an alternative to the cereal consumption of the last seven days like they did.

Cereals choices for breakfast

The same logic applied above can be applied in this parameter. Analyzing the answers of a child that regularly eats Nacional Zero or Nacional Cookie’z, we cannot conclude that the stimuli produced any effect on their preferences or choices. To solve this issue, we asked parents “Which cereals does your child eat?”, where the possible answers were “None.”, “Lion.”, “Nacional Zero.”, “Weetabix.”, “Nacional Cookie’z.”, and “Other.” with a space to answer which cereal they usually ate. This question was also utilized by Mallinckrodt and Mizerski (2007) in their advergames study.

3.6.2 Children Questionnaire

Previous studies on this matter frequently used 5-point Likert scales (Naderer, Matthes, & Zeller, 2018; Panic et al., 2013; Rifon et al., 2014; Smith et al., 2020), however questionnaires to children must be simple and as short as possible (Naderer, Matthes, & Zeller, 2018). Likert scales should be applied to children with caution, once the majority might have difficulties answering to number-based Likert scales, instead of word-based ones (Mellor & Moore, 2014). Therefore, our children’s questionnaire had logos or images supporting the text, for a clearer questionnaire comprehension (see **appendix 3**).

Notice that as we previously discussed in the Ethical and Legal Considerations section, no children were obligated to participate in the study or answer all the questions. So, all the questions had an extra answer option: “I don’t want to answer.”.

To properly apply the questionnaires, we needed to establish proper parameters to answer our research questions. As our hypotheses indicates, we aimed to measure product recognition, evaluation, and preference, also purchase intention, to buy, and the knowledge of persuasive intent. Then we established the following parameters:

Product Recognition

To focus on product recognition, we asked children to indicate, among various options, which cereals they recognize. Then, working as a manipulation check, we asked “Have you seen this cereal in the movie?” regarding the cereal placed in the respective experimental group, represented in the questionnaire with a picture. The options to answer, also used by Naderer, Matthes, and Zeller (2018), were “Yes.” or “No.”

Product Evaluation

To evaluate how the placement might influence children's evaluation of the product we asked, “What do you think about their taste?”, and “Are they fun or boring?”. These questions were adapted from Smith et al. (2020) and Naderer, Matthes, and Zeller (2018), to address product evaluation. Using a semantic differential scale, the anchors were “Not tasty at all.” and “Very tasty.”, “Very boring” and “Very fun”, respectively.

Product Preference

Regarding the product preference, we asked the children “Which of these cereals do you like the most?”. The possible answers were “Lion.”, “Nacional Zero.”, “Weetabix.”, “Nacional Cookie’z.”, and “I don’t know.”. This measurement was previously used by Mallinckrodt and Mizerski (2007) to measure product preference, in a study with advergames as the stimulus.

Intention to Consume

Inspired by Smith et al. (2020) framework, we started by asking "Would you like to taste these cereals?". The response options followed a 5-point animated Likert scale, where the options were “Certainly not!”, “I don’t think so.”, “I don’t know”, “I think so.”, or “Certainly!”. Then we asked participants “If you could choose one of these to eat, which one would you choose?”, with a hamburger, a salad, a bar of chocolate, and the cereal place illustrated, and with “I don’t know.” as an option. Supported by Mallinckrodt and Mizerski (2007) study, in doing this range of questions we will understand if the stimuli had some influence over other eating possible choices, rather than only cereals.

Intention to Buy

The purchase intention was measured by asking children “Will you ask your parents to buy this cereal?”, a question also used by Panic et al. (2013). Therefore, we measured the intent to ask to purchase the cereal, using a 5-point animated Likert scale with the anchors “Certainty not!” and “Certainly!”, together with an animated picture.

Knowledge of Persuasive Intent

The last measurement we did was about the knowledge of persuasive intent. This measurement was done in two parts: the knowledge of the advertising source, and the knowledge of the persuasive intent itself (Panic et al., 2013).

First, we asked the participants “Who do you think produced this video?”, the answers were, “Nacional”, “The teacher.”, “The three friends”, “The investigator.”, and “I don’t know.”. The only correct answer was “Nacional”.

Regarding the persuasive intent, adapting Rifon et al. (2014) procedure, we asked children “What do you think they want you to do?”. The answers were “Eat healthier.”, “Play.”, “Watch more videos like this one.”, “Buy these cereals.”, and “I don’t know.”. The only correct answer was “Buy these cereals.”, exemplified by a child putting the cereal package on a shopping cart.

Concluding, all questionnaire content used in our investigation is available in the appendices. The questionnaires applied to children had some differences between groups. Thus, the questionnaire used on the control group is available in **appendix 3.1**, the one used on the experimental groups 1 and 2 in **appendix 3.2**, and the one used on experimental groups 3 and 4 in **appendix 3.3**.

3.7 Data Analysis

The data collected was analyzed on IBM SPSS Statistics 26. This is one of the most used statistical programs when studying the social sciences field, and widely suitable when developing investigation with questionnaires. The biggest advantage it offers is that enables users to analyze quantitative data in very distinct manners, at a fast pace (Bryman & Cramer, 2002).

Every analysis was conducted considering a 95% confidence interval. The nominal data (variables *product recognition*, *product preference*, and *intention to consume over other products*) were presented with the answers proportion. Alternatively, the ordinal data (variables *product evaluation*, *intention to consume*, and *intention to buy*) were presented with median and interquartile range: median (lower range value – upper range value). Pearson Chi-square ($\chi^2(1)$), Likelihood Ratios (LR), Mann-Whitney (U), and Kruskal-Wallis (H) tests were conducted to test our hypotheses. The first test was applied with either *product recognition*, *product preference*, or *intention to consume over other products* as the dependent variable, but on some occasions the Likelihood Ratio was applied. The Mann-Whitney test (or the Kruskal-Wallis test, depending on the hypothesis) was applied with *product evaluation*, *intention to consume*, or *intention to buy* were the dependent variable.

Children not exposed to any placement answered questions regarding both cereals (healthy and non-healthy), however children exposed to a given placement only answered questions about the cereal placed (healthy or non-healthy). Consequently, it was not possible to test differences between the group of participants not exposed to a placement and the group of participants expose to any type of placement. As an alternative, towards testing **H₁**, we conducted tests with *Group* as the independent variable comparing the participants exposed to no placement with the ones exposed to a healthy placement, and comparing the participants exposed to no placement with the ones exposed to an unhealthy placement. Hence, the following comparisons were made:

- No placement vs. Health Placement → (No P vs. H P)
- No placement vs. Health Static Placement → (No P vs. H SP)
- No placement vs. Health Interactive Placement → (No P vs. H IP)
- No placement vs. Non-health Placement → (No P vs. NH P)
- No placement vs. Non-health Static Placement → (No P vs. NH SP)
- No placement vs. Non-health Interactive Placement → (No P vs. NH IP)

Towards testing **H₂** *Group* was also used as the independent variable, but we compared the group of participants exposed to a static placement with the group of participants exposed to an interactive placement (SP vs. IP). On **H₃**, also with *Group* as the independent variable, the comparison was between the group of participants exposed to a healthy placement and the group of participants exposed to a non-healthy placement (H P vs. NH P).

Our last hypothesis, **H₄**, utilized *Persuasive Intent Knowledge (PK)* as independent variable on the tests performed. Once participants were asked two questions underling persuasive intent knowledge, *Persuasive Intent Knowledge* variable was computed by summing the number of correct answer participants have given on those questions. Subsequently, participants with zero correct answers were classified with no persuasive intent knowledge, participants with one correct answer were classified with low persuasive intent knowledge, and the ones with two correct answers were considered participants with a high persuasive intent knowledge. To test our fourth hypothesis, we compared participants showing no persuasive intent knowledge with participants showing low persuasive intent knowledge and participants demonstrating high persuasive intent knowledge (No PK vs. L PK vs. H PK). To do so we applied the Kruskal-Wallis test.

4. Results

4.1 Sample Characterization

First it was important to analyze our sample characteristics, such as our participants gender and school year (used as proxy for age)

<i>Group</i>	Type of Stimulus	5 th grade	6 th grade	Total
Control Group	No placement	17	13	30
Experimental Group 1	Static Placement / Healthy Cereal	17	13	30
Experimental Group 2	Interactive Placement / Healthy Cereal	15	16	31
Experimental Group 3	Static Placement / Non-Healthy Cereal	17	13	30
Experimental Group 4	Interactive Placement / Non-Healthy Cereal	17	13	30
Total		83	68	151

Table 6: Descriptives of school year, per group.

As previously indicated, our investigation focused on 151 responders, 83 participants were from 5th grade (55.0%), and only 68 from 6th grade (45.0%), explaining why there were more participants with 10 or 11 years old (86.8%) and only 20 participants with 12 years old (13.2%) (see **table 30** on **appendix 6**). Additionally, 74 were male students (49.0%) and 77 were female students (51.0%) (see **table 31** on **appendix 6**).

It was also important to understand the awareness level about our stimuli, in other words to comprehend if children notice the cereals placed on the video. To do so, we asked children on the experimental groups “Have you seen this cereal in the movie?”, and 97.5% of the 121 participants on the experimental groups had seen the cereal in the movie (see **table 32** on **appendix 6**). This result indicates that our stimuli was well created and placed, once it was widely noticed by the participants.

4.2 Reliability Test

Assessing the *product evaluation* category, throughout both cereals, we had two questions underlying each, so it was important to test our variables *product evaluation (Zero)* and *product evaluation (Cookie’s)* reliability. Performing a Cronbach’s Alpha Reliability Test, we found out that both variables had appropriate reliability, with values higher than 0.700.

Variable	Cronbach’s α
<i>Product evaluation (Zero)</i>	0.838
<i>Product evaluation (Cookie’s)</i>	0.721

Table 7: Reliability Assessment.

4.3 Homogeneity Test

All the descriptive data has been handled, as well as the reliability analysis on the *product evaluation* category. Thus, before testing our hypotheses, it was essential to test our sample homogeneity. Using crosstabs on SPSS, we conclude that the experimental groups and the control group did not differ significantly with respect to *School Year* ($\chi^2(1)=0.682$, $p=0.953$), *Gender* ($\chi^2(1)= 0.106$, $p=0.999$), and *Age* (LR=1.471, $p=0.993$).

Variable	Homogeneity Test
<i>School Year</i>	$\chi^2(1)=0.682$ $p=0.953$
<i>Gender</i>	$\chi^2(1)= 0.106$ $p=0.999$
<i>Age</i>	LR=1.471 $p=0.993$

Table 8: Homogeneity assessment on school year, gender, and age.

4.4 Cereals Consumption, Media Viewing Habits and Persuasion Intent Knowledge

Before analysing our hypotheses, we would like to present the media viewing levels and children’s consumption habits, as reported by their parents, such as the frequency they watch television on a weekly basis, their cereal eating frequency, and which cereal children eat.

According to the parents’ responses, most of the participants watch television for between 1 and 2 hours on a weekday (54.3%), and for more than 3h on a weekend day (53.6%) (see **table 33** and **table 34** on **appendix 6**).

Regarding the cereal consumption, according to the parents’ responses, the vast majority of our study participants ate cereals at breakfast at least once a week (75.5%), and 36 of all 151 children ate cereals 5 or more times during the week (23.8%) (see **table 35** on **appendix 6**).

Moreover, according to the parents’ responses, the participants do not vary much in the cereal they eat in the morning, once the majority only eat one or two different cereals throughout the week (71.5%). Among the 4 cereals asked to parents (Lion, Nacional Zero, Nacional Cookie’z, and Weetabix), Lion was the one with poorer results once only 7 children choose Lion for breakfast (4.6%). Nacional Zero results indicated that 11 participants eat the cereals for their breakfast (7.3%), while 8 eat Nacional Cookie’z (5.3%), and Weetabix was not reported to be used on any children breakfast (see from **table 36** to **table 40** on **appendix 6**). These results made us look even more carefully to the open answer given when parents selected the option “other”. In this answer we noticed that Chocapic was the cereal more referred, by parents, as children choice for breakfast (31.1%), and that CornFlakes

cereals were ate by 14 children (9.3%), confirming the tendency set by the 7.3% of participants which, according to their parents, eat Nacional Zero (a type of CornFlakes) (see **table 41** and **table 42** on **appendix 6**).

Despite not being consumed as much as other alternatives, Lion was the cereal with a higher recognition level (75.5%), followed by Nacional Cookie'z (53.0%) and Nacional Zero (31.0%). This high recognition level was one of the reasons we do not select Lion as our unhealthy option, even though it has been the one with higher classification by nutritionists, meaning that it was the least appropriated to a 10 to 12 years old children breakfast (see **table 43** to **table 46** on **appendix 6**).

Considering the questions regarding the knowledge of persuasive intent, only 9 participants got the two questions right (7.4%), and 51 got one of them right (42.1%). That being said, most of our participants do not possess full knowledge of the persuasive intent, both on the awareness of the source and the placement intent, once 61 of them did not get any of the questions right (50.4%) (see **table 49** on **appendix 6**).

4.5 Hypotheses Testing

4.5.1 Hypothesis 1

Our hypothesis 1 (**H₁**) suggest that the cereal placement positively affects the product recognition (**H_{1.1}**), the product evaluation (**H_{1.2}**), the product preference (**H_{1.3}**), the intention to consume the cereal (**H_{1.4}**), and the intention to buy it (**H_{1.5}**). On **table 9**, **table 10**, and **table 11** are, respectively, presented the proportions comparison of *product recognition*, *product preference*, and *intention to consume (over other product)*, between different groups. Medians for *product evaluation*, *intention to consume*, and intention to buy are shown at **table 12**. The test results on **H_{1.1}**, **H_{1.2}**, **H_{1.3}**, **H_{1.4}**, and **H_{1.5}** can be found at **table 13**.

