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“IN WHAT EXTENT CAN TOY PREMIUMS PROMOTE HEALTHY EATING
HABITS? A STUDY WITH SCHOOL-AGE CHILDREN”

CARLA SOFIA DA SILVA FERREIRA #1116

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of:

Professor Luisa Agante

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Abstract

Toy premiums, as well as other marketing tools, can be used to promote healthy eating habits on children. As children grow, their appreciation for healthy meals and toys decreases, however their enjoyment for collections increases. Thus, we would expect toy premiums to be ineffective or effective but to a lower extent on promoting healthy eating behaviors as children grow old. The study consisted on presenting children with one of three conditions: see an image of healthy food; see an image of a toy premium (non-collectible, collectible or superfluous collectible); or see a picture of healthy food paired with a toy premium. Afterwards, we measured children's attitudes towards healthy food and toy premiums and their purchase intention of the healthy meal. As a result, pairing healthy food with toy premiums was not effective on promoting healthy eating behaviors, being the main reason the initial high attitude towards healthy. Additionally, no relevant differences on attitudes between younger and older children were found.

Keywords: children, healthy food, toy premiums, collectibles

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1. Introduction

Obesity in children is a growing issue in today's society and its rate worldwide has doubled in about 30 years. In 2011, it was estimated that the number of obese children under 5 years old was of 40 million worldwide (WHO, 2013). Two of the main causes of obesity are the current sedentary lifestyles and unhealthy eating habits.

There are several reasons behind children's unhealthy eating behaviors, being marketing activities one of them. Among those activities, one that is widely used is toy premiums. According to the FTC (2012), 48 of the biggest companies in the USA spent 393 million dollars in premiums, which rank 2nd after traditional media such as TV, radio and print advertising.

Despite the extensive research done on some marketing activities (Goldberg et al., 1978; Valkenburg & Buijzen, 2005; Rexha et al., 2010; Ogba & Johnson, 2010), there is little information regarding the offer of toy premiums. Previous studies have examined the effects of toy premiums in children of different ages from 4 to 8 years old (Heslop & Ryans, 1980) and with children from 6 to 12 years-old (Shimp et al., 1976). Both studies used the breakfast cereals category, and found that offering toy premiums paired with the product may influence children's preferences. A more recent study (McAlister & Cornwell, 2012) with a sample of younger children (3 and 5 years old) investigated the effect of toy premiums on the food choices between unhealthy and healthy meals, and found that toy premiums affect children's attitudes towards unhealthy and healthy food. As far as the authors know, there are no previous studies, on the effects of toy premiums in the choice and attitude towards healthy food of children on older children, and thus, there is no evidence of until what age are toy premiums effective on promoting healthy eating habits. Although it has been proved by Shimp et al. (1976) the

effects of toy premiums on the attitudes towards cereals in older children we wonder if the same effect holds true for healthy food. Hence, on children above 5 years old we expect toy premiums either to be ineffective or to be effective but to a lower extent than preschoolers on altering the attitudes and purchase intentions of healthy food.

2. Literature Review and Hypothesis

2.1. Obesity and Children's Food Preferences

In 2010, in the USA, 18% of children from 6 to 11 years old and 18% between 12 and 19 years were obese (Centers for Disease Control and Prevention, 2013). In Portugal, in 2010, 35.6% of children between 6 and 8 years old were overweight and 14.6% were obese (Instituto Nacional de Saúde Doutor Ricardo Jorge, 2012). Among other causes, children's obesity is caused by an increasing unhealthy eating behavior.

It is proved that children prefer unhealthy instead of healthy food, existing many reasons behind this preference. Firstly, unhealthy meals such as fast-food are more appealing to children in terms of taste, smell and appearance (Stevenson et al., 2007), and most of the time easily available when compared with healthy food (Shepherd et al., 2006). Furthermore, unhealthy food is associated with friendship and pleasure as well (Shepherd et al., 2006). As children grow, the action of consuming unhealthy meals is seen by children as cool (Schor & Ford, 2007) and healthy food is perceived by young consumers as not tasty (McKinley et al., 2005; Stevenson et al., 2007). Recently, many actions have been taken in order to promote healthy eating habits in schools and through other vehicles (Hyland et al., 2006; Ransley et al., 2010), resulting in an increase in the consumption of fruit and vegetables among children from 2005 to 2009 (FTC, 2012).

