Booklet 1 of 2

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The influence of sports events endorsement on children's perceptions of healthy food products and brands

Catarina Campos, 2095

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Professor Luísa Agante

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Abstract

This study aims to explore and evaluate the impact of sports marketing on children's food choices, more specifically, how different sports marketing strategies on healthy cereals targeted to children can have an impact on their attitudes towards the product and the brand, and on the way they perceive the importance of healthy food consumption and physical activity.

For that purpose, two different strategies were tested: a customized package of healthy cereals: CornFlakes and a fictitious agreement between a brand and a club to promote the cereals. The study was conducted on 154 children aged between 7 and 16, using structured questionnaires to measure the effect of the strategies.

Findings suggest that children already have some knowledge about the importance of healthy food consumption and physical activity. Nevertheless, it does not imply that they make the right choices. Results suggest that the tested marketing strategies can influence children's attitudes and purchase intentions, meaning that they can be used to promote children's healthy eating habits.

Keywords: children, sport marketing, healthy food, physical activity

Table of Contents

Introduction

According to the World Health Organization, the number of overweight or obese infants and young children worldwide will increase to 70 million by 2025 (WHO 2014). This is particularly problematic since they will likely continue to be overweighed and obese during childhood, adolescence and adulthood. In the developing countries, the increase rate on childhood obesity has been more than 30% higher than in the developed countries. In Europe, 20% of the school-aged children are carrying excess body fat, and a quarter of those are obese (Matthews, 2007).

There are several causes associated to this reality and one of them is the fact that children are frequently exposed to and influenced by persuasion attempts through food advertising (Roberto et al., 2010) that can have long-term effects (Connel, Brucks & Nielson, 2010). Sport marketing has a significant importance regarding this topic given that, if directed at children, it will allow brands to be embedded within their experiences of entertainment and socialization (Bridget, 2012). Sport marketing is characterized as "marketing through sport; that is using sport as a promotional vehicle or sponsorship platform for companies that market consumer, and to a lesser extent, industrial products" (Gray & McEvoy, 2005: p. 229). Two major thrusts have been developed: "the marketing of sport products and services directly to consumers of sport, and the marketing of other consumer and industrial products or services through the use of sports promotions" (Mullin, Hardy, and Sutton, 2000: p. 9).

Aiming at aligning the health related issues on children and the previous concept, the focus of this paper will be on marketing of healthy food and beverage products to children through the use of sports promotions. The goal of this research is to see whether it is possible to positively influence children's food consumption with healthy food promotion using sport marketing. Furthermore, it aims at understanding what are the most accurate strategies and how can brands fulfill this need for healthiness in society and, at the same time, improve their position in the market.

Literature Review

Children as consumers

Children are considered the future market for every producer (McNeal, 1999) since they develop preferences for certain brands when they are young (Roedder-John 1999). This implies that it is essential to constantly consider them as consumers, recognize the ubiquity of the market place in their everyday lives and understand how they experience this commercial world (Marshall, 2010). The main goal is to understand the consumer socialization processes that can be defined as "processes by which young people acquire skills, knowledge, and attitudes relevant to their functioning as consumers in the market place" (Ward, 1974: p.2).

Stages of Cognitive Development

There are different stages of children development according to Piaget's theory of cognitive development (Piaget & Inhelder, 1972): sensorimotor (birth to 2 years), preoperational (2 to 7 years), concrete operational (7 to 11 years), and formal operational (11 though adulthood).

In the sensimotor stage, children have a limited knowledge since it is based on physical interactions and experiences. Their early language development begins such as their memory development. In the preoperational stage, children keep on developing memory and imagination. In this stage they can express relationships between the past and the future but it is noteworthy the fact that their intelligence is egocentric and intuitive, not logical.

The concrete operational stage implies the use of logic and systematic manipulation of symbols and children become less egocentric. There is an increase awareness about the external environment. Finally, in the formal operational stage they are already able to think about multiple variables in systematic ways, as well as formulate hypothesis and think abstractly.

The issue of healthiness

Childhood obesity is one of the most serious public health challenges of the 21st century (WHO 2014). According to the WHO, 42 million children under the age of five were overweight or obese in 2013 and the worldwide prevalence of obesity more than doubled between 1980 and 2014. Moreover, estimates from the WHO's Childhood Obesity Surveillance Initiative (COSI) stated

that around 1 in 3 children in the EU aged 6-9 years old were overweight or obese in 2015, which is specially worrying when compared to 1 in 4 children in 2008.

In 2003, a joint report published by the Food and Agriculture Organization and the WHO was already warning society to the fact that heavy marketing of food outlets and energy dense, micronutrient poor foods and beverages was the probable causal factor in overweight and obesity, and should be a target for future interventions. The previous fact is confirmed with a more recent systematic review commissioned by WHO in 2008, where it is stated that "food advertising has a modest impact on nutrition knowledge, food preference and consumption patterns" (Angus, Cairns and Hastings, 2009: p. 3).