Starting with *product recognition* (**H_{1.1}**), the proportion of subjects that recognized the cereal did not differ significantly between the group with no cereal placed and the groups with a cereal placed, either healthy or non-healthy. The test results, shown at **table 13**, indicates that the product placement did not increase the product recognition among participants, independently if the product placed is healthy or non-healthy ($\chi^2(1)=1.037$, $p=0.309$, and $\chi^2(1)=0.804$, $p=0.370$), therefore **H_{1.1} is rejected**.

<i>Healthy Cereal</i>	No Placement	Healthy Static Placement	Healthy Interactive Placement	Healthy Placement
Did not recognized	21 (70.0 %)	20 (66.7%)	16 (51.6%)	36 (59.0%)
Recognized	9 (30.0%)	10 (33.3%)	15 (48.4%)	25 (41.0%)
<i>Non-healthy Cereal</i>	No Placement	Non-healthy Static Placement	Non-healthy Interactive Placement	Non-healthy Placement
Did not recognized	16 (53.3%)	13 (43.3%)	13 (43.3%)	26 (43.3 %)
Recognized	14 (46.7%)	17 (56.7%)	17 (56.7%)	34 (56.7%)

Table 9: Proportion's comparison of product recognition between different groups.

The **product evaluation** ($H_{1.2}$) median scores were significantly higher on the groups exposed to a placement than on the group not exposed to a placement, as we can confirm on **table 12**. Nevertheless, no significant difference was noticed when participants were exposed to a non-healthy cereal static placement ($U=387.500$, $p=0.764$). Thus, **$H_{1.2}$ partially rejected**, on the condition of a non-healthy cereal statically placed.

Regarding **product preference** ($H_{1.3}$), globally, the proportion of participants that preferred the placed cereal over other cereals did not differ significantly between the group without any placement and the groups with a placement, either of a healthy or non-healthy cereal. However, differences were found on the Chi-square tests (see **table 13**) comparing the group of participants exposed to no placement with the group of participants exposed to a healthy interactive placement ($LR=4.278$, $p=0.039$). The proportion of participants preferring the healthy cereal was significantly higher when they were exposed to a healthy interactive placement (21.4%), compared to when they were not exposed to a placement (3.7%). Then, **$H_{1.3}$ is rejected**, except on the condition of a healthy cereal interactively placed.

<i>Healthy Cereal</i>	No P	H SP	H IP	H P
Did not preferred the cereal	26 (96.3%)	23 (88.5%)	22 (78.6%)	45 (83,3%)
Preferred the cereal	2 (3.7%)	3 (11.5%)	6 (21.4%)	9 (16,7%)
<i>Non-healthy Cereal</i>	No P	NH SP	NH IP	NH P
Did not preferred the cereal	15 (55.6%)	11 (47.8%)	15 (57.7%)	26 (53,1%)
Preferred the cereal	12 (44.4%)	12 (52.2%)	11 (42.3%)	23 (46,9%)

Table 10: Proportion's comparison of product preference between different groups.

Underling the **intention to consume** ($H_{1.4}$), the results from the Mann-Whitney tests displayed at **table 13**, show that the median scores for the intention to consume the cereal were not significantly different between the groups with no placement and the groups with placements, either healthy ($U=442.500$, $p=0.069$) or non-healthy ($U=638.000$, $p=0.595$) ones. Regarding the intention to consume (over other products), no significant differences were found on the proportion of subjects that choose the placed cereal over other products

between the group with no placement and the groups with a non-healthy placement ($\chi^2(1)=0.201$, $p=0.654$). Nonetheless, the proportions were significantly higher when the participant was exposed to a healthy placement (LR=8.645, $p=0.003$). That being said, **H_{1.4} is rejected**, except on the condition of a healthy cereal placed and confronted with products from other categories.

<i>Healthy Cereal</i>	No P	H SP	H IP	H P
Does not intend to consume	27 (100.0%)	19 (73.1%)	20 (74.1%)	39 (73.6%)
Intends to consume	0 (0.0%)	7 (26.9%)	7 (25.9%)	14 (26.4%)
<i>Non-healthy Cereal</i>	No P	NH SP	NH IP	NH P
Does not intend to consume	21 (77.8%)	20 (71.4%)	21 (75.0%)	41 (73.2%)
Intends to consume	6 (22.2%)	8 (28.6%)	7 (25.0%)	15 (26.8%)

Table 11: Proportion's comparison of intention to consume (over other products) between different groups.

To complete our results analysis over hypothesis 1, the median scores for the **intention to buy** (**H_{1.5}**) were significantly higher on the participants exposed to a product placement than on the ones exposed to no placement, either healthy (U=215.000, $p=0.011$) or non-healthy (U=343.000, $p=0.010$) ones (see **table 12**). However, no significant difference was found when participants were exposed to a healthy static placement (U=115.000, $p=0.240$). In this sense, **H_{1.5} is partially rejected**, on the condition of a healthy cereal statically placed.

Group	<i>Product Evaluation</i>		<i>Intention to Consume</i>		<i>Intention to Buy</i>	
No P <i>(healthy cereal)</i>	N=28	5.50 (5.00-7.75)	N=21	3 (3.0-3.5)	N=18	3 (2-3)
H SP	N=29	8 (7-9)	N=28	3 (3-4)	N=16	3 (3-3)
H IP	N=30	8.00 (6.75-9.25)	N=27	3 (3-4)	N=22	3 (3-4)
H P	N=59	8 (7-9)	N=55	3 (3-4)	N=38	3 (3-4)
No P <i>(healthy cereal)</i>	N=28	8 (7-9)	N=25	4 (3-4)	N=22	3.00 (2.75-3.00)
NH SP	N=28	8 (7-9)	N=28	4 (3-4)	N=21	3 (3-4)
NH IP	N=28	8 (7-9)	N=27	4 (3-4)	N=27	3 (3-4)
NH P	N=54	9.00 (7.00-9.25)	N=55	4 (3-4)	N=48	3 (3-4)

Table 12: Medians for product evaluation, intention to consume, and intention to buy (H1).

	<i>Product Recognition</i>	<i>Product Preference</i>	<i>Product Evaluation</i>	<i>Intention to Consume</i>	<i>Intention to Consume (over other products)</i>	<i>Intention to Buy</i>
No P vs. H P	$\chi^2(1)=1.037$ $p=0.309$	LR=2.795 $p=0.095$	U=404.000 p<0.001	U=442.500 $p=0.069$	LR=8.645 p=0.003	U=215.000 p=0.011
No P vs. H SP	$\chi^2(1)=0.007$ $p=0.781$	LR=1.211 $p=0.271$	U=195.500 p<0.001	U=239.000 $p=0.199$	LR=11.084 p<0.001	U=115.000 $p=0.240$
No P vs. H IP	$\chi^2(1)=2.160$ $p=0.142$	LR=4.278 p=0.039	U=208.500 p<0.001	U=203.500 $p=0.057$	LR=10.751 p=0.001	U=100.000 p=0.004
No P vs. NH P	$\chi^2(1)=0.804$ $p=0.370$	$\chi^2(1)=0.044$ $p=0.835$	U=589.500 $p=0.096$	U=638.000 $p=0.595$	$\chi^2(1)=0.201$ $p=0.654$	U=343.000 p=0.010
No P vs. NH SP	$\chi^2(1)=0.601$ $p=0.438$	$\chi^2(1)=0.297$ $p=0.586$	U=387.500 $p=0.764$	U=306.500 $p=0.366$	$\chi^2(1)=0.292$ $p=0.589$	U=142.500 p=0.015

No P vs.	$\chi^2(1)=0.601$	$\chi^2(1)=0.025$	U=202.000	U=331.500	$\chi^2(1)=0.059$	U=200.500
NH IP	p=0.438	p=0.875	p=0.007	p=0.900	p=0.808	p=0.035

Table 13: Tests on differences between groups (H11).

4.5.2 Hypothesis 2

Our hypothesis 2 (H_2) proposes higher effects on the interactive placements for product recognition ($H_{2.1}$), product evaluation ($H_{2.2}$), product preference ($H_{2.3}$), intention to consume the cereal ($H_{2.4}$), and intention to buy it ($H_{2.5}$). On **table 14**, **table 15**, and **table 16** are, respectively, presented the proportions comparison of *product recognition*, *product preference*, and *intention to consume (over other product)*, between different types of placements. Medians for *product evaluation*, *intention to consume*, and intention to buy are shown at **table 17**. The test results on $H_{2.1}$, $H_{2.2}$, $H_{2.3}$, $H_{2.4}$, and $H_{2.5}$ can be found at **table 18**.

Beginning with the hypothesis testing on *product recognition* ($H_{2.1}$), the Chi-square test indicates that the proportion of participants recognizing the placed cereal did not differ significantly between different types of placements (see **table 18**), consequently $H_{2.1}$ is **rejected**.

<i>Product Recognition</i>	Static Placement	Interactive Placement
Did not recognized	33 (55.0 %)	29 (47.5%)
Recognized	27 (45.0%)	32 (52.5%)

Table 14: Proportion's comparison of product recognition between different types of placements.

The median scores for *product evaluation* ($H_{2.2}$) (see **table 17**) were similar when comparing the group exposed to static placements (8 (7-9)) with the group exposed to interactive placements (9 (7-10)). Therefore $H_{2.2}$ is **rejected**, once no evidence shows that an interactive placement is more effective than a static one on increasing product evaluation levels (U=1296.000, p=0.079).

Regarding *product preference* ($H_{2.3}$), the participants proportion that preferred the cereal did not differ significantly between the static placements (30.6%) and the interactive placements (31.5%), which was confirmed by the result from the Chi-Square test ($\chi^2(1)=0.009$, p=0.924), hence $H_{2.3}$ is **rejected**.

<i>Product Preference</i>	SP	IP
Did not preferred the cereal	34 (69.4 %)	37 (68.5%)
Preferred the cereal	15 (30.6%)	17 (31.5%)

Table 15: Proportion's comparison of product preference between different types of placements.

Moreover, on *intention to consume* ($H_{2.4}$), no significant differences were found on the median scores of intention to consume between different types of placements ($U=1551.500$, $p=0.997$). The proportion of participants intending to consume the cereal over other products did not differ significantly between the static placements (28.8%) and the interactive placements (25.5%) (see Chi-Square test on **table 18**). Therefore, $H_{2.4}$ is rejected.

<i>Intention to consume (over other products)</i>	SP	IP
Does not intend to consume	39 (72.2. %)	41 (74.5%)
Intends to consume	15 (28.8%)	14 (25.5%)

Table 16: Proportion's comparison of intention to consume (over other products) between different types of placements.

On the *intention to buy* ($H_{2.5}$) no significant differences were recorded on the median scores between the different types of placements ($U=772.000$, $p=0.188$) (see median scores at **table 17**), meaning that no evidence was found, in this study, that children exposed to interactive placements are more likely to ask parents to purchase the cereal, therefore $H_{2.5}$ is rejected.

Group	Product Evaluation	Intention to Consume	Intention to Buy
SP	N=58 8 (7-9)	N=56 3.50 (3.00-4.00)	N=37 3 (3-4)
IP	N=55 9 (7-10)	N=54 3 (3-4)	N=55 3 (3-4)

Table 17: Medians for product evaluation, intention to consume, and intention to buy (H12).

	Product Recognition	Product Preference	Product Evaluation	Intention to Consume	Intention to Consume (over other products)	Intention to Buy
SP vs. IP	$\chi^2(1)=0.674$ $p=0.412$	$\chi^2(1)=0.009$ $p=0.924$	$U=1296.000$ $p=0.079$	$U=1551.500$ $p=0.997$	$\chi^2(1)=0.075$ $p=0.784$	$U=772.000$ $p=0.188$

Table 18: Tests on differences between types of placements (H12).

4.5.3 Hypothesis 3

Our hypothesis 3 (H_3) suggests higher effects on the non-healthy cereal placements for product recognition ($H_{3.1}$), the product evaluation ($H_{3.2}$), the product preference ($H_{3.3}$), the intention to consume the cereal ($H_{3.4}$), and the intention to buy it ($H_{3.5}$). On **table 19**, **table 20**, and **table 21** are, respectively, presented the proportions comparison of *product recognition*, *product preference*, and *intention to consume (over other product)*, between different types of cereals. Medians for *product evaluation*, *intention to consume*, and intention to buy are shown at **table 22**. The test results on $H_{3.1}$, $H_{3.2}$, $H_{3.3}$, $H_{3.4}$, and $H_{3.5}$ can be found at **table 23**.

Commencing with *product recognition* ($H_{3.1}$), the participants proportion recognizing the healthy cereal was 41.0%, and the proportion recognizing the non-healthy one was 56.7% being this difference not significant ($\chi^2(1)=2.978$, $p=0.084$), so $H_{3.1}$ is rejected.

<i>Product Recognition</i>	Healthy Placement	Non-Healthy Placement
Did not recognized	36 (59.0%)	26 (43.3 %)
Recognized	25 (41.0%)	34 (56.7%)

Table 19: Proportion's comparison of product recognition between different types of cereals.

Regarding **product evaluation** ($H_{3.2}$), the Mann-Whitney test result ($U=1316.500$, $p=0.105$) indicates that the median scores were similar between groups with different types of cereals placed (see median scores at **table 22**). Therefore, **$H_{3.2}$ is rejected**.

On **product preference** ($H_{3.3}$), the proportion of participants preferring the placed cereal was significantly higher ($\chi^2(1)=10.993$, $p<0.001$) on the non-healthy cereal placements (46.9%) when compared to the healthy ones (16.7%). Consequently, evidence was found to support the hypothesis that a non-healthy placement obtains higher results on product preference than a healthy one, hence **$H_{3.3}$ is not rejected**.