However, young children have fear of tasting new food products – neophobia –, which leads them to have less diversified diets (Cooke, 2007). Although this has little

occurrence among children below 2 years old, it has great influence on children from 2 to 7 years and decreases again from this stage until adulthood (Birch, 1999). Hence, it is more difficult for younger children (2 to 7 years old) to taste new foods and enjoy healthy food. As mentioned before, school-age children are not so influenced by neophobia and thus, in a previous study, when confronted with healthy options, some children changed from unhealthy to more healthy meals (Rexha et al., 2010). However, children felt confused if the healthy product had not been advertised.

2.2. Effects of Marketing on Children's Attitudes and Preferences

Attitude is the “lasting, general evaluation of people (including oneself), objects, advertisements or issues” (Solomon et al., 2006, 138) and is composed by affect, behavior and cognition. According to the same authors, to evaluate a person's attitude towards any object it is necessary to evaluate their feelings (affect), beliefs (cognition) and intentions (behavior) towards it. Also, consumer's evaluation of an object depends on the beliefs they have about several characteristics of the object. Keller et al. (2012) stated that the knowledge about a brand can be inferred from other secondary identities, such as celebrity endorsements and licensing. Thus, anything paired with a brand, like premiums, is expected to transfer meaning and knowledge about a brand or a product.

Marketing is many times associated with the raise of obesity among children and adults since there are many marketing tools that affect children's attitudes and food preferences. One of the most widely studied marketing tool is TV advertising, which was found to have a positive relationship with children's brand awareness, preferences and purchase intentions (Goldberg et al., 1978; Valkenburg & Buijzen, 2005; Rexha et al., 2010), and is also claimed to be related with the rising of obesity among children (Institute of Medicine, 2006). Another tool that appears in many studies is packaging,

which was found to influence food preferences as well (Ogba & Johnson, 2010). Although toy premiums are used a lot as a marketing tool, there are very few studies which have focused on this marketing tool.

2.3. Toy Premiums

The use of toy premiums has the objective of attracting children to purchase the company's product by capturing their attention to the toy being offered. There is a growing trend for offering toy premiums with food products or meals. Many of these toy premiums are collectibles and are widely used to promote unhealthy food. Fast-food advertising (62.5%) contains more collectibles than high-sugared breakfast cereals' (2.7%) (Page & Brewster, 2007). The same trend is followed by branded websites, with 48% of them enclosing collectible products (Henry & Story, 2009). In 2009, the biggest quick-service restaurants in the USA such as Burger King and McDonald's spent 341 million dollars on premiums, 87% of the expenditures of 48 firms present in the FTC (2012) report. Breakfast cereals companies accounted for 6.6% of the expenditures on premiums and carbonated beverages with 3%. As expected, none of the 48 companies reported to spend money on premiums to promote fruits and vegetables.

In 2009, fast-food restaurants sold around 1 billion of children's meals paired with toy premiums to children under 12 years. In terms of age ranges, fast-food restaurants spent more money on premiums to children between 2 and 11 years old than to children from 12 to 17 years old.

2.3.1. Effects of Toy Premiums on Children

Past research has examined the effect of toy premiums with breakfast cereals in 4 to 8 year-olds (Heslop & Ryans, 1980) and in children from 6 to 12 years-old (Shimp et al., 1976). It was found that pairing a food product with toy premiums may change

children's preferences. Though, it does not mean a change on children's choice. However, in a study with undergraduate students, it was found that premium offers influenced purchase intention (Montaner et al., 2011). Besides, toy premiums are seen by parents as a very powerful tool to attract their children (Pettigrew & Roberts, 2006). Concerning the effect of toy premiums on children's brand image, previous literature (McNeal, 1999) states that they can increase short-term sales and improve children's brand image but these conclusions have been taken from research with children's food so we don't know if the same effects can be reached by offering a toy premium with healthy food. However, if the premium offered is unattractive to customers this may negatively affect the brand image and the attitude toward the brand (Simonson et al., 1994).