A healthy diet aligned with a physically active lifestyle will contribute to a healthy growth and development, reducing the risk of overweight and obesity (EU Action Plan on Childhood Obesity, 2014[1]). In turn, it emphasizes the importance of the present research due to its goal of understanding how to create positive synergies between marketing, sports and children.

Sport Marketing and the Food Industry

There are two types of products associated with sports. On the one hand, there is the marketing of sports' products, and on the other hand there is the marketing of non-sports' products through sport. The later will be the focus of this research and is characterized as marketing through sport. This type of technique is "using sport as a promotional vehicle or sponsorship platform for companies that market consumer, and to a lesser extent, industrial products" (Gray & McEvoy, 2005: p. 229). The previous tool can be used to send helpful messages to children by emphasizing the importance of physical activity. However, marketers need to be extremely careful on the selection of the products to promote using these techniques to avoid negative effects through the association of health messages with unhealthy products (Bragg et al., 2013). Several studies have documented that a considerable percentage of the overall advertising targeting children features candy, fast food, and snacks and that such advertising has an impact on consumption (Wilcox et al., 2004).

[1] Action Plan on Childhood Obesity 2014-2020 24 February 2014 [updated 12 March and 28 July 2014] http://ec.europa.eu/health/nutrition_physical_activity/docs/childhoodobesity_actionplan_2014_2020_en.pdf

Domains of marketing through sports

There are four domains of marketing through sports which are identified as theme-based strategies, product-based strategies, alignment-based strategies, and sports-based strategies. For the non-sports' products, commonly advertised through the use of sports platforms or themes as part of a marketing strategy, the most used strategies are the theme-based and alignment based strategies (Fullerton & Merz, 2008).

"**Theme-based strategies** can be defined as the use of traditional marketing strategies that incorporate a sports theme into the marketing program for non-sports' products" (Fullerton & Merz, 2008: p.7). Belonging to the category of traditional integration, it does not involve an official relationship with a sports entity and it comprises a target market and a corresponding marketing mix, thus it represents the lowest level of integration of sports within the sports marketing environment. The list of strategies aiming at incorporating sports into the marketing mix is endless **(appendix 1)** and the question for this type of strategy is how can the firm integrate different components of the marketing mix: product, promotion, pricing or distribution, in order to benefit from the opportunities of the sports environment (Fullerton & Merz, 2008).

Alignment-based strategies involve sponsors who use an association with sports to market non-sports products, which reflects a higher level of integration within the sports marketing environment. For these marketers, the goal is to implement strategic initiatives **(appendix 2)**, which are alternatively characterized as leveraging or activation, to capitalize their position within the sports environment. There are different forms of sponsorship. The traditional sponsorship that "generally involves the acknowledgement of the sponsor by the sports property and the ability of the sponsor to use the property's trademarks and logos in its efforts to leverage the sponsorship and reinforce the relationship in the minds of members of the sponsor's target market" (Fullerton & Merz, 2008: p.6). The venue naming rights, characterized as building sponsorships, are the relationship between the team and the marketer (Zoltak, 1998). Moreover, the International Events Group (IEG) referred to them as title sponsorship deals (Ukman, 2002). Still, "naming rights are the most expensive sport marketing investment in the present market place and it is also regarded as the less utilized mode of sponsorship"

(Friedman according to Mullin et al., 2007, p. 332). Furthermore, the endorsement is also a type of strategy and has been referred to as personal sponsorships where an endorser can put his or her name on products and appear in advertising and elsewhere as an advocate for a brand (Aaker & Joachimsthaler 2000). Finally, licensing involves having property rights where the licensee is the party acquiring the right to use the name etc. of a sportsperson or organization and the sportsperson or organization is the licensor (Felt, 2003).

Hypothesis

The influence of healthy food promotion through sports

Bearing in mind the fact that from adolescence onwards the levels of each individual's physical activity tend to decrease (Wang, Pereira & Mota, 2006), there is the need to create awareness regarding the importance of sports in early stages. Nevertheless, there is little documentation of the extent and impact of physical activity and sports being used to market food (Bragg et al., 2012), and how is it possible to create positive synergies between healthy food promotion through sports and the lifestyle of children.

It is noteworthy the fact that the promotion of "unhealthy" food can influence children nutrition knowledge, food preferences and consum ption patterns (Hastings et al., 2006). Thus, for the purpose of this study, there will be an analysis on healthy food promotion aligned with sports in order to access the following hypothesis:

H1: Healthy food promotion through sports will positively influence children food consumption and the knowledge about the importance of physical activity.

Additionally, it is relevant to mention the concepts of recall and awareness once they explain the ability of children to remember products and brands that they have seen as well as the process of recognizing and understanding the content of the message they are seeing (Marshall, 2010), which can vary according to the stages of development. Likewise, different literacy levels vary with age and children have different processes of persuasion operating at different ages (Livingstone and Helsper, 2006).

In fact, younger children tend to view advertising as truthful, accurate and unbiased (Kelly, 2011). For the specific case of sponsorship, the few studies available indicate that there is a

greater influence of this technique on younger children. (Hastings, et al. 2006) Thus, we expect that:

H1a: The influence of healthy food promotion through sports on children will be greater in the case of younger children than older children.