<i>Product Preference</i>	H P	NH P
Did not preferred the cereal	45 (83,3%)	26 (53,1%)
Preferred the cereal	9 (16,7%)	23 (46,9%)

Table 20: Proportion's comparison of product preference between different types of cereals.

Moving towards the **intention to consume** ($H_{3.4}$), the groups with the non-healthy cereal placed in the movie had significantly higher median scores for intention to consume (4 (3-4)) than the ones with the healthy one placed (3 (3-4)) (see Mann-Whitney test on **table 23**). However, no significant differences were found on the intention to consume over other products between different types of cereals ($\chi^2(1)=0.002$, $p=0.965$). As a result, **$H_{3.4}$ is partially rejected, on the condition where children are expressing their preferences over other types of products**.

<i>Intention to consume (over other products)</i>	H P	NH P
Does not intend to consume	39 (73.6%)	41 (73.2%)
Intends to consume	14 (26.4%)	15 (26.8%)

Table 21: Proportion's comparison of intention to consume (over other products) between different types of cereals.

On the **intention to buy** ($H_{3.5}$), no significant differences were recorded on the median scores ($U=765.500$, $p=0.153$), meaning that the willingness to ask the parents to purchase the cereal was not significantly different between the different types of cereals, then **$H_{3.5}$ is rejected**.

	<i>Product Evaluation</i>		<i>Intention to Consume</i>		<i>Intention to Buy</i>	
H P	N=59	8 (7-9)	N=55	3 (3-4)	N=38	3 (3-4)
NH P	N=54	9.00 (7.00-9.25)	N=55	4 (3-4)	N=48	3 (3-4)

Table 22: Medians for product evaluation, intention to consume, and intention to buy (H3).

	<i>Product Recognition</i>	<i>Product Preference</i>	<i>Product Evaluation</i>	<i>Intention to Consume</i>	<i>Intention to Consume (over other products)</i>	<i>Intention to Buy</i>
H P vs.	$\chi^2(1)=2.978$	$\chi^2(1)=10.993$	U=1316.500	U=1170.000	$\chi^2(1)=0.002$	U=765.500
NH P	p=0.084	p<0.001	p=0.105	p=0.020	p=0.965	p=0.153

Table 23: Tests on differences between types of cereals (H3).

4.5.4 Hypothesis 4

Moving on towards hypothesis 4 (**H₄**), it suggests that Children's persuasive intent knowledge has a moderator effect on the product recognition levels (**H_{4.1}**), product evaluation levels (**H_{4.2}**), product preference levels (**H_{4.3}**), on the intention to consume the cereal (**H_{4.4}**), and the intention to buy it (**H_{4.5}**). On **table 24**, **table 25**, and **table 26** are, respectively, presented the proportions comparison of *product recognition*, *product preference*, and *intention to consume (over other product)*, between different levels of persuasive intent knowledge. Medians for *product evaluation*, *intention to consume*, and intention to buy are shown at **table 27**. The test results on **H_{4.1}**, **H_{4.2}**, **H_{4.3}**, **H_{4.4}**, and **H_{4.5}** can be found at **table 28**.

Commencing with *product recognition* (**H_{4.1}**) and applying the same rationality of the last three hypotheses, results highlight that the proportion of subjects recognizing the cereal did not differ significantly between no persuasive intent knowledge and low or high persuasive intent knowledge ($\chi^2(1)=0.996$, $p=0.318$). Therefore, **H_{4.1} is rejected**.

<i>Product Recognition</i>	No Persuasive Intent Knowledge	Low Persuasive Intent Knowledge	High Persuasive Intent Knowledge
Did not recognized	34 (55.7%)	24 (47.1%)	4 (44.4%)
Recognized	27 (44.3%)	27 (52.9%)	5 (55.6%)

Table 24: Proportion's comparison of product recognition between different levels of persuasive intent knowledge.

When comparing the median scores, displayed at **table 27**, for *product evaluation* (**H_{4.2}**) among different levels of persuasive intent knowledge and performing the Kruskal-Wallis test, no significant differences were found between the different levels of persuasive intent knowledge (U=1543.000, $p=0.756$), hence **H_{4.2} is rejected**.

The analysis on *product preference* (**H_{4.3}**) shows that the proportion of subjects preferring the placed cereal did not differ significantly between the different levels of persuasive intent knowledge ($\chi^2(1)=0.242$, $p=0.623$), thus **H_{4.3} is rejected**.

<i>Product Preference</i>	No PK	L PK	H PK
Did not preferred the cereal	37 (71.2%)	30 (68.2%)	4 (57.1%)
Preferred the cereal	15 (28.8%)	14 (31.8%)	3 (42.9%)

Table 25: Proportion's comparison of product preference between different levels of persuasive intent knowledge.

On *intention to consume* ($H_{4.4}$), comparing the median scores for intention to consume among different levels of persuasive intent knowledge (see **table 27**) and analyzing the results of the performed Kruskal-Wallis test (see **table 28**), no significant differences were found. Moreover, the Chi-square test result on the intention to consume over other products show that the proportion of subjects choosing the placed cereal over other products did not differ significantly between the different levels of persuasive intent knowledge ($\chi^2(1)=0.228$, $p=0.633$). Thus **$H_{4.4}$ is rejected.**

<i>Intention to consume (over other products)</i>	No PK	L PK	H PK
Does not intend to consume	40 (71.4%)	34 (75.6%)	6 (75.0%)
Intends to consume	16 (28.6%)	11 (24.4%)	2 (25.0%)

Table 26: Proportion's comparison of intention to consume (over other products) between different levels of persuasive intent knowledge.

Lastly, concerning *intention to buy* ($H_{4.5}$), median scores, displayed at **table 27**, indicate no significant differences on participant's willingness to ask their parents to buy the cereal when they perceive the placement source or its persuasive intent ($U=921.500$, $p=0.992$), hence **$H_{4.5}$ is rejected.**

	<i>Product Evaluation</i>		<i>Intention to Consume</i>		<i>Intention to Buy</i>	
No PK	N=56	9.00 (6.25-9.00)	N=56	3 (3-4)	N=45	3 (3-4)
L PK	N=48	8 (7-9)	N=47	4(3-4)	N=35	3 (3-4)
H PK	N=9	8.00 (6.50-10.00)	N=7	4 (3-4)	N=6	3.00 (2.75-4.00)

Table 27: Medians for product evaluation, intention to consume, and intention to buy (H4).

	<i>Product Recognition</i>	<i>Product Preference</i>	<i>Product Evaluation</i>	<i>Intention to Consume</i>	<i>Intention to Consume (over other products)</i>	<i>Intention to Buy</i>
No PK vs.	$\chi^2(1)=0.996$	$\chi^2(1)=0.242$	H=0.103	H=0.907	$\chi^2(1)=0.228$	H=0.148
L PK vs. H PK	$p=0.318$	$p=0.623$	$p=0.950$	$p=0.635$	$p=0.633$	$p=0.929$

Table 28: Tests on differences between different levels of persuasive intent knowledge (H4).

4.6 Results Summary

The following table summarizes the hypotheses results discussed in the previous sections.

The asterisk means that the hypothesis was only partially rejected.

H₁ – The cereal placement positively affects:	Not Rejected	Rejected
H_{1.1} – Product Recognition		X
H_{1.2} – Product Evaluation		X*
H_{1.3} – Product Preference		X
H_{1.4} – Intention to Consume		X
H_{1.5} – Intention to Buy		X*
H₂ – The effects are higher on an interactive placement, concerning:	Not Rejected	Rejected
H_{2.1} – Product Recognition		X
H_{2.2} – Product Evaluation		X
H_{2.3} – Product Preference		X
H_{2.4} – Intention to Consume		X
H_{2.5} – Intention to Buy		X
H₃ – The effects are higher on the non-healthy cereal placement, concerning:	Not Rejected	Rejected
H_{3.1} – Product Recognition		X
H_{3.2} – Product Evaluation		X
H_{3.3} – Product Preference	X	
H_{3.4} – Intention to Consume		X*
H_{3.5} – Intention to Buy		X
H₄ – Children's persuasive intent knowledge has a moderator effect on	Not Rejected	Rejected
H_{4.1} – Product Recognition		X
H_{4.2} – Product Evaluation		X
H_{4.3} – Product Preference		X
H_{4.4} – Intention to Consume		X
H_{4.5} – Intention to Buy		X

Table 29: Summary – Hypotheses Testing.

5. Discussion and Implications

This dissertation main goal was to measure the placement effectiveness on healthy product promotion. More precisely, we aimed to test if a healthy cereal product placement could influence children's recognition, preference, intention to consume, and intention to buy concerning the placed cereal. To do so, we compared 5 independent samples of 10 to 12 years old Portuguese children, one with no cereal placed, one with a healthy cereal static placed, one with a healthy cereal interactively placed, one with a non-healthy cereal static placed, and one with a non-healthy cereal interactively placed.

Our study can contribute to the literature on the product placement effects among children. During our search for literature regarding this subject, we did not find any study comparing two different types of placements (static and interactive) and two types of cereals (healthy and non-healthy), so this study brings new insights on the subject.

In contrast with Naderer, Matthes, and Zeller (2018) previous findings, that suggested higher levels of product recognition on children exposed to product placements, our results indicate that the cereal placement does not influence meaningfully recognition levels among children between 10 and 12 years old.

The international literature on the subject found no positive association between product evaluation regarding a given product when placed (Matthes & Naderer, 2015; Naderer, Matthes, Marquart, et al., 2018; Smith et al., 2020). Despite our results on product evaluation levels could not completely support the hypothesis of a positive association between product evaluation when the product is placed, it has shown that product evaluation improved significantly in every group, except when the non-healthy cereal was placed statically. This might occur because high levels of product evaluation have already been granted to the non-healthy product, independently if children watch, or not, a video with the unhealthy product placed. Additionally, the effect might be felt only on the interactive placement once it is the one that endorses the product the most by having characters interaction with it, and has previous establish that when characters interact with the product in the plot the consumer might experience a "second-hand" learning about the product, increasing its perceived value (Naderer et al., 2019).

Regarding product preference, our findings only registered higher levels of product preference when a healthy cereal was part of an interactive placement. This contrasts with

previous findings suggesting that an embedded message, throughout an advergaming, increases product preferences levels, especially on children above 8 years old (Mallinckrodt & Mizerski, 2007). Although, our results can be explained applying the same rationale applied in the last paragraph, higher levels of preference for Nacional Cookie's were previously established on our participants' preferences, therefore the effect was only felt on Nacional Zero when placed in the most prominent type of placement. This is a promising result, once it gives us a clue that might be possible to promote healthier eating habits among Portuguese children throughout product placements.

It was proven that children were more likely to want to consume the healthy cereal over products from other categories, in either type of placement. Despite not generalized for both cereals, our results are consistent with previous discoveries identified by Mallinckrodt and Mizerski (2007) and Smith et al. (2020). Moreover, a study from 2018 highlights that children around the age of 12 even though having a higher understanding of persuasive messages still often choose products immersed in persuasive messages (Naderer, Matthes, Marquart, et al., 2018). Notwithstanding, it is important to refer that no differences were found on the intention to consume when the placed cereal faced different cereals.

Regarding the intention to buy, or ask parents to buy the cereal, more willingness to ask parents to purchase the product was found in every placement except for the static one with a healthy cereal. This result clearly contrasts with Mallinckrodt and Mizerski (2007) findings suggesting that even though the advergaming results in higher levels of product preference, the same does not apply to intention to ask someone in the family to buy the product. The lack of effect on the healthy cereal when static placed, might indicate that to make children ask their parents to purchase the cereal an interactive placement is needed.

Overall, apart from product recognition, every component tested experienced higher results on at least one type of placement, confirming expectations that a cereal placement is capable to affect positively children preference for the product, its evaluation, intention to consume and to buy it.

Another curious finding about the placement's effectiveness was achieved in hypothesis 2. This hypothesis suggested that the interactive placements are more effective than the static ones, however, no evidence of that phenomenon was found in any component evaluated. These findings diverge considerably with previous literature, once it has suggested that a

more prominent product placement, and therefore one with more interaction, is more effective than others (Naderer et al., 2019), once result in more visual attention from watchers (Kamleitner & Jyote, 2013; Naderer, Matthes, & Zeller, 2018).

Going forward for the type of cereal effect, we proposed that the non-healthy cereal should achieve higher results in each component, but that was not entirely verified. We could only prove higher results for Nacional Cookie's placements, when compared to Nacional Zero ones, for product preference and, partially, on intention to consume. Partially, once no difference was found on the intention to consume over products from other categories.

Results delivers an interesting discovery regarding our hypothesis 4. The hypothesis suggested that the higher the knowledge of persuasive intent levels the lower are the results on all our variable tested, except on *product recognition* where we expect the opposite outcome. Conclusions on this subject are consisting with prior literature (Mallinckrodt & Mizerski, 2007; Rifon et al., 2014), emphasizing that knowledge of persuasive intent does not influence children's preferences, evaluation on the product, and choices. Nevertheless, our sample exhibited a low level of persuasive intent knowledge which may have affected our results.

Additionally, our study can be particularly valuable to understand Portuguese children's habits, such on cereal consumption, on average hours spend watching television, and knowledge of persuasive intent. First, on children eating habits, was found that children eat cereal on a regular basis. In fact, 75.5% of our participants eat cereals for breakfast at least once a week and 23.8% eats it for 5 or more times during the week. Moreover, the highly consumed cereal consumed by Portuguese children is Chocapic (31.1%), but an interesting percentage of them (16.6%) consume CornFlakes related cereals. During the week, most participants watch television regularly for between 1 and 2 hours per day, and during a weekend day for more than 3h. On the knowledge of persuasive intent, interesting conclusions can be taken, once most of our participants (50.4%) did not understand the persuasive intent, both on the awareness of the source and the placement intent. This contrasts with Mallinckrodt and Mizerski (2007) result indicating that 54% of children participating in the study understood the game persuasive intent. Notwithstanding, more recent literature explains that once processing the advertising is just a secondary task, is hard for children to comprehend the placement intent (Vanwesenbeeck et al., 2017), and that even 12 years old children still not have an adult level of understanding of selling intent (Rozendaal et al., 2010).