In this view marketing activities could help to improve eating habits of children. In fact, McAlister & Cornwell (2012) explored the reaction of children between 3 and 5 years old to collectible toy premiums with unhealthy and healthy meals. When presented with a healthy food with toy premium and an unhealthy meal without toy premium, preschoolers chose the healthy option. Additionally, it was found that pairing healthy and unhealthy food with toy premiums increased children's attitude towards both types of meal, being the major increase noticed in the healthy food. The same has been done with children from 6 to 12 years old (Hobin et al., 2012) but using well known toy premiums from McDonald's, which includes the brand familiarity and brand loyalty on the outcomes. In terms of less familiar brands or unknown brands there is no research stating if this effect also holds true for older children.

H₁: When comparing healthy food with the same food paired with toy premium, children will have a) *a better attitude towards* b) *and a higher purchase intention of* the food with the toy premium.

In younger children we know that the effect of toy premiums along with food products is different depending on the nature of the toy, namely, we must distinguish collectible toys from non-collectible toys, and collectible toys should be split among superfluous and non-superfluous toys. By superfluous it is meant a collectible toy that a child already owns. McAlister & Cornwell (2012) found that preschoolers, when presented with non-collectible, non-superfluous collectible and superfluous collectible toy premiums, preferred the non-superfluous collectible toy. Surprisingly is the fact that, for both unhealthy and healthy food, the attitude towards the meals paired with superfluous collectible and paired with non-collectible toy premiums were very similar.

Fast-food chains invest large sums of money promoting toy premiums to children from 2 to 11 years old (FTC, 2012). However, the type of toys that are paired with the food, which are mainly targeted for children until 7 years old (Lambert & Mizerski, 2011), pertain to characters from movies which target mostly younger children (until 6 years old). Hence, children in the upper stage of target audience for these meals may not be attracted by the toys being offered.

2.4. Children Cognitive Development from 7 to 11 Years Old

As we are going to study the effects of toys premium on children older than 6 years old, we should start by characterizing this age in terms of their cognitive development. According to Piaget these children are on the concrete operational stage, which contrasts with preschoolers who are considered as pre-operational children. The main difference is that school age children are able to think logically on the abstract level and

analyze simultaneously more than one dimension and therefore, during these years (7-11) children develop lots of capabilities that are from the utmost importance for their future.

From 6 to 8 years children become aware that others have different opinions. They are still self-centered, which means that they cannot think from another person's perspective, because this ability is developed only around the 8 years of age. From 8 years old on children have the ability to perceive the persuasive intent of advertising since it requires them to view it from the advertiser's point of view (John, 1999). However, they are not able to consider another person's point of view at the same time as their own. Nonetheless, this capacity to think from another person's perspective leads children to recognize the existence of bias in advertising, thus making them skeptical about advertising and less willing to acquire the advertised product (Miller & Busch, 1979; John, 1999). In addition, older children have more established preferences than younger children, which makes them less receptive to advertising, especially premium-oriented advertising (Heslop & Ryans, 1980).

Between preschool and 2nd grade, children begin to make inferences about people based on the products they use. First graders often compare their possessions to those of others in terms of quantity. Older children place value on material possession based on their ability to elevate one's status above others or to fit into the expectations of a social group.” (John, 1999)

Children between 5 and 10 years old start to relate the acquisition of material goods with “social status, happiness and personal fulfillment” (John, 1999). Furthermore, previous research discovered that collecting fulfills the need for competition among collectors, who seek to possess more objects than their peers. By the same token,

collecting is seen by children as having fun by competing with others (Ville et al., 2010). To escape from boredom and reality, as well as to learn about a certain field are other reasons behind a child's collection. Further, the need to satisfy their passion for the objects and the aspiration to be different from the peers also has influence on the child's decision to start a collection (Baker & Gentry, 1996).