Lastly, the regional social-economic disequilibrium that can be found in Portugal has been underlined in empirical research since long. There is a sharp contrast between the north and the south territory, as well as between a coastal territory and the inland one. Results from recent research suggest the persistence of this disequilibrium (Silva & Ribeiro, 2013). In fact, it is possible to find levels of urbanization that go from under 50% to above 80%. Thus, it is expected that the contrast will generate different results:

H1b: The influence of healthy food promotion through sports on children will depend on the region of the country they live in.

Factors affecting the success of healthy food promotion through sports

As it was previously explained, there are different ways of promoting non-sports products through sports that imply different levels of integration. As so, marketers need to understand what are the products directed at their audience and how to develop the best strategy to meet their needs in order to take full advantage of opportunities (Fullerton and Merz, 2008). Thus, predicting different effects on knowledge, image, reputation and attitude/affection towards the brand according to the level of integration, we expect that:

H2: The success of the "marketing through sports" strategies in children will be higher the higher the level of integration within the sports marketing environment.

Furthermore, it is noteworthy that there is an increasing awareness on how children shall develop their advertisement literacy in order to have a lower probability of being unfairly influenced by advertising (Rozendaal et al. 2011).

Psychosocial researches have shown evidence on the fact that children aged less than eight years are highly vulnerable to advertising and marketing and that younger children will be less able to understand the persuasive intent of marketing actions (Kunkel et al., 2004). According to Ward et al. (1977), the age as a positive impact on the awareness of different advertising

sources. Therefore, in order to reach the goal of influencing children food consumption and the knowledge about the importance of physical activity, marketers need to understand how children are going to perceive the message. For that purpose, we predict that:

H2a: The "marketing through sports" strategies used in children will be better perceived the older the children are due to their increasing ability to recognize the persuasive intent and the goals of the brand.

Methodology

Legal and Ethical Issues

All ethical and legal requirements and the directives recommended by UNICEF (2002) that guarantee the protection of children rights were followed. Thus, before performing the questionnaires, I obtained the proper consent from the team where the research was conducted, the children's parents **(Appendix 3)** and the children. The purpose of the research was clearly explained to the children and the parents. Moreover, it was clarified that there were no right or wrong answers and that it would be confidential and anonymous so that the social desirability effect was reduced (Podsakoff et al., 2003).

Sample

This research investigates children in the concrete operational stage (7-11) because it is when they can conceptualize multiple dimensions of a task or problem. On the previous stages, children have limited cognitive capacities to process advertising messages (Roedder-John, 1999). Additionally, in the later years of this phase, they demonstrate the ability to evaluate advertised products on a range of criteria and dimensions and consider alternative products (Valkenburg & Cantor, 2001). Furthermore, in order to better understand the different effects of healthy food promotion within cognitive stages, it also focused on the beginning of the formational operational stage (12-16) where young people already function cognitively much like adults, thinking abstractly and making inferences. In fact, the specific tactics and techniques used by professional communicators are better understood (Boush, Friestad, & Rose, 1994).

In addition, the selected population was Portuguese children living in Lisboa and Guarda. These Portuguese cities present different levels of urbanization and are located in distinct areas of Portugal. Lisboa is located in the coastal and south region (highly urbanized) while Guarda is

located in the inland and north region (less urbanized). Thus, this selection aims at testing the influence of healthy food promotion through sports on children according to the level of urbanization of the city they live in.

Research Design

The research used structured questionnaires **(Appendix 4)** since they allow researchers to get in-depth information regarding specific subjects. Moreover, they can reach a higher number of respondents, and present a relatively low bias (Podsakoff et al., 2003). To assure that children could easily understand the questionnaires and that there was no ambiguity, simple questions and easy wording were used (Tourangeau et al., 2000).

In order to reduce brand familiarity bias, the questionnaires used a white labeled brand from MiniPreço: Dia. Moreover, it focused on the fictitious use of two strategies of marketing trough sports for non-sport products (theme-based strategy and alignment-based strategy). The strategies were used with a healthy product in order to test the hypothesis regarding the influence in healthy food consumption.

Since breakfast provides many nutritional and health benefits for the children, I choose breakfast cereals as the product to be tested. In fact, there is a strong link between regular breakfast consumption and cognitive performance as well as physical performance. Breakfast cereals represent a healthy breakfast choice when high in carbohydrates and low in fat. Nevertheless, not all the cereals are healthy enough and studies suggest that children who eat high-sugar breakfasts have more problems at school. Thus, the sugar content of some children's breakfast cereals is a problem that shall be taken into consideration (Pestano, 2011).

For the experiment we needed two versions of cereals **(Appendix 5)**: healthy option and unhealthy option. For the healthy option we used corn flakes because they are the best choice in terms of least amount of sugar and sodium, according to the specialists (Montellano, 2015). As for the unhealthy option we analyzed the cereals that were the leaders in the children's category. Even though chocolate cereals are leaders in Portugal, they were not used as the alternative hypothesis given that it is very difficult to resist them. Thus, honey cereals were used as the alternative to the healthy option (Montellano, 2015).