Finally, for brands who produce cereals, either healthy or not, and participate on the Portuguese market, or other brand producing breakfast products for Portuguese children, this study can provide precious insights. By proving the cereal placement effectiveness on Portuguese children between 10 and 12 years old, the conditions are settled for companies to use this strategy to promote their products targeting this age range. Likewise, strategies used on the placement we created proved to be effective, thus companies should be capable to replicate our taste and fun appeals on their advertisements.

To conclude, and responding to our central question, the inexistence of differences between the healthy and non-healthy cereal placements, clearly indicates that this strategy can be just as effective on healthy cereals than on unhealthy ones. However, this marketing strategy frequently expose children to unhealthy foods (Fleming-Milici & Harris, 2020; Radnitz et al., 2009). A paradigm shift is needed on this subject, so we hope that companies could use these findings to replicate this kind of stimuli and, consequently, promote healthier lifestyles among children. Therefore, using marketing we could restructure children food preferences, that have been proven more relevant than nutritional characteristics (Fitzgerald et al., 2010; Hartmann et al., 2017), and fight against their “biological preference” for food and beverages that taste sweet or salty (Kraak et al., 2016).

6. Limitations and Further Research

Even though this study has been capable to deliver interesting findings to literature, some limitations must be highlighted. Similarly, our results indicate some interesting guidelines for future research that will be further clarify on this section.

First, and as mentioned by Smith et al. (2020), our study only focused on short-time influence on children preferences and choices, so no conclusion can be made about the impact on their preferences and choices during childhood or adulthood. In fact, this limitation might be an interesting suggestion for further research on this matter, toward studying the long-term effects of a healthy product placement.

Second, our stimuli were produced specifically to the study, with no professional software's or abilities, and that might had influenced the obtained results. To be more precise, no differences were found between interactive and static placements, contrasting with the expectations created by previous literature (Kamleitner & Jyote, 2013; Naderer et al., 2019; Naderer, Matthes, & Zeller, 2018). That been said, it is possible that should have been given a more center position and more screen time to the cereal on the interactive placement once no variations were created on those specific characteristics. Also, children watch the video at school, a relatively different environment from the one they face at home (Naderer, Matthes, & Zeller, 2018).

Third, we compared cereals that, despite belonging to the same brand, are from two different categories. Actually, just the fact that the non-healthy cereal has chocolate might have influenced our results once children's have a "biological preference" for sweet food (Kraak et al., 2016). On that limitation, it might be interesting to use one healthy product and compare it only with healthy alternatives. As a result, it will be possible to measure the placement effectiveness among products with the same level of "biological preference" among children.

Lastly, focusing on future research suggestions, and despite our results confirm the placement effectiveness, considering the importance that packaging design has been proven to have among children's preferences (Connor, 2006; De Veirman et al., 2019; Hebden et al., 2011), it is yet to prove how effective can be a combination effect of a healthy interactive placement with an improved package. Also, persuasive intent knowledge levels among our participants indicate that more studies specifically on this subject are needed. For instance, it

is yet to understand which roll Portuguese schools can play on children's knowledge of persuasive intent, and responses to advertising attempts.

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Appendices

Appendix 1: Portuguese Education Authorities Consent Letter



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Contexto e Objetivo do Estudo

A Organização Mundial da Saúde, OMS, estima que, em 2019, 38.2 milhões de crianças com menos de 5 anos de idade apresentaram sobrepeso ou obesidade. Para crianças mais velhas, entre dos 5 e os 19 anos, a estimativa da organização, em 2016, apontou que 18% dessas crianças apresentavam uma das duas condições. Esta epidemia potencia o risco de apneia do sono e diabetes do tipo 2 (Palmer & Carpenter, 2006), tal como outras doenças capazes de provocar morte prematura (World Health Organization, 2020). Agravando a situação, um terço das crianças que apresenta esta condição tende a mantê-la como adulto (Wang & Lobstein, 2006), ilustrando a importância de agir sobre esta problemática durante a infância (Lobstein et al., 2004).

Uma das causas para que esta epidemia se alastre é o uso de estratégias de marketing para promover comida que, estabelecendo preferências e padrões de consumo, contribui para o aumento da taxa de obesidade infantil (Carter et al., 2011; Fleming-Milici & Harris, 2020; Radnitz et al., 2009).

O uso de mensagens, através de estratégias de marketing, é uma forma eficaz de promover produtos alimentares (Maimaran & Huang, 2019). No entanto, existe uma lacuna na literatura relativa ao efeito do uso de *product placements* (Brown et al., 2017), especialmente em produtos saudáveis (Naderer, Matthes, Binder, et al., 2018). Assim, o principal objetivo desta investigação será medir a eficácia de *product placements* na promoção de um produto saudável. Os cereais são presença assídua nos pequenos-almoços das crianças (Vaala & Ritter, 2020), são a categoria de comida mais publicitada (Harrison & Marske, 2005; Palmer & Carpenter, 2006), e contêm normalmente excessivas quantidades de açúcar ou sal (Angelino et al., 2019). Tendo tudo isto em conta, iremos utilizar um cereal considerado adequado para crianças entre os 10 e os 12 anos, e um cereal considerado não tão adequado, para as mesmas idades, na nossa investigação. Adicionalmente, pretendemos propor medidas legislativas que combatam a contribuição que o media marketing tem para a obesidade infantil e, no final da sessão, pretendemos também consciencializar os alunos para as estratégias usadas pelas marcas.

Considerações Éticas e Legais

Uma vez que iremos desenvolver um estudo com participantes menores do que 18 anos, estes são, ao abrigo da UNICEF, considerados crianças. Dessa forma, todas as indicações fornecidas pela UNICEF no âmbito do projeto internacional *“Ethical Research Involving Children”* irão ser seguidas minuciosamente (Graham et al., 2013). Primeiramente, irá ser enviada uma carta a pedir autorização aos encarregados de educação, que pode ser consultada no [apêndice 1](#). No entanto é importante referir que a participação das crianças, ainda que devidamente autorizadas pelo encarregado de educação, é completamente opcional, não sendo obrigadas a participar no estudo e sendo devidamente avisadas dessa opção (Choen et al., 2007; Graham et al., 2013). Por fim, a total confidencialidade das suas respostas será explicada no início da sessão.

Amostra

O estudo será realizado com crianças entre o segundo e terceiro estado da teoria de John (1999), entre o estado analítico e o estado refletivo. Assim, serão integradas no estudo crianças entre os 10 e os 12 anos de idade, ou seja, crianças entre o 5º e o 6º ano de escolaridade. O envio das cartas de autorização será então feito, nas turmas dos anos letivos pretendidos, nas escolas do Agrupamento de Escolas de Penafiel Sudoeste, localizadas em Penafiel.

Modelo de Investigação

O método de recolha de dados escolhido foi a realização de um questionário, precedido de um estímulo que será devidamente explicado na próxima secção. Irá haver 5 estímulos diferentes de forma a cumprir o objetivo principal do nosso estudo.

Assim sendo, cada criança será alocada a um dos 5 grupos, um de controlo e 4 experimentais, que mais uma vez serão explicados em detalhe na próxima secção. A atribuição do grupo a cada criança será feita de forma aleatória. Note-se que em qualquer um dos grupos a experiência será a mesma, sendo que previamente ao questionário todas as crianças irão ser introduzidas a um estímulo.

Finalizando a colheita de dados, será explicado às crianças que o objetivo foi criar um estímulo positivo através do vídeo de forma a testar as suas atitudes, preferências e intenção

de consumo em relação ao cereal, bem como consciencializar as mesmas para esta estratégia recorrentemente usada por marcas do setor.

Adicionalmente, é essencial referir que o modelo em que a investigação se processará, presencial ou não presencial, será acordado com as escolas, respeitando as regras sanitárias impostas à data.

Design do Conteúdo Media

Como previamente explicado as crianças serão sujeitas a um estímulo, através de um de cinco conteúdos de vídeo disponíveis. Para a produção do conteúdo foi importante entender qual a abordagem normalmente escolhida para este tipo de estímulos. Um estudo sobre os filmes mais bem sucedidos na Alemanha concluiu que comédias era o género mais utilizado em *product placements*, uma vez que reforçava a associação positiva ao produto (Naderer et al., 2019). Palmer e Carpenter (2006) descobriram que o apelo ao sabor e à diversão eram predominantes nas tentativas publicitárias feitas com recurso a esta estratégia, particularmente quando diz respeito a cereais de pequeno-almoço.

Com o recurso ao que a literatura nos faz saber sobre esta temática, decidimos aplicar um vídeo animado, com recurso ao *website* [Powtoon](#), com apelos ao sabor e interações divertidas no guião. O tempo de cada vídeo será de exatamente 5 minutos e terá 2 exposições ao cereal, com um tempo de exposição total de 30 segundos, como pode ser verificado no seguinte quadro síntese:

Grupo	Tipo de Cereal	Tipo de <i>Placement</i>	Número de Exposições	Tempo de Exposição Total
Grupo de Controlo	---	---	---	---
Grupo Experimental 1	Saudável	Não Interativo	2	34s
Grupo Experimental 2	Saudável	Interativo	2	34s
Grupo Experimental 3	Não Saudável	Não Interativo	2	34s
Grupo Experimental 4	Não Saudável	Interativo	2	34s

Tabela 1: Características do conteúdo vídeo.

No grupo de controlo não haverá lugar a qualquer cereal no vídeo. Nos grupos experimentais 1 e 3 o cereal apenas aparecerá nas imagens (não sendo mencionado pelas personagens), e nos grupos experimentais 2 e 4 o cereal estará nas imagens sendo mencionado pelas personagens, tornando-se assim interativo. O guião sumário do vídeo, alguns *frames* ilustrativos e as personagens que farão parte da história, podem ser consultados no [apêndice](#)

2. Desde a primeira versão deste documento já foi produzido o vídeo do grupo de controlo, onde não haverá exposição. Pode assim ser consultado neste [link](#).

Adicionalmente, a escolha dos cereais a usar foi sustentada pela opinião profissional de três nutricionistas, como pode ser consultado em detalhe no [apêndice 3](#). Foi-lhes pedido que classificassem os cereais que previamente categorizamos como saudáveis (de 1 a 6) e os que previamente categorizamos como não saudáveis (de 7 a 12). Adicionalmente, em cada secção, secção de cereais saudáveis e secção de cereais não saudáveis, foi deixado um espaço dedicado a comentários que os mesmos considerassem pertinentes fazer. O resultado da classificação encontra-se na seguinte tabela:

Cereal	Professional 1	Professional 2	Professional 3	Total
Nacional Zero	2	1	1	4
Weetabix	1	3	3	7
Corn Flakes Equilíbrio	3	2	2	7
Kellogg's Corn Flakes	5	4	4	13
Kellogg's All-Bran	4	6	6	16
Special K Classic	6	5	5	16
Bolas de Chocolate	7	7	7	21
Nacional Cookie'z	11	8	8	27
Chocapic	8	10	10	28
Choco Cookies	12	9	9	30
Estrelitas	9	11	11	32
Lion	10	12	12	34

Tabela 2: Classificação dos cereais: Opinião profissional.

Os cereais Nacional Zero resultaram na classificação mais baixa, significando que são segundo a opinião de três nutricionistas, os mais adequados para o consumo de uma criança entre os 10 e os 12 anos. Assim sendo optamos por usar os cereais **Nacional Zero** como a opção saudável no nosso estudo.



Figura 1: Cereal Saudável escolhido.

Quanto à classificação dos cereais não saudáveis, reflete-se nos comentários dos nutricionistas uma maior dificuldade na ordenação dos mesmos (de 7 a 12). Apesar dos cereais Lion serem os menos adequados para as crianças da faixa etária em estudo, segundo a classificação final obtida, ficou claro que todos os cereais dessa secção têm elevados níveis de açúcar e não devem ser considerados saudáveis. Citando a nutricionista Ana Rita “*Sendo assim, dentro desta categorização os cereais são todos muito idênticos.*”. Consequentemente, e de forma a garantirmos a escolha de dois cereais com grau de conhecimento semelhante por parte das crianças, decidimos optar pelos cereais **Nacional Cookie’z** como opção não saudável.



Figura 2: Cereal Não Saudável escolhido.

Por fim, note-se que não é o objetivo desta investigação dar a entender aos participantes que qualquer dos cereais usados é “saudável” ou “não saudável”, sendo que isso nunca será mencionado durante a experiência. Apenas pretendemos entender se estes dois cereais, com características diferentes, mas notoriedade semelhante, têm a mesma eficácia quando usados em conteúdos media.

Variáveis e Escalas

Para além de pedir a autorização aos encarregados de educação, ser-lhes-á pedido que respondam a algumas questões. No desenvolvimento de uma investigação com crianças, apenas devemos envolvê-las quando não podemos obter a informação de outra forma (Graham et al., 2013). Assim, as perguntas relacionadas com a caracterização da criança, como o género ou idade, serão feitas aos encarregados de educação. O documento entregue, com o pedido de autorização e o conjunto de perguntas feito, pode ser consultado no [apêndice 1](#).

Em relação aos questionários para os alunos, a sua aplicação requer que previamente se estabeleçam parâmetros a ser respondidos. As possibilidades de resposta foram sempre acompanhadas de imagens animadas. De seguida serão apresentadas as medidas e os parâmetros usados:

Reconhecimento do Produto

Naturalmente, para avaliar o reconhecimento do produto, pediremos às crianças para indicar, entre várias opções, quais os cereais que conhecem. Adicionalmente perguntaremos “Viste estes cereais no filme?”, relativo ao cereal em estudo no grupo em questão, que estará representado com uma fotografia. As opções de resposta serão “Sim.” ou “Não.”, e foram adaptadas do trabalho desenvolvido por Naderer, Matthes, e Zeller (2018).

Avaliação do Produto

Para avaliar este parâmetro perguntaremos às crianças “O que achas do seu sabor?” e “E achas que são divertidos ou aborrecidos?”, perguntas essas adaptadas do trabalho de Smith et al. (2020), para avaliar este mesmo parâmetro. Será usada uma escala diferencial semântica com 5 pontos, onde as extremidades são “Nada saboroso!” e “Muito Saboroso!”, e “Muito aborrecido!” e “Muito engraçado!”, respetivamente.

Preferência pelo Produto

Em relação à preferência do produto perguntaremos “Quais destes cereais mais gostas?”. As respostas possíveis serão “Lion.”, “Nacional Zero.”, “Weetabix.”, “Nacional Cookie’z.”, e “Não sei.”. Esta medida foi usada por Mallinckrodt e Mizerski (2007) para medir a preferência pelo produto, num estudo sobre *advergames*.

Intenção de Consumo

Inspirados em Smith et al. (2020) iremos perguntar “Gostavas de provar estes cereais?”. As hipóteses de respostas serão “De certeza que não!”, “Acho que não.”, “Não sei.”, “Acho que sim.”, ou “De certeza que sim!”. Depois perguntaremos “Se pudesses escolher um destes para comer agora qual escolhias?”, com um hamburger, uma salada, o cereal do vídeo, um chocolate, e “Não sei.” como opções. Tal como Mallinckrodt e Mizerski (2007), que previamente aplicaram esta questão, iremos conseguir entender a influência do estímulo na escolha das crianças quando confrontadas com outras alternativas.

Intenção de Compra

A intenção de compra irá ser medida com a pergunta “Vais pedir aos teus pais para compras estes cereais?”, outrora usada por Panic et al. (2013). Usando uma escala *Likert* de cinco pontos, com os extremos “De certeza que não!” e “De certeza que sim!”, mediremos a intenção de pedir aos pais para comprar os cereais.

Conhecimento da Intenção de Persuasão

O último parâmetro medido foi o conhecimento da intenção de persuasão. Foi feito em duas partes, o conhecimento da fonte da publicidade e o conhecimento da intensão de persuasão em si (Panic et al., 2013). Começamos por questionar “Quem achas que criou este vídeo?”, com as seguintes opções acompanhadas de ilustrações: “Nacional.”, “A professora.”, “O Panda.”, “O investigador.”, e “Não sei.”. A única resposta correta será a opção “Nacional.” Adaptando o trabalho de Rifon et al. (2014), perguntaremos “O que achas que eles querem que faças?”. As opções de respostas serão “Comer mais saudável.”, “Brincar.”, “Ver mais vídeos destes.”, “Comprar o cereal Nacional Zero.” (ou “Comprar o cereal Nacional Cookie’z.”, dependendo do grupo experimental) e “Não sei.”. A única resposta correta será comprar o cereal, para ambos os grupos experimentais.

Em suma, todo o conteúdo dos questionários a utilizar na nossa investigação está disponível no [apêndice 4](#). Como natural, os questionários apresentam algumas diferenças entre os grupos, relativas ao cereal que foi usado no estímulo ou, no caso do grupo controlo, qual o cereal que aparece em primeiro lugar.

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Appendix 2: Parental Consent Letter



Rui Miguel Santos Coelho, Mestrado em Gestão
FEP – Faculdade de Economia da Universidade do Porto
Rua Dr. Roberto Frias
4200-464 Porto

Exmo. Sr.
Encarregado

Assunto: Pedido de autorização para participar em estudo sobre cereais

de Educação,

Encontro-me a realizar o mestrado em gestão na Faculdade de Economia da Universidade do Porto, FEP, estando neste momento a desenvolver a minha investigação no âmbito do comportamento do consumidor infantil.

Desse modo, estou a estudar o efeito do marketing nas escolhas das crianças, necessitando que o(a) seu educando(a) respondesse a um questionário na escola, após assistir a um curto vídeo. Naturalmente que para o efeito necessito que o(a) Sr(a). me respondesse a umas breves questões, anexadas nesta autorização, e devolvesse tudo na escola através do seu educando. Pedia ainda que as folhas sejam entregues ao diretor de turma, sem as separar.

Importa dizer que a confidencialidade dos dados é total e serão apenas recolhidos e analisados por mim. Na publicação não será feita qualquer referência aos alunos nem às escolas que estes frequentam. Os resultados do estudo, mais uma vez sem qualquer referência aos participantes, poderão também ser apresentados em conferências, artigos/livros ou notícias relacionadas com o tema. Aquando da conclusão da investigação, os resultados serão enviados para a escola e estarão disponíveis para a consulta de todos os encarregados de educação.

Obrigado pelo vosso tempo.

Com os melhores cumprimentos,

Autorizo o(a) meu educando(a) _____ do
____° ano, turma _____ a participar neste estudo.

_____, ____ de _____, de 2021.

Assinatura do Encarregado de Educação:

Que idade tem o seu educando?

Qual o género do seu educando?

 Masculino Feminino

Quantas horas, aproximadamente, o seu educando vê televisão num dia de escola?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nenhuma	Menos de 1h	Entre 1h e 2h	Entre 3h e 4h	Mais de 4h

Quantas horas, aproximadamente, o seu educando vê televisão num dia do fim de semana?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nenhuma	Menos de 1h	Entre 1h e 2h	Entre 3h e 4h	Mais de 4h

Quantas vezes por semana, aproximadamente, o seu educando come cereais ao pequeno-almoço (de segunda a domingo)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nenhuma	1 a 2 vezes	3 a 4 vezes	5 a 6 vezes	Todos os dias

Que cereais o seu educando come?

- Nenhum
- Lion
- Nacional Zero
- Weetabix
- Nacional Cookie'z
- Outro: _____

Appendix 3: Children's Questionnaires

Appendix 3.1: Control Group

Estudo Tese - Mestrado em Gestão

Olá!

Estou a fazer um estudo para a minha Tese no Mestrado em Gestão e precisava da tua ajuda para responderes a este questionário, depois de teres visto o vídeo!

Não te esqueças que para participares deves ter a autorização do teu encarregado de educação assinada. Apesar disso a tua participação é opcional, mesmo que tenhas a autorização só respondes se o desejares fazer.

Os dados que estou a recolher são todos confidenciais, não aparecerão em lado nenhum os vossos nomes, os dos professores, ou o das escolas (ou outras instituições) onde foi realizado o estudo. Apenas os resultados finais poderão ser publicados quer na tese quer em artigos científicos, livros, notícias, etc, mas sempre respeitando a confidencialidade dos dados.

A tua opinião é muito importante e é ela que pretendo obter ao realizar este estudo. Não há respostas certas nem erradas, é apenas a tua opinião! Assim, se participares estarás a ajudar-me no meu estudo e a contribuir para a investigação em marketing de crianças e jovens.

* Required

Começa por inserir o código que o investigador te deu. *

Não te esqueças que o código tem 3 números e que os zeros também contam. Por exemplo, se o teu número for "008" tens que colocar aqui "008"

Your answer

Selecciona os cereais que conheces. *



Lion



Nacional Zero



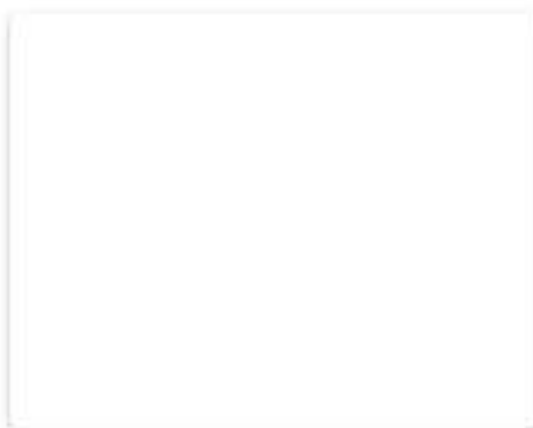
Nacional Cookie'z



Weetabix



Não conheço nenhum



Não quero responder

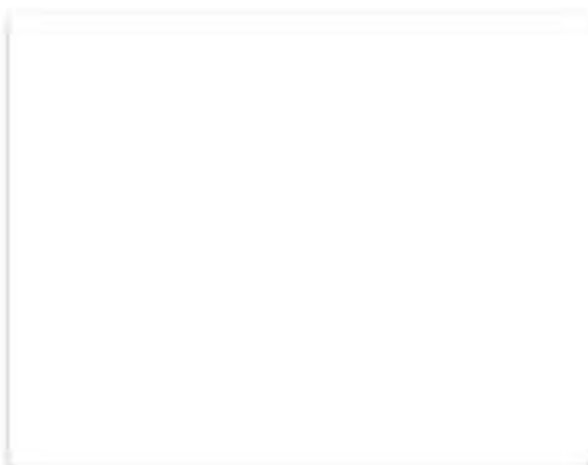
Viste estes cereais no video? *



Não



Sim



Não quero responder

O que achas do seu sabor?

Selecione o número mais perto da tua opinião. Se não quiseres responder passa para a próxima pergunta.



1



5

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Nada Saboroso!

Muito Saboroso!

E achas que são divertidos ou aborrecidos?

Selecione o número mais perto da tua opinião. Se não quiseres responder passa para a próxima pergunta.



1



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Muito aborrecido!

Muito divertido!

Gostavas de os provar? *



De certeza que não!



Acho que não.



Não sei.



Acho que sim.



Vais pedir aos teus pais para os comprar? *



De certeza que não!



Acho que não.



Não sei.



Acho que sim.



De certeza que sim!

Não quero responder.

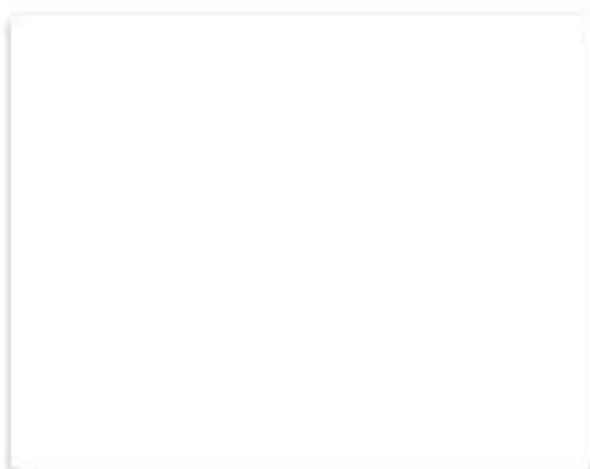
Viste estes cereais no video? *



Não



Sim



Não quero responder

O que achas do seu sabor?

Selecione o número mais perto da tua opinião. Se não quiseres responder passa para a próxima pergunta.



1



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Nada Saboroso!

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Muito Saboroso!

E achas que são divertidos ou aborrecidos?

Selecione o número mais perto da tua opinião. Se não quiseres responder passa para a próxima pergunta.



1



5

Muito aborrecido!

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Muito divertido!

Gostavas de os provar? *



De certeza que não!



Acho que não.



Não sei.



Acho que sim.



Vais pedir aos teus pais para os comprar? *



De certeza que não!



Acho que não.



Não sei.



Acho que sim.



De certeza que sim!

Não quero responder.

Quais destes cereais mais gostas? *



Lion



Nacional Zero



Nacional Cookie'z



Weetabix



Não sei

Não quero responder.

Se pudesses escolher um destes para comer agora qual escolherias? *



Nacional Zero



Chocolate



Nacional Cookiez



Hambúrguer



Salada



Não sei

Não quero responder

Estudo Tese - Mestrado em Gestão

Olá!

Estou a fazer um estudo para a minha Tese no Mestrado em Gestão e precisava da tua ajuda para responderes a este questionário, depois de teres visto o vídeo!

Não te esqueças que para participares deves ter a autorização do teu encarregado de educação assinada. Apesar disso a tua participação é opcional, mesmo que tenhas a autorização só respondes se o desejares fazer.

Os dados que estou a recolher são todos confidenciais, não aparecerão em lado nenhum os vossos nomes, os dos professores, ou o das escolas (ou outras instituições) onde foi realizado o estudo. Apenas os resultados finais poderão ser publicados quer na tese quer em artigos científicos, livros, notícias, etc, mas sempre respeitando a confidencialidade dos dados.

A tua opinião é muito importante e é ela que pretendo obter ao realizar este estudo. Não há respostas certas nem erradas, é apenas a tua opinião! Assim, se participares estarás a ajudar-me no meu estudo e a contribuir para a investigação em marketing de crianças e jovens.

* Required

Começa por inserir o código que o investigador te deu. *

Não te esqueças que o código tem 3 números e que os zeros também contam. Por exemplo, se o teu número for "008" tens que colocar aqui "008"

Your answer

Selecione os cereais que conhece. *



Lion



Nacional Zero



Nacional Cookie'z



Weetabix



Não conheço nenhum

Não quero responder

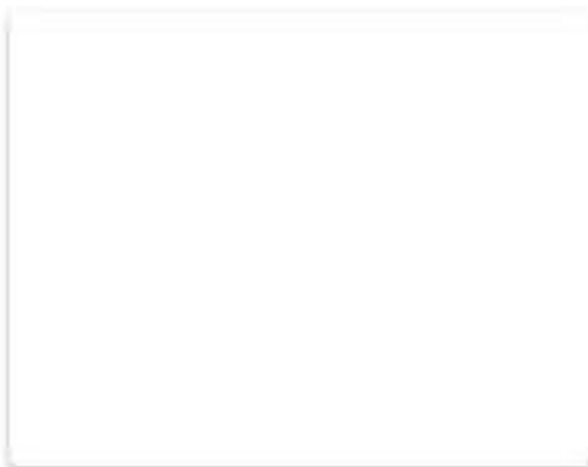
Viste estes cereais no video? *



Não



Sim



Não quero responder

O que achas do seu sabor?