Lastly, a pre-test was conducted with five children. The goal was to use children within the age range to validate the language, to understand whether there were necessary adjustments in terms of wording or meaning and to see if the changes in the packaging were clear.

Procedure

In the main study, participants were randomly assigned to three groups: a control group, where they do not receive any stimulus, and two experimental groups, where they were subject to a controlled variable (treatment effect). The experimental groups were subject each to a different type of strategy using sports, theme-based (experimental group 1) or alignment-based (experimental group 2).

Three different choice tasks were designed. Two of them, for the control group and the experimental group 2, the goal was for the children to choose between two boxes of cereals without any additional stimulus. In the other one, for the experimental group 1, the goal was for the children to choose between two boxes of cereals with one of them having an image related with sports. As mentioned before, theme-based strategies imply a lower integration within the sports environment. As so, this group was exposed once to the presence of the stimulus, when answering the questionnaire.

Experimental group 1 (theme-based strategy) was composed of 124 children within the age range and located in the chosen areas, Lisbon and Guarda. Experimental group 2 (alignment-based strategy) used a smaller group of 30 children from Lisbon only. In order to simulate an official relationship with a sport's entity (experimental group 2) I used a fictitious case of an agreement between a brand and a club, where the brand had the opportunity of being present in different events of the club. This allowed children to be in contact with the stimuli more often. The use of a smaller group is justified due to the fact that it implies a longer period spent with the children. As so, during two weeks, those children were subject to a stimulus during their weekly practices and other events in the club. More precisely, children could see their coaches using t-shirts promoting the healthy cereals of Dia **(Appendix 6)**. The goal was to create awareness on a regular basis and to do it using people that they value a lot, the coaches. After these two weeks, they responded to a questionnaire where the boxes presented were the same as in the questionnaire of the control group.

Measures

The following measures were used in the final questionnaire. To measure children's attitude towards the product a three-item 5-point semantic differential scale was used since it is meaningful when doing research with children (Greig et al., 2007). It was based on the one used by Dixon et al. (2007). I have chosen to use items that have already been used in research with children. Namely, the chosen terms were "boring vs fun", "unfamiliar vs familiar" and "tastes good vs tastes bad" (Mcalister & Cornwell, 2012; Pires & Agante, 2011). To measure purchase intentions, children were asked if they would like to buy or ask the parents to buy the product (Phelps & Hoy 1996) and if they would like to eat the cereals (Pires & Agante, 2011). The possible answers used a Likert scale from 1 = Do not like at all to 5 = Love. To evaluate the brand image transference, children were asked what do they thought about the brand producing those cereals using a 5-point smiley face Likert scale from 1 = Not at all to 5 = A lot (Driesener & Romaniuk 2006). They were asked if the brand was: *Fun, Cool, Good quality/taste, Concerned with an healthy diet and physical health*; (question adapted from Simões & Agante, 2014).

On the following, to measure if children understood the persuasive intent, only the experimental groups were used, since the answers would be according to the stimulus. The first experimental group was asked to guess who had put the ad on the cereals and what the source that placed the ad on the cereals wanted them to do. A question designed on previous experiments conducted by Donohue et al. (1980) and Macklin (1987). The answers for the first question provided were three images with their respective written description: "The brand", "The person who did this questionnaire" and "Other". For the second question the options were: "Buy the brand's products", "Use the brand's products", "Play sports" and "Other". This question was important to access the difference between buy and use, since it is related to different concepts of buying intention and the intention to use. For the persuasive intend to be understood the child has to recognize the specific buying intent (Macklin, 1987). Moreover, children in the second experimental group were asked who would have had the idea of promoting the cereals to them – a question adapted from Oates et al. (2003). The answers were four labeled pictures showing the brand, the coaches of the club, the person doing the study or other source. Children should choose the brand if answering correctly. The questions had pictorial cues since early

studies have shown that non-verbal measures allow for a more accurate perception of children's abilities (Donohue et al., 1980; Macklin, 1987).

To measure reliability, children were asked if it made sense for them the association between the cereals and sports. The answers also used a 5-point Likert scale with smiley faces ('not at all' to 'a lot').

Finally, to measure children's attitudes towards healthy eating, I used a procedure adapted from a previous experiment carried out by Sangperm et al. (2008). Also the attitude towards sports was tested. These variables were measured by using a 5-point Likert scale, from 1="completely disagree" to 5="completely agree", with 4 items: "Eating healthy is very important to me", "I plan to eat more healthy products from now on", "Playing sports is very important" and "Playing sports and eating healthy food will help me grow and become healthier".

It is noteworthy the fact that all the questions are multiple choice, since it is a less cognitively demanding technique, when compared to open-ended questions, that is more appropriate for the children in the target group due to their language limitations and memorial retrieval abilities. Thus, studies have demonstrated considerably higher levels of comprehensibility with the former technique (Donohue et al., 1980; Macklin, 1983, 1887; Rozendaal et al., 2011).