Selecione o número mais perto da tua opinião. Se não quiseres responder passa para a próxima pergunta.



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Nada Saboroso!

Muito Saboroso!

E achas que são divertidos ou aborrecidos?

Selecione o número mais perto da tua opinião. Se não quiseres responder passa para a próxima pergunta.



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Muito aborrecido!

Muito divertido!

Gostavas de os provar? *



De certeza que não!



Acho que não.



Não sei.



Acho que sim.



Vais pedir aos teus pais para os comprar? *



De certeza que não!



Acho que não.



Não sei.



Acho que sim.



De certeza que sim!

Não quero responder.

Quais destes cereais mais gostas? *



Lion



Nacional Zero



Nacional Cookie'z



Weetabix



Não sei

Não quero responder.

Se pudesses escolher um destes para comer agora qual escolhias? *



Chocolate



Nacional Zero



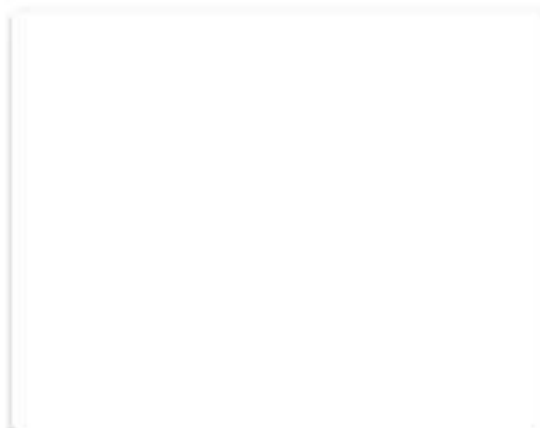
Hamburguer



Salada



Não sei



Não quero responder

Quem é que achas que criou este video? *



A Nacional



O(a) Professor(a)



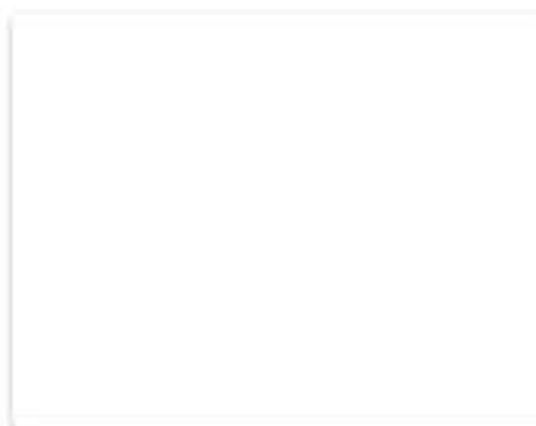
Os três amigos



O investigador



Não sei



Não quero responder

O que é que ele(s) quer(em) que façás? *



Comer mais saudável



Brincar



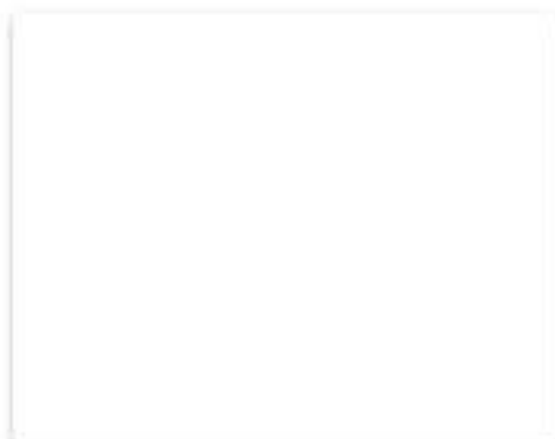
Ver mais vídeos destes



Comprar estes cereais



Não sei



Não quero responder

Estudo Tese - Mestrado em Gestão

Olá!

Estou a fazer um estudo para a minha Tese no Mestrado em Gestão e precisava da tua ajuda para responderes a este questionário, depois de teres visto o vídeo!

Não te esqueças que para participares deves ter a autorização do teu encarregado de educação assinada. Apesar disso a tua participação é opcional, mesmo que tenhas a autorização só respondes se o desejares fazer.

Os dados que estou a recolher são todos confidenciais, não aparecerão em lado nenhum os vossos nomes, os dos professores, ou o das escolas (ou outras instituições) onde foi realizado o estudo. Apenas os resultados finais poderão ser publicados quer na tese quer em artigos científicos, livros, notícias, etc, mas sempre respeitando a confidencialidade dos dados.

A tua opinião é muito importante e é ela que pretendo obter ao realizar este estudo. Não há respostas certas nem erradas, é apenas a tua opinião! Assim, se participares estarás a ajudar-me no meu estudo e a contribuir para a investigação em marketing de crianças e jovens.

* Required

Começa por inserir o código que o investigador te deu. *

Não te esqueças que o código tem 3 números e que os zeros também contam. Por exemplo, se o teu número for "008" tens que colocar aqui "008"

Your answer

Selecione os cereais que conhece. *



Lion



Nacional Zero



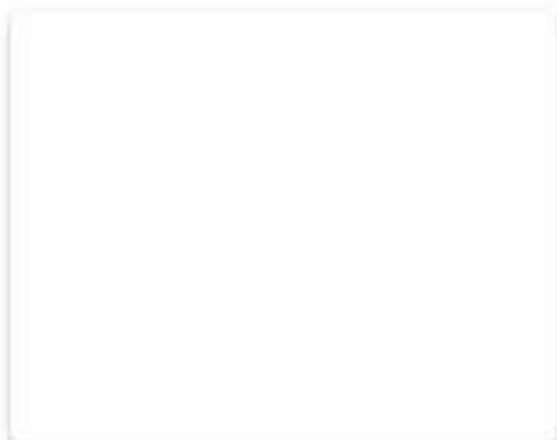
Nacional Cookie's



Weetabix



Não conheço nenhum



Não quero responder

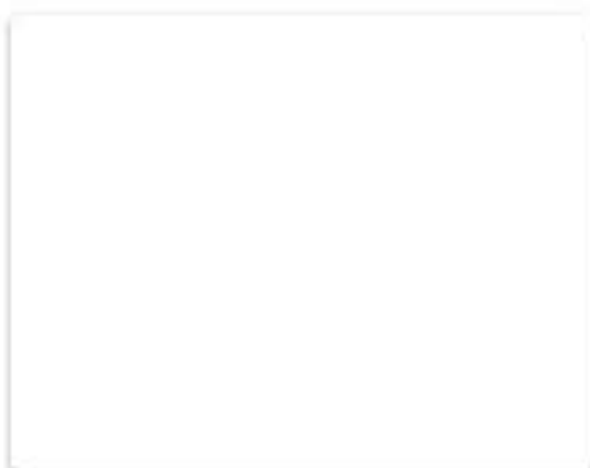
Viste estes cereais no video? *



Não



Sim



Não quero responder

O que achas do seu sabor?

Selecione o número mais perto da tua opinião. Se não quiseres responder passa para a próxima pergunta.



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Nada Saboroso!

Muito Saboroso!

E achas que são divertidos ou aborrecidos?

Selecione o número mais perto da tua opinião. Se não quiseres responder passa para a próxima pergunta.



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Muito aborrecido!

Muito divertido!

Gostavas de os provar? *



De certeza que não!



Acho que não.



Não sei.



Acho que sim.



Vais pedir aos teus pais para os comprar? *



De certeza que não!



Acho que não.



Não sei.



Acho que sim.



De certeza que sim!

Não quero responder.

Quais destes cereais mais gostas? *



Lion



Nacional Zero



Nacional Cookie'z



Weetabix



Não sei

Não quero responder.

Se pudesses escolher um destes para comer agora qual escolhias? *



Chocolate



Nacional Cookiez



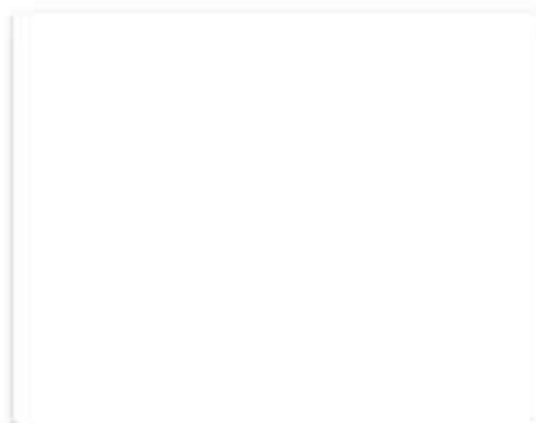
Hamburguer



Salada



Não sei



Não quero responder

Quem é que achas que criou este vídeo? *



A Nacional



O(a) Professor(a)



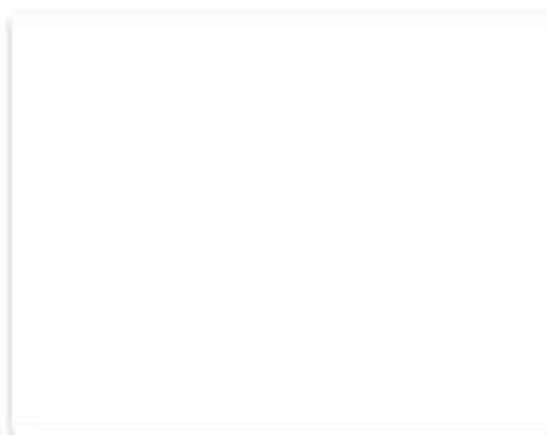
Os três amigos



O investigador



Não sei



Não quero responder

O que é que ele(s) quer(em) que faças? *



Comer mais saudável



Brincar



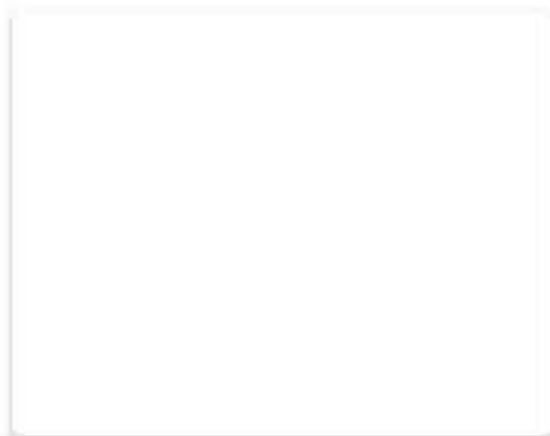
Ver mais vídeos destes



Comprar estes cereais



Não sei



Não quero responder

Appendix 4: Placements Screenshots, Video Contents, and Script.

Appendix 4.1: Control Group

Link to control group video: <https://youtu.be/ElxzcMtRot4>

Appendix 4.2: Experimental Group 1



Figure 3: Experimental group 1 - first placement.



Figure 4: Experimental group 1 - second placement.

Link to experimental group 1 video: <https://youtu.be/BoueE0QIQaM>

Appendix 4.3: Experimental Group 2



Figure 5: Experimental group 2 - first placement.



Figure 6: Experimental group 2 - second placement.

Link to experimental group 2 video: <https://youtu.be/RnZ8x1gW4k>

Appendix 4.4: Experimental Group 3



Figure 7: Experimental group 3 - first placement.



Figure 8: Experimental group 3 - second placement.

Link to experimental group 3 video: <https://youtu.be/CYLfUZL43zA>

Appendix 4.5: Experimental Group 4



Figure 9: Experimental group 4 - first placement.



Figure 10: Experimental group 4 - second placement.

Link to experimental group 4 video: <https://youtu.be/DWXJVR-In3c>

Appendix 4.6: Script

Cena 1

Maria: João! Mesmo a tempo como sempre.

João: Olá Maria, já sabes que comigo é sempre a horinhas, nunca falho.

Cena 2

João: E então, conseguiste treinar muito para entrares na equipa de andebol da escola?

Maria: Sim, por acaso ontem deu para praticar. E tu no futebol? Já dá mais que 2 toques?
(em tom de brincadeira)

João: AH AH AH pois claro, sabes bem que sou um craque.

Cena 3

João: Mas mais importante que isso, onde se meteu o Panda Martim?

Maria: Realmente, ele é super distraído, mas já passou demasiado tempo.

João: Devíamos procurá-lo. Estou a ficar preocupado, que dizes?

Maria: Claro! Sem ele o dia não é tão divertido.

João: Vamos lá partir à aventura. Ou melhor, ao mistério. Onde raio se foi meter o Martim!?!?

Cena 4 – Separador.

Cena 5

João: Demos imensas voltas à vila e ninguém o viu. Como é que um panda passa despercebido?

Maria: Não deve andar na rua totó! Afinal um panda preto e branco dava nas vistas.

João: Pois é, e se fossemos ver à escola?

Maria: Na escola? Tchê mas hoje é sábado João.

João: Pensa Maria, ele é distraído, pode achar que é dia de escola.

Maria: Tens razão, vamos espreitar.

Cena 6

João: Bolas não esta aqui!

Maria: Pois... *(diz triste)*

João: Não te sentes na mesa, que traquinas. Vou ligar aos meus pais e perguntar se podemos ir lá casa lanchar.

Maria: Boa. Já estou com uma fomeca!

Maria: Então podemos ir??

João: Sim, bora lá.

Cena 7 – 1ª Colocação

- **Grupo de Controlo, Grupos Experimentais 1 e 3** (colocações estáticas)

Maria: Huum, estava mesmo a precisar de lanchar, para repor as energias!

João: Mesmo, nós como desportistas temos que nos alimentar bem, gastamos muita energia.