Results

This study was conducted with children aged between 7 and 16 years old and had 154 respondents from two different cities (Table 1), equally distributed by gender (55.2% boys).
As previously explained, the sample was divided in 3 groups: control group (60), experimental group 1 (64) and experimental group 2 (30). The analysis was conducted in SPSS 20.3 and used. parametric (t-tests and ANOVA) and non-parametric tests (chi-square) to test the hypothesis.

Table 1: Distribution of the sample per age and location

	Lisboa (urban)	*Guarda (rural)*	*Total*
7-11	47 (31%)	31 (20%)	78 (51%)
12-16	44 (28%)	32 (21%)	76 (49%)
Total	91 (59%)	63 (41%)	154 (100%)

Children's attitude towards the healthy cereals

The means were computed for each item related with attitude towards the product for the three groups and an ANOVA test (table 2) was performed to test the significance of the differences between the means. Results showed that the differences were significant (p=0,000) except for the item "familiarity" (p=0,383). All the tests performed on the non-healthy cereals were, as we expected, not statistically significant.

Afterwards, t-tests were conducted on the mean differences between the control group and the experimental group 1, the control group and the experimental group 2 and between the experimental groups. Only the first two tests were statistically significant (table 3). Thus, there is a significant difference between the control group and the experimental groups regarding the attitude towards the product.

*Table 2: **Attitude towards the product**: ANOVA test by group*

		Brand Familiarity	Fun	Taste	Overall Attitude (fun+taste)
Healthy Cereals (a)	CG	3,02	2,95	3,07	3,01
	EG1	2,93	3,77	3,92	3,845
	EG2	3,43	3,77	3,87	3,82
P-value ANOVA test		0,383	0,000	0,000	0,000
Non-Healthy Cereals	CG	2,40	3,38	3,77	3,575
	EG1	2,38	3,41	3,80	3,605
	EG2	2,17	3,77	3,83	3,8
P-value ANOVA test		0,756	0,985	0,965	0,975

*Table 3: T-tests for **Attitude towards the product** (Healthy Cereals)*

	Control Group	Experimental Group 1	Experimental Group 2	CG vs EG1 (p-value)	CG vs EG2 (p-value)	EG1 vs EG2 (p-value)
Fun	2,95	3,77	3,77	0,000	0,000	0,996
Taste	3,07	3,92	3,87	0,000	0,001	0,996

Purchase intention

Regarding purchase intentions we obtained similar results as in the case of attitudes. The ANOVA test (table 4) showed that the differences between groups were significant (p=0,02) and the t-tests that were conducted between the groups (table 5) showed that only the first two tests

were statistically significant (p=0,000 and p=0,05). Thus, there is a significant difference between the control group and the experimental groups regarding purchase intentions but not between both experimental groups.

*Table 4: **Purchase intention** of healthy and non-healthy cereals: ANOVA test by group*

	CG	EG1	EG2	P-Value
Healthy Cereals	2,92	3,56	3,43	0,02
Non-Healthy Cereals	2,87	3,05	3,13	0,625

*Table 5: T-tests for **Purchase Intention** (Healthy Cereals)*

	CG	EG1	EG2	CG vs EG1 (p-value)	CG vs EG2 (p-value)	EG1 vs EG2 (p-value)
Purchase Intention	2,92	3,56	3,43	0,000	0,050	0,597

Brand Image Transference

We conducted an ANOVA test (table 6), and the differences between groups were significant for all the 4 adjectives regarding brand image transference: fun, cool, quality/tasty and health concerns. The T-tests between the groups (table 7) showed that the mean differences between control group and experimental group 1 were statistically significant for all items, as well as the mean differences between the control group and the experimental group 2. As so, there was a brand image transference on the healthy cereals by the use of sports.

*Table 6: **Brand Image Transference**: ANOVA test by group*

		Fun	Cool	Quality/Tasty	Health Concerns	Overall Image
Healthy Cereals	CG	3,22	3,08	3,47	3,52	3,3225
	EG1	3,80	3,81	3,86	4,11	3,895
	EG2	4,10	4,03	4,26	4,30	4,1725
P-Value ANOVA test		0,000	0,000	0,001	0,000	0,000
Non-Healthy Cereals	CG	3,40	3,42	3,90	3,45	3,5425
	EG1	3,43	3,34	3,78	3,36	3,4775
	EG2	3,47	3,57	3,77	3,13	3,485
P-value ANOVA test		0,966	0,675	0,764	0,542	0,737

*Table 7: T-tests for **Brand Image Transference** (Healthy Cereals)*

	Control Group	Experimental Group 1	Experimental Group 2	CG vs EG1 (p-value)	CG vs EG2 (p-value)	EG1 vs EG2 (p-value)
Fun	3,22	3,80	4,10	0,000	0,000	0,148
Cool	3,08	3,81	4,03	0,000	0,000	0,237
Quality	3,47	3,86	4,26	0,018	0,000	0,068
Health	3,52	4,11	4,30	0,000	0,001	0,275

Age

In order to evaluate the impact of age on attitude towards the product, purchase intention and the transference of brand image, t-tests were used (table 12) to analyze the mean differences between respondents in the group 7-11 years old and respondents in the group 12-16 years old. The results showed that for all the items, except for the adjective *Fun* (Brand), the mean of the younger group was higher but this difference was not statistically significant (p=0,665).