Maria: E olha que vamos precisar de força para as buscas, o Martim mete-nos em cada uma.

- **Grupo Experimental 2** (colocação interativa do cereal saudável)

Maria: Huum, estes cereais Nacional Zero vieram mesmo a calhar!

João: São tããão saborosos, e dizem que são ideais para nós desportistas que gastamos muita energia.

Maria: Eu como sempre antes do andebol, e olha que vamos precisar de força para as buscas, o Martim mete-nos em cada uma.

- **Grupo Experimental 4** (colocação interativa do cereal não saudável)

Maria: Huum, estes cereais Nacional Chookie'z vieram mesmo a calhar!

João: São tããão saborosos, e dizem que são ideais para nós desportistas que gastamos muita energia.

Maria: Eu como sempre antes do andebol, e olha que vamos precisar de força para as buscas, o Martim mete-nos em cada uma.

Cena 8

João: Olha!! Aquele, não é..? Ahhh esquece, é a Panda Zena, parecia o Martim. *(afirma desiludido)*

Panda Zena: Vi o vosso amiguinho nas casas da colina, pode ser que tenham sorte! *(diz com o seu tom tipicamente malvado)*

Maria: Ouviste João? Vamos!!!

(Pausa curta)

Panda Zena: Muahaha caíram como patinhos.

Cena 9

João: Vamos Maria rápido.

Maria: Oh não, são os meus pais!

Mãe: Pois somos minha menina! Queremos saber onde andaram a manhã toda?

Pai: Exatamente, é só aventuras e mais aventuras.

Maria: Mas pais, nós não sabemos do Martim. Estamos preocupados, temos que o encontrar!

Mãe: A sério? Então continuem, com juízo!

Maria e João: Obrigado!!

Cena 10

Maria: Não estás cansado de correr? *(com voz cansada)*

João: Um bocado, ainda bem que lanchamos! Pensava mesmo que era desta, mas a panda zena é sempre a mesma coisa, só sabe pregar partidas!

Maria: Sabes onde não fomos? À floresta, o Martim adora a floresta! Vamos, despacha-te!!!

Cena 11

Maria: Então? Alguma coisa aí no arbusto João?

João: Nada... *(diz triste)*

Maria: Bolas, que azar! Mas tenho um bom pressentimento, vamos continuar na floresta!

Cena 12

João: Já me tinha esquecido de como é bom caminhar aqui.

Maria: Mesmo, o panda tem razão em querer passear mais vezes connosco por aqui.

Maria: João, estou a ficar com medo, e se lhe aconteceu algo de mal?

João: Pois... *(cabisbaixo)*. Mas não te preocupes, toda a gente adora o panda e ele até sabe defesa pessoal. *(em tom de brincadeira)*.

Cena 13

Maria: Este caminho não é igual ao outro?

João: Sim, parece que andamos às voltas. Mas olha, parecem pegadas, bora corre!

Maria: Mais rápido João!

João: Parecem mesmo de Panda, mas será que são do Martim?

Maria: Claro, olha para o tamanho. *(diz entusiasmado)*

João: Tens razão, ninguém lhe pode dizer, mas o Martim é o panda mais pequeno da vila! *(diz a sussurrar)*

Cena 14

João: Olha mais pegadas! Parece que estamos mais perto.

Maria: Sim, e repara estão a subir este caminho. Martim? Martim?

João: Ele pode não ouvir, vamos subir o caminho.

Cena 15

João: Aiii parecia que a subida nunca mais acabava!

Maria: Mas valeu a pena! Olha, as pegadas continuam.

João: Pois Maria, mas sabes que eu não gosto muito de grutas...

Maria: Ó João não sejas medricas, eu estou contigo e é mesmo para lá que as pagadas apontam.

João: Tens razão, mas não saias da minha beira!

Maria: Sim amigo, eu prometo anda.

Cena 16 – 2ª Colocação

- **Grupo de Controlo, Grupos Experimentais 1 e 3** (colocações estáticas)

João: Ugh odeio isto, que escuro Maria!

Maria: Olha ali esta ele!!

Martim: Então amigos, não tínhamos lanche marcado aqui hoje?

João: Aí que cromó!! És sempre o mesmo Martim.

Maria: É só amanhã!

Martim: UPS, espero que já tenham comido porque eu comi a comida dos três.

Maria: Que saudades guloso!

- **Grupo Experimental 2** (colocação interativa do cereal saudável)

João: Ugh odeio isto, que escuro Maria!

Maria: Olha ali esta ele!!

Martim: Então amigos, não tínhamos lanche marcado aqui hoje?

João: Aí que cromó!! És sempre o mesmo Martim.

Maria: É só amanhã!

Martim: UPS, espero que já tenham comido porque eu comi os cereais Nacional Zero todos. Que saborosos!

Maria e João: Aí Que saudades guloso!

- **Grupo Experimental 4** (colocação interativa do cereal não saudável)

João: Ugh odeio isto, que escuro Maria!

Maria: Olha ali esta ele!!

Martim: Então amigos, não tínhamos lanche marcado aqui hoje?

João: Aí que cromo!! És sempre o mesmo Martim.

Maria: É só amanhã!

Martim: UPS, espero que já tenham comido porque eu comi os cereais Nacional Cookie'z todos. Que saborosos!

Maria e João: Aí Que saudades guloso!

Cena 17

Maria: Mãe, pai, olhem só quem encontramos!

Pai: Martim, que bom ter-te de volta.

Martim: Eheh, foi uma distração minha enganei-me no dia e fui lanchar para a gruta sozinho.

Mãe: O que importa é que voltaste Martim, agora é tempo de festejar, que me dizem de uma cantoria?

Os três: Siiiiim, vamos todos.

Cena 18 – Música final

Appendix 5: Nutritionist Opinion on Cereals

Contactos: Rui Coelho | +351 930 612 837 | ruimigueisc.777@gmail.com



Rui Miguel Santos Coelho, Mestrado em Gestão
FEP – Faculdade de Economia da Universidade do Porto
Rua Dr. Roberto Frias
4200-464 Porto

Assunto: Pedido de opinião profissional sobre o conteúdo nutricional dos cereais selecionados

Encontro-me a realizar o mestrado em gestão na Faculdade de Economia da Universidade do Porto, FEP, estando neste momento a desenvolver a minha investigação no âmbito do comportamento do consumidor infantil.

Desse modo estou a estudar o efeito que estratégias de marketing podem ter em cereais saudáveis, necessitando da sua opinião profissional quanto ao conteúdo nutricional de alguns cereais. Para o efeito, nas páginas seguintes começamos por selecionar 6 cereais saudáveis, mais adequados para o pequeno almoço de **uma criança entre os 10 e os 12 anos de idade**, e posteriormente foram selecionados 6 cereais não saudáveis, ou não tão adequados.

Assim, pedia-lhe que **opinasse em relação à categorização** que previamente demos aos cereais, entre saudáveis e não saudáveis. Para o efeito deverá fazer o seguinte:

- Ordenar os cereais entre 1 (o mais saudável) e 6 (o menos saudável), dentro dos cereais saudáveis.
- Ordenar os cereais entre 7 (o mais saudável) e 12 (o menos saudável), dentro dos cereais não saudáveis.

NOTA: Em caso de empate ou no caso de haver dois cereais bastante similares nas suas características, mesmo que indique um como mais saudável em função de outro, peça-lhe que indique essas semelhanças no espaço de comentários dedicado para o efeito.

Obrigado pelo seu tempo.
Com os melhores cumprimentos,

Rui Miguel Santos Coelho

Eu, Ana Raquel Rocha Alves

nutricionista com a cédula profissional nº 3401N, completei este documento

com a minha opinião profissional, na total posse das minhas capacidades profissionais.

Opções Não Saudáveis

10



Nestlé Cereais Nestlé com Caramelo e Chocolate

% INFORMAÇÃO NUTRICIONAL / NUTRITIONAL INFORMATION	Por 100g		Porção (30g)	Porção (30g) em % do valor energético
	Por 100g	Por 30g		
Energia	428 kJ	103 kcal	128 kJ	31%
Proteína	8,0 g	2,0 g	2,4 g	4%
Glúcidos	77,0 g	19,3 g	23,1 g	46%
de que açúcar	1,0 g	0,3 g	0,3 g	1%
de que sacarose	1,0 g	0,3 g	0,3 g	1%
de que lactose	20,0 g	5,0 g	6,0 g	12%
de que outros açúcares	75,0 g	18,7 g	22,4 g	45%
de que álcool	0,0 g	0,0 g	0,0 g	0%
de que fibra alimentar	5,0 g	1,3 g	1,6 g	3%
de que outros	8,0 g	2,0 g	2,4 g	4%
de que fibra alimentar	8,0 g	2,0 g	2,4 g	4%
de que outros	0,0 g	0,0 g	0,0 g	0%
Sódio	0,6 g	0,15 g	0,18 g	0,4%

VITAMINAS E MINERAIS

	Por 100g (%NDR*)	Por 30g (%NDR*)
Vitamina D	0,0 mg (0%)	0,0 mg (0%)
Vitamina B1	0,02 mg (0%)	0,006 mg (0%)
Vitamina B2	0,0 mg (0%)	0,0 mg (0%)
Vitamina B3	0,0 mg (0%)	0,0 mg (0%)
Vitamina B6	0,0 mg (0%)	0,0 mg (0%)
Vitamina B9	0,0 mg (0%)	0,0 mg (0%)
Ácido fólico (B9)	0,0 mg (0%)	0,0 mg (0%)
Ácido ascórbico (C)	0,0 mg (0%)	0,0 mg (0%)
Calcio	0,0 mg (0%)	0,0 mg (0%)
Ferro	0,0 mg (0%)	0,0 mg (0%)

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11



Nacional COOKIEZ TEMOR DOCANTE

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9



Nestlé Cereais Nestlé com Chocolate

% INFORMAÇÃO NUTRICIONAL / NUTRITIONAL INFORMATION	Por 100g		Porção (30g)	Porção (30g) em % do valor energético
	Por 100g	Por 30g		
Energia	1027 kJ	246 kcal	310 kJ	30%
Proteína	8,0 g	2,0 g	2,4 g	4%
Glúcidos	77,0 g	19,3 g	23,1 g	46%
de que açúcar	1,0 g	0,3 g	0,3 g	1%
de que sacarose	1,0 g	0,3 g	0,3 g	1%
de que lactose	20,0 g	5,0 g	6,0 g	12%
de que outros açúcares	75,0 g	18,7 g	22,4 g	45%
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Sódio	0,6 g	0,15 g	0,18 g	0,4%

VITAMINAS E MINERAIS

	Por 100g (%NDR*)	Por 30g (%NDR*)
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7



CONTINENTE Belas de Chocolate

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de que álcool	0,0 g	0,0 g	0,0 g	0%
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de que outros	8,0 g	2,0 g	2,4 g	4%
de que fibra alimentar	8,0 g	2,0 g	2,4 g	4%
de que outros	0,0 g	0,0 g	0,0 g	0%
Sódio	0,6 g	0,15 g	0,18 g	0,4%

VITAMINAS E MINERAIS

	Por 100g (%NDR*)	Por 30g (%NDR*)
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Vitamina B2	0,0 mg (0%)	0,0 mg (0%)
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Opções Não Saudáveis

12

9



	Por 100g	Por 30g	Porção de 30g + 125 ml de leite
Energia	1086 kJ	326 kJ	380 kJ
Proteínas	7,4g	2,2g	6,5g
Carboidratos	72,9g	21,9g	25,9g
Ácidos gordos	1,3g	0,4g	1,3g
Fibra	1,3g	0,4g	1,3g
Sódio	0,33g	0,1g	0,3g



	Por 100g	Por 30g	Porção de 30g + 125 ml de leite
Energia	1086 kJ	326 kJ	380 kJ
Proteínas	7,4g	2,2g	6,5g
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Sódio	0,33g	0,1g	0,3g

Produza um comentário, ou observação, onde mostre o seu nível de concordância com esta seleção.

Tive dificuldade em classificar esta seleção, uma vez que os cereais têm características muito semelhantes. Porém, de acordo com a tabela nutricional, classifiquei de acordo com o teor de gordura e açúcar, uma vez que o teor de fibra é homogêneo.

Uma vez que o teor de açúcar é muito semelhante nos cereais Lion, Chocopic, Bolos de chocolate e Estrelitas, classifiquei de acordo com o teor de gordura.

Segue-se, de acordo com o açúcar, os cereais Cookies e por fim os Choco Cookies.

Contactos: Rui Coelho | +351 930 612 837 | ruimiguelsc.777@gmail.com



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Assim, pedia-lhe que opinasse em relação à categorização que previamente demos aos cereais, entre saudáveis e não saudáveis. Para o efeito deverá fazer o seguinte:

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NOTA: Em caso de empate ou no caso de haver dois cereais bastante similares nas suas características, mesmo que indique um como mais saudável em função de outro, peço-lhe que indique essas semelhanças no espaço de comentários dedicado para o efeito.

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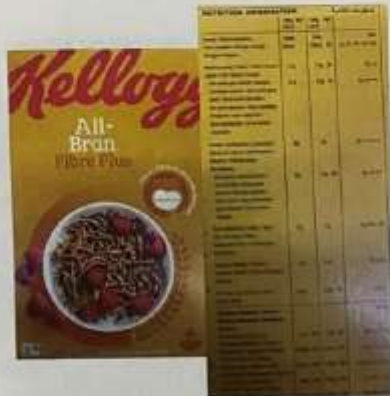
Eu, Ana Rita Targinho Alves

nutricionista com a cédula profissional nº 1942 N, completei este documento

com a minha opinião profissional, na total posse das minhas capacidades profissionais.