Table 12: T-test on Attitude towards the brand, purchase intentions and brand image transference by age

	Fun (product)	Taste (product)	Purchase Intentions	Fun (Brand)	Cool	Taste/Quality (Brand)	Health concerns
7-11	4	4,09	3,77	3,85	4,04	4,19	4,36
12-16	3,53	3,72	3,28	3,94	3,72	3,77	3,98
p-value	0,027	0,058	0,029	0,665	0,065	0,025	0,017

Location

In order to analyze the differences based on location t-tests and chi-square tests were conducted on the control group and on experimental group 1, and by comparing the differences between control group and experimental group 1.

Starting with the analysis on the differences of the **control group** it provided interesting insights about purchasing patterns. In fact, even without any strategy used on the cereals, the buying intent was already higher in the city of Lisboa ($\bar{x}_{Lisboa}$= 3,17; $\bar{x}_{Guarda}$=2,67; p=0,043). Also, when questioned on whether the brand selling the healthy cereals had concerns regarding healthiness and physical activity, there were also significant differences and the mean was higher in the city of Guarda ($\bar{x}_{Lisboa}$= 3,20; $\bar{x}_{Guarda}$=3,83; p=0,016).

Afterwards, when analyzing the **experimental group 1**, the results from the t-test showed that the differences were not significant for fun product and tasty product (p=0,380 and p=0,167). However, the chi-square test **(appendix 7)** provided some significant results regarding an association between city and the adjective *Taste* (p=0,044).

The t-test conducted for differences on the purchase intention (table 8) showed that it was significant at a 10% level (p=0,063). Moreover, the chi-square test (table 9) provided some significant results regarding an association between city and the purchase intention (p=0,05).

Table 8: T-test for purchase intention by city (healthy cereals)

	EG1 Lisboa	**EG2 Guarda**	**P-Value**
Purchase Intention	3,43	3,08	0,063

Table 9: Purchase intention by city: chi square analysis

	Scale				
Purchase Intention	- -	-	- +	+	+ +
Lisboa	2,4%	5,6%	16,9%	16,9%	7,3%
Guarda	6,5%	2,4%	25%	14,5%	2,4%
P-Value			0,050		

Lastly, the t-test conducted for brand image transference **(appendix 7)** showed that only the differences in the mean of health concerns were statistically significant (p=0,02). Nevertheless, the chi-square test (table 10) provided some significant results regarding an association between city and all the items for brand image transference.

Table 10: Attitudes towards the brand by location: Chi-Square Analysis

		Fun		Cool		Quality		Health	
		Lisboa	**Guarda**	**Lisboa**	**Guarda**	**Lisboa**	**Guarda**	**Lisboa**	**Guarda**
Scale	**- -**	2,4%	0,8%	0,8%	2,4%	0,8%	0,8%	1,6%	1,6%
	-	5,6%	0,0%	7,3%	0,0%	4,8%	0,8%	1,6%	0,8%
	- +	19,4%	23,4%	21,8%	24,2%	21,8%	16,1%	21%	7,3%
	+	12,9%	20,2%	12,1%	18,5%	10,5%	23,4%	14,5%	26,6%
	+ +	8,9%	6,5%	8,1%	5,6%	11,3%	9,7%	10,5%	14,5%
P-Value		0,008		0,001		0,023		0,004	

Moreover, aiming at analyzing the **changes between the control group and the experimental group 1** in the different cities, t-tests were performed separately. Thus, regarding overall attitude towards the product, results showed that the differences were statistically significant both in Lisbon ($\bar{x}_{Control}$= 3,15; $\bar{x}_{Experimental1}$=3,935; p=0,004) and Guarda ($\bar{x}_{Control}$= 2,87; $\bar{x}_{Experimental1}$=3,76; p=0,002). The same happened for purchasing intention in Lisbon ($\bar{x}_{Control}$= 3,27; $\bar{x}_{Experimental1}$=4; p=0,054) and Guarda ($\bar{x}_{Control}$= 2,67; $\bar{x}_{Experimental1}$=3,45; p=0,002). For brand image transference, the impact on the items fun and cool was statistically significant at a 5% level in both cities but the item quality/tasty was not statistically significant in Lisboa and the item health was not statistically significant in Guarda (Table 11).