Opções Saudáveis

6



3



4



2



Opções Não Saudáveis

12



INFORMAÇÃO NUTRICIONAL / NUTRITIONAL INFORMATION		Por 100g	Por 30g (1/3 de pacote)	Porção (20g)
Valor energético / Energy		1220 kJ	366 kJ (87%)	770 kJ
Graxos / Lipids		10 g	3 g (7%)	4 g
de os quais saturados / saturated		1,3 g	0,4 g (9%)	1 g
hidratos de carbono / carbohydrates		73,4 g	22,3 g (54%)	26,2 g
de os quais açúcares / sugars		22,8 g	7,0 g (17%)	8,6 g
Fibras		1,7 g	0,5 g (12%)	0,6 g
Proteínas		4,2 g	1,3 g (31%)	1,6 g
Sal		0,0 g	0,0 g (0%)	0,0 g
VITAMINAS E MINERAIS				
Vitamina D		2,5 µg (50%)	0,8 µg (20%)	0,7 µg
Tiamina (B1)		0,02 mg (40%)	0,01 mg (25%)	0,01 mg
Riboflavina (B2)		1,2 mg (24%)	0,4 mg (10%)	0,5 mg
Niacina (B3)		1,1 mg (22%)	0,3 mg (8%)	0,4 mg
Vitamina B6		1,1 mg (22%)	0,3 mg (8%)	0,4 mg
Ácido fólico (B9)		1,0 mg (20%)	0,3 mg (8%)	0,4 mg
Ácido pantotâmico (B5)		0,1 mg (20%)	0,03 mg (8%)	0,04 mg
Cálcio		100 mg (20%)	30 mg (8%)	37 mg
Ferro		4,3 mg (77%)	1,3 mg (23%)	1,6 mg

***100% Valores de Referência de Nutrientes (Valores de Referência de Nutrientes).
 Cada embalagem contém aproximadamente 12 porções de 20 g.
 Para informações mais detalhadas consulte o rótulo da embalagem.

8



INFORMAÇÃO NUTRICIONAL / NUTRITIONAL INFORMATION		Por 100g	Por 30g (1/3 de pacote)	Porção (20g)
Valor energético / Energy		1220 kJ	366 kJ (87%)	770 kJ
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Proteínas		4,2 g	1,3 g (31%)	1,6 g
Sal		0,0 g	0,0 g (0%)	0,0 g

10



INFORMAÇÃO NUTRICIONAL / NUTRITIONAL INFORMATION		Por 100g	Por 30g (1/3 de pacote)	Porção (20g)
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Sal		0,0 g	0,0 g (0%)	0,0 g

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7



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Assunto: Pedido de opinião profissional sobre o conteúdo nutricional dos cereais selecionados

Encontro-me a realizar o mestrado em gestão na Faculdade de Economia da Universidade do Porto, FEP, estando neste momento a desenvolver a minha investigação no âmbito do comportamento do consumidor infantil.

Desse modo estou a estudar o efeito que estratégias de marketing podem ter em cereais saudáveis, necessitando da sua opinião profissional quanto ao conteúdo nutricional de alguns cereais. Para o efeito, nas páginas seguintes começamos por selecionar 6 cereais saudáveis, mais adequados para o pequeno almoço de **uma criança entre os 10 e os 12 anos de idade**, e posteriormente foram selecionados 6 cereais não saudáveis, ou não tão adequados.

Assim, pedia-lhe que **opinasse em relação à categorização** que previamente demos aos cereais, entre saudáveis e não saudáveis. Para o efeito deverá fazer o seguinte:

- Ordenar os cereais entre 1 (o mais saudável) e 6 (o menos saudável), dentro dos cereais saudáveis.
- Ordenar os cereais entre 7 (o mais saudável) e 12 (o menos saudável), dentro dos cereais não saudáveis.

NOTA: Em caso de empate ou no caso de haver dois cereais bastante similares nas suas características, mesmo que indique um como mais saudável em função de outro, peço-lhe que indique essas semelhanças no espaço de comentários dedicado para o efeito.

Obrigado pelo seu tempo.
Com os melhores cumprimentos,

Rui Miguel Santos Coelho

Eu, Sérgio Miguel Ribeiro da Silva

nutricionista com a cédula profissional nº 1985N, completei este documento

com a minha opinião profissional, na total posse das minhas capacidades profissionais.

Opções Saudáveis

6



3



4



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Opções Não Saudáveis

12



INFORMAÇÃO NUTRICIONAL	Por 100g		Porção (30g)
	Por 100g	Por 100g	
Energia	420 kcal	1716 kJ	126 kcal
Carboidratos	72,0g	297,6g	21,6g
Proteínas	8,0g	32,0g	2,4g
Gorduras totais	1,0g	4,0g	0,3g
Gorduras saturadas	0,5g	2,0g	0,15g
Gorduras monoinsaturadas	0,5g	2,0g	0,15g
Gorduras poliinsaturadas	0,0g	0,0g	0,0g
Fibra alimentar	1,0g	4,0g	0,3g
Açúcares	10,0g	40,0g	3,0g
Sódio	0,2g	0,8g	0,06g
Cálcio	10,0mg	40,0mg	3,0mg
Ferro	0,5mg	2,0mg	0,15mg

VITAMINAS E MINERAIS

	Por 100g	Por 30g
Vitamina B1	0,2 mg (30%)	0,06 mg
Vitamina B2	0,1 mg (20%)	0,03 mg
Vitamina B3	0,4 mg (8%)	0,12 mg
Vitamina B5	0,1 mg (20%)	0,03 mg
Vitamina B6	0,1 mg (20%)	0,03 mg
Vitamina B9	0,1 mg (20%)	0,03 mg
Cálcio	10 mg (20%)	3 mg
Ferro	0,5 mg (10%)	0,15 mg

*% Valores de Referência de Nutrientes para adultos saudáveis (6000 kcal/2500 kcal).
**% Valores de Referência de Nutrientes para crianças de 4-6 anos.
***% Valores de Referência de Nutrientes para crianças de 7-10 anos.
****% Valores de Referência de Nutrientes para crianças de 11-13 anos.
*****% Valores de Referência de Nutrientes para crianças de 14-17 anos.
*****% Valores de Referência de Nutrientes para adolescentes de 18-24 anos.
*****% Valores de Referência de Nutrientes para adultos saudáveis (6000 kcal/2500 kcal).

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Ferro	0,5 mg (10%)	0,15 mg

Opções Não Saudáveis



% INFORMAÇÃO NUTRICIONAL			
	Por 100 g	Por 30 g	Porção de 50 g (125 ml de leite com leite)
Energia	1889 kJ 260 kcal	566 kJ 135 kcal	793 kJ 189 kcal
Lipídios de que saturados	3,4 g 6,6 g	1,0 g 8,2 g	3,7 g 1,7 g
Matéria de carbono de que açúcares	28,1 g 24,7 g	23,4 g 7,4 g	20,4 g 13,2 g
Fibra	6,4 g	1,9 g	1,9 g
Proteínas	7,6 g	2,2 g	6,5 g
Sal	0,30 g	0,11 g	0,75 g

OTIMIZAÇÃO E MINÉRIOS

	Por 100 g (NUTRI)	Por 30 g	Porção de 50 g (125 ml de leite com leite)
Trióxido de Boro (B)	0,20 mg (20%)	0,06 mg	0,07 mg
Trióxido de Sódio (Na)	0,02 mg (20%)	0,006 mg	0,01 mg
Dióxido de Silício (Si)	1,24 mg (20%)	0,37 mg	0,46 mg
Trióxido de Cálcio (Ca)	16,0 mg (20%)	4,80 mg	6,00 mg
Trióxido de Magnésio (Mg)	1,0 mg (20%)	0,30 mg	0,37 mg
Trióxido de Fósforo (P)	100 mg (20%)	30,0 mg	37,5 mg
Trióxido de Potássio (K)	0,75 mg (20%)	0,22 mg	0,28 mg
Cálcio	40,0 mg (20%)	12,0 mg	15,0 mg
Ferro	0,34 mg (20%)	0,10 mg	0,12 mg

*100% Valores de Referência de Nutrientes. O consumo de Nestlé é inferior ao recomendado.

Produza um comentário, ou observação, onde mostre o seu nível de concordância com esta seleção.

Optei por classificar os cereais considerados "menos saudáveis" de acordo com os teores de açúcar e gordura, sendo o alto teor de gordura um fator que aumenta a palatabilidade dos cereais e, por tanto propencia o consumo em altas doses destes produtos alimentares.

Nota-se que o teor de açúcar é semelhante em todos apresentando valores elevados.

Assim, optei por ordenar de menor para maior teor de gordura.

Appendix 6: Supplementary Tables

<i>Age</i>	Frequency	Percent	Valid Percent	Cumulative Percent
10	58	38.4	38.4	38.4
11	73	48.3	48.3	86.8
12	20	13.2	13.2	100.0
Total	151	100.0	100.0	

Table 30: Descriptive statistic of age.

<i>Gender</i>	Frequency	Percent	Valid Percent	Cumulative Percent
Male	74	49.0	49.0	49.0
Female	77	51.0	51.0	100.0
Total	151	100.0	100.0	

Table 31: Descriptive statistic of gender.

<i>Manipulation Check</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	2.0	2.5	2.5
	Yes	118	78.1	97.5	100.0
	Total	121	80.1	100.0	
Missing	Question not applicable	30	19.9		
Total		151	100.0		

Table 32: Descriptive statistic of manipulation check.

<i>TV School Day</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	11	7.3	7.3	7.3
	Less than 1h	53	35.1	35.1	42.4
	Between 1h and 2h	82	54.3	54.3	96.7
	Between 3h and 4h	4	2.6	2.6	99.3
	More than 4 h	1	0.7	0.7	100.0
Total		151	100.0	100.0	

Table 33: Descriptive statistic for TV school day.

<i>TV Weekend Day</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	1	0.7	0.7	0.7
	Less than 1h	10	6.6	6.6	7.3
	Between 1h and 2h	59	39.1	39.1	46.4
	Between 3h and 4h	60	39.7	39.7	86.1
	More than 4 h	21	13.9	13.9	100.0
Total		151	100.0	100.0	

Table 34: Descriptive statistic for TV weekend day.

<i>Eating Frequency</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	37	24.5	24.5	24.5
	1 to 2 times	46	30.5	30.5	55.0
	3 to 4 times	32	21.2	21.2	76.2
	5 to 6 times	15	9.9	9.9	86.1
	Every day	21	13.9	13.9	100.0
	Total		151	100.0	100.0

Table 35: Descriptive statistic for cereal eating frequency.

<i>Eat Lion</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	144	95.4	95.4	95.4
	Yes	7	4.6	4.6	100.0
Total		151	100.0	100.0	

Table 36: Descriptive statistic for eating Lion.

<i>Eat Nacional Zero</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	140	92.7	92.7	92.7
	Yes	11	7.3	7.3	100.0
Total		151	100.0	100.0	

Table 37: Descriptive statistic for eating Nacional Zero.

<i>Eat Weetabix</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	151	100,0	100,0	100,0
	Yes	0	0.0	0.0	0.0
Total		151	100.0	100.0	

Table 38: Descriptive statistic for eating Weetabix.

<i>Eat Nacional Cookie'z</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	143	94.7	94.7	94.7
	Yes	8	5.3	5.3	100.0
Total		151	100.0	100.0	

Table 39: Descriptive statistic for eating Nacional Cookie'z.

<i>No. of Ate Cereals</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	32	21.2	21.2	21.2
	1	57	37.7	37.7	58.9
	2	51	33.8	33.8	92.7
	3	9	6.0	6.0	98.7
	4	2	1.3	1.3	100.0
	Total		151	100.0	100.0

Table 40: Descriptive statistic for the number of ate cereals.

<i>Eat Chocapic</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	104	68.9	68.9	68.9
	Yes	47	31.1	31.1	100.0
Total		151	100.0	100.0	

Table 41: Descriptive statistic for eating Chocapic.

<i>Eat CornFlakes</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	137	90.7	90.7	90.7
	Yes	14	9.3	9.3	100.0
Total		151	100.0	100.0	

Table 42: Descriptive statistic for eating CornFlakes category.

<i>Rec. Lion</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	37	24.5	24.5	24.5
	Yes	114	75.5	75.5	100.0
Total		151	100.0	100.0	

Table 43: Descriptive statistic for recognizing Lion.

<i>Rec. Nacional Zero</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	104	68.9	68.9	68.9
	Yes	47	31.1	31.1	100.0
Total		151	100.0	100.0	

Table 44: Descriptive statistic for recognizing Nacional Zero.

<i>Rec. Weetabix</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	132	87.4	87.4	87.4
	Yes	19	12.6	12.6	100.0
Total		151	100.0	100.0	

Table 45: Descriptive statistic for recognizing Weetabix.

<i>Rec. Nacional Cookie'z</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	71	47.0	47.0	47.0
	Yes	80	53.0	53.0	100.0
Total		151	100.0	100.0	

Table 46: Descriptive statistic for recognizing Nacional Cookie'z.

<i>Correct Source</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Incorrect	101	66.9	83.5	83.5
	Correct	20	13.2	16.5	100.0
	Total	121	80.1	100.0	
Missing	Question not applicable	30	19.9		
Total		151	100.0		

Table 47: Descriptive statistic for getting the correct placement source.

<i>Correct Intent</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Incorrect	72	47.7	59.5	59.5
	Correct	49	32.5	40.5	100.0
	Total	121	80.1	100.0	
Missing	Question not applicable	30	19.9		
Total		151	100.0		

Table 48: Descriptive statistic for getting the correct placement intent.

<i>No. Correct Answers</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Incorrect	61	40.4	50.4	50.4
	Correct	51	33.8	42.1	92.6
	Total	9	6.0	7.4	100.0
Missing	Question not applicable	121	80.1	100.0	
Total		151	100.0		

Table 49: Descriptive statistic for number of correct answers on the persuasive intent category.