Table 11: T-tests on Brand Image Transference by City

	Fun		**Cool**		**Quality**		**Health**	
	CG	**EG1**	**CG**	**EG1**	**CG**	**EG1**	**CG**	**EG1**
Guarda	3,33	3,88	3,07	3,88	3,53	4,03	3,83	4,18
P-Value	0,004		0,000		0,016		0,131	
Lisboa	3,10	3,71	3,10	3,74	3,4	3,68	3,2	4,03
P-Value	0,025		0,007		0,280		0,000	

Attitudes towards healthy eating and sports

The last part of the questionnaire aimed at understanding if children recognize the importance of healthy eating and sports and if they were willing to improve their eating habits. Results showed that the majority of the children on all groups answered with agree or totally agree to all the sentences: 95,4% for the importance of healthy eating, 92,8% for the importance of practicing sports, 97,4% for the help of those factors in growth and healthiness and 94,1% for the willingness to eat more healthy. To test attitudes towards healthy eating and sports and compare the results obtained in the different groups we performed an ANOVA test on each item, but none of the differences was statistically significant, *p>0,05* ***(Appendix 7).***

Additionally, the sample had both children who practice sports (90) and children who did not (34). When performing the t-test separately, we found that the results were statistically significant for both types. In what concerns attitude towards healthy eating and sports, we found

differences on the means that were statistically significant. Children who practice sports had higher means on the items "practicing sports is important" ($\bar{x}_{sport}$=4,88; $\bar{x}_{n/sport}$=4,15; p=0,000), "sports and healthy eating will help growth and healthiness" ($\bar{x}_{sport}$=4,90; $\bar{x}_{n/sport}$=4,50; p=0,000) and "I want to start eating more healthy" ($\bar{x}_{sport}$=4,69; $\bar{x}_{n/sport}$=4,44; p=0,029).

The chi-square analysis on the interaction between the group (CG and EG1), practicing sports and attitude towards the product, purchase intention and brand image transference also provided interesting insights (table 13).

*Table 13: Chi-Square Analysis Sports*Group*Item - Likelihood Ratio*

Practices Sports	Fun (product)	Taste (product)	Purchase Intention	Fun (Brand)	Cool	Taste/Quality (Brand)	Health concerns
Yes	0,000	0,002	0,000	0,016	0,006	0,363	0,023
No	0,004	0,024	0,836	0,123	0,030	0,151	0,139

The results show that although on both groups the attitude towards the product changes, the purchase intention changes in a statistically significant way for children who practice sports ($\bar{x}_{sport}$=2,91; $\bar{x}_{n/sport}$=3,70; p=0,000), but it is not statistically significant for the ones who do not practice ($\bar{x}_{sport}$=2,94; $\bar{x}_{n/sport}$=3,18; p=0,541). Moreover, there is a significant brand image transference only for the children that practice sports.

Understanding the Persuasive Intent

The analysis of the descriptive statistics **(Appendix 8)** for all children revealed that the majority of the children (83% in the experimental group 1 and 70% in the experimental group 2) perceive the presence of the brand in a marketing context, but only 35% were able to identify its persuasive intent by correctly identifying the buying intent of marketing. If we take into account the children who selected the consumption intent, then the sum of buying and consuming intent was 59%. Nevertheless, it is noteworthy that 37% of the children selected the option "practice sports" as the correct response.

When analyzing the understanding of the persuasive intent according to the age, results showed that 47% of the children between 12 and 16 years old were able to correctly identify it but only 23,4% of the children between 7 and 11 were able to answer with the correct response.

To test for the existence of systematic association between age and understanding, a chi-square test was conducted. Results showed that, while there was no association between age and the correct identification of the marketing source (X^2 =1,2 *p*=0,559 for the experimental group 1 and X^2 =2,3 *p*=0,313 for the experimental group 2), there was an association concerning the recognition of its persuasive intent (X^2 =8,9 *p*=0,031).

Discussion and Implications

The aim of this study was to understand how can marketing through sports affect children's attitudes towards healthy products and sports, and how different strategies affect the decision. It also aimed to determine if children were able to identify the source and persuasive intent of those marketing activities. Moreover, it sought to explore the existing differences between children in different stages of cognitive development, as well as the differences according to different levels of urbanization of their location. Lastly, the study also analyzed the differences between children who practice and do not practice sports.

Results suggest that both marketing strategies are effective on changing attitudes and perceptions of the product and the brand. If companies want to target children within the considered age range, it does influence children's attitudes towards the product and the brand, as well as their purchasing intentions. Not only it had an impact on items as taste and quality, but also on items as fun and cool, showing that this type of marketing can have effects on the perception of functional benefits, as well as in building a more attractive brand to young people. The analysis of the answers according to gender did not provide significant differences.

Nonetheless, it is crucial to take into consideration the fact that the study confirmed how children within the considered age range still show some flaws in what concerns understanding the persuasive intent of marketing strategies. Thus, goals must be clear and in accordance with the children's best interests.

Influence on children food consumption and knowledge about the importance of physical activity

After analyzing the results obtained for attitude towards the product, purchase intentions and brand image transference, we conclude that both strategy 1 and strategy 2 had an impact on the way children perceived the healthy cereals. Consequently, we accept the first part of H1, which states that the healthy food promotion through sports will positively influence children healthy food consumption. These results can lead us to conclude that the way products are showed to children will have an impact on their choices and that creative strategies on healthy food can lead to significant results.

Nonetheless, when analyzing the impact on attitude towards the importance of physical activity or healthy eating in general, there is no statistical evidence that these strategies will have an impact on their habits. In fact, all the three groups had similar results and high scores (between 4 and 5) in the second part of the questionnaire. These results allow us to conclude that children are already aware of what is good for them to do, and that the big challenge is not to teach them, but to find strategies that will lead them to act according to what they know is right.

Age

Regarding the influence of age on the marketing through sports impact, our results lead us to accept H1a due to the fact that we observed a higher impact on the brand image transference, attitude towards the product and purchase intention on children aged between 7 and 11 years old. The only item where this didn't happen (fun brand) was not statistically significant.

Thus, the existence of evidence to support H1a leads us to reinforce the idea that younger children tend to view those techniques as truthful, accurate and unbiased and that marketers or law-makers need to be extremely careful when dealing with those differences associated with different processes of persuasion operating at different ages. Furthermore, it is possible to conclude that older children are a target group that is harder to reach and that is more demanding in terms of strategy.

Location differences

The hypothesis H1b predicted that the influence of healthy food promotion through sports on children would depend on the region of the country they live in. However, literature from previous research papers was not clear on whether the influence would be greater on urban or non-urban areas.

Results show that there is evidence of differences between regions, and H1b is accepted, but they diverge according to the item that we are analyzing. For instance, the means for attitude towards the product on the item taste and purchasing intentions were higher in the urban area of Lisboa. The chi-square analysis provided some significant results regarding an association between city and previous items. On the other hand, the means for brand image transference were higher in the less urban area of Guarda, and again, the chi-square analysis provided some significant results regarding an association between city and brand image transference.

This leads to interesting insights regarding the exposure of children to marketing actions. In more urban areas, children are constantly absorbed by innumerous marketing campaigns everywhere and this is coherent with the idea that new strategies will not have such a broader impact in their perception towards the brand. The previous fact emphasizes that children will have different consumption patterns and habits, which can explain the differences in attitude towards the product and in purchasing intentions. Thus, it is important to notice how the external environment is affecting children, their decisions and their knowledge regarding the importance of healthiness. The fact that more urbanized cities have a higher concentration of marketing activities might be creating disruptive messages to the children.

Level of integration within the sports environment

Regarding H2, we expected that the success of the “marketing through sports” strategies in children would be higher the higher the level of integration within the sports marketing environment. Results showed that for brand image transference the means from experimental group 2 were higher but only the differences in Quality were statistically significant. Moreover, the differences were almost inexistent in what concerns attitude towards the product and purchase intentions, which leads to the rejection of H2.

This outcome might be interesting for marketers since it reveals that the differences between strategy 1, which is less costly, and strategy 2, that demands more integration and is more costly, were not statistically significant. Thus, we found insights that lead us to conclude that when building strategies to reach this target audience it is important to correctly use resources and understand how will they affect consumption and brand image. Furthermore, when dealing with ethical issues, strategy 2 might be harder to implement due to problems associated to the children's exposure to the brand.

Understanding of source and persuasive intent

In relation to H2a, it was predicted that the "marketing through sports" strategies used in children would be better perceived by older children due to their increasing ability to recognize the persuasive intent and the goals of the brand. The differences regarding the understanding of the marketing source were not statistically significant. However, results concerning the recognition of the persuasive intent support H2a. The chi-square test demonstrated that age had a positive impact on the recognition of the correct intent of sponsorship.

Results also revealed that 37% of the respondents identified "practicing sports" as the correct answer. Thus, it is possible to conclude that these type of techniques may still be confusing and more complicated to understand (Oates et al., 2002). In fact, it is harder for children to understand the persuasion or selling intent because it is more complex and requires an upper level of comprehension (Martin, 1997). Thus, it is undeniable the fact that we are dealing with a vulnerable audience and all the people involved in the creation of strategies need to have special awareness. Moreover, those concerns are higher for younger children.

On the one hand, these conclusions emphasize the importance of controlling "unethical" strategies and, on the other hand, reinforce the importance of educating our children and prepare them for all the marketing strategies that they face in their everyday life.

Limitations and Future Research

The main limitation of this study is the fact that the experimental group 2 was only composed of 30 children while the other two were composed by 60 or more children. As previously explained, testing for the alignment-based strategy implied a more demanding process and the

exposure of children to the strategy took longer. Thus, if the strategy could be applied to a greater number of children the difference could be statistically significant. Moreover, only 27% of the children said that they didn't practice sports. It would be interesting to have more children who didn't practice sports so that we could reach more conclusions regarding this target group, especially because this is the group that raises more concerns regarding children's health and nutrition.

Lastly, the research provided interesting insights regarding urbanization differences that should be further explored. The previous literature aligned with the findings of the study lead to the conclusion that there are differences worth to study. The competition is fierce, analyze and consider details like that can make the difference.

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