As a result of centration – the inaptitude to focus simultaneously on more than one attribute of an object – children until 7 years old are not capable of paying attention to details or comparing objects with precision. Consequently, children before this age accumulate things instead of collecting them (Acuff, 1997; John, 1999). Accordingly, they value the quantity more than the variety of toys they possess. In opposition, McAlister et al. (2011) found that preschoolers preferred to have one collectible toy (by sharing another toy with another child) than two non-collectible toy premiums. On the contrary, children in the concrete operational stage already have the capacity to consider several dimensions of a stimulus at a time and are able to analyze objects or brands with more precision (John, 1999). Therefore, instead of accumulating, children start to collect. From all of this, we would expect younger children to accumulate toy premiums while older children would be more focused on details and variety.

RQ: Do younger and older children evaluate differently the toy premium and therefore will evaluate differently the healthy food paired with a toy? Will there be any differences between superfluous collectibles, non-superfluous collectibles and non-collectible toys alone and paired with healthy food?

3. Methodology

3.1. Pretest

The first pretest was used to select the toys to be used on the main experiment. The toys would have to be appealing for all children aged from 6 to 11 years old. In order to ensure that attitudes were not influenced by brand familiarity, the toys would have to be new for the children as well. With the help of a primary school teacher, we started by making a list of possible toys to test. We arrived at a list of 8 possible toys. Afterwards, we tested the identified toys in order to find the ones that had the same appeal for children of all ages and genders. In the pretest participated 7 children (4 girls and 3 boys), from 6 to 10 years old (Mean = 8; Std. Dev. = 1.63).

We gave each child 5 cards with different smiley faces and the child chose the one that better represented his/her feeling for each of the selected toys. Our goal was to arrive at 4 toys which would meet the criteria and that would have equal appeal, in order to use them as examples for a non-collectible toy and three toys belonging to the same collection. As a result, a bouncing ball was chosen as the non-collectible toy and three puzzles were chosen as the collectible toys¹ (appendix 2).

3.2. Main Study

3.2.1. Participants

The research focused on children from 6 to 11 years old. For the sake of simplicity and to have a cut point, we decided to examine only the extremes of the segment. However, we excluded the 1st graders from the analysis since their capacity to read is not yet developed. Additionally, 1st graders are included on the same stage of cognitive development of preschoolers, the pre-operational stage, which had already been studied

¹ The remaining toys were two dinosaurs, an airplane and three cars.

in previous literature. Hence, the study focuses only on 2nd and 4th graders, which corresponds to children in the concrete operational stage of cognitive development.

The study was composed by 106 children (44.8% boys), from 6 to 11 years old (Mean= 8.08 and Std. Dev. = 1.182), in which 56 children were from the 2nd grade and 50 were fourth-graders. Participants were recruited from schools in the metropolitan area of Lisbon.

3.2.2. Procedure

As mentioned before, the objective of the study was to evaluate the effects of having a toy premium paired with healthy food on the attitude towards healthy food. This attitude would be dependent on the attitude towards the toy, which we assumed would decrease with age and would depend on the type of premium (collectible vs. non-collectible). Additionally, by the fact that the toy premium was paired with healthy food we wanted to find whether the children's attitude towards the toy could have been affected by their attitude towards the food.

Therefore, the sample was divided into three groups, two control groups and one experimental group. Both control groups served the purpose of evaluating separately either the healthy food (group F) or the toy (group T) without pairing both, while the experimental group (group E) evaluated the pair food/toy. Since we had 4 toys being used in our experiment (one non-collectible and three collectible toys), control group T and the experimental group were sub-divided. Control group T was sub-divided into 4 sub-groups (one for each toy), and the experimental group was divided into three sub-groups (non-collectible, collectible premium, collectible superfluous). In order to have a sample dimension that could allow a reliable extrapolation of the survey results an adequate sample size was evaluated. This exercise was carried out for each one of the

three groups separately. The fixing of the sample dimension needs the knowledge of the population variance, situation usually unattainable. An estimate of the variance equal to 0.810 was obtained via pilot test with 18 children. Then, based on the default assumption 95% of a possible confidence interval with margin of error equal to 0.25, we found that the number of participants in each one of the three groups should be at least 40 children. However, due to the limitations imposed on the research schedule, and on the response rate of parents, we could not achieve that minimum in all. Though, the number 40 was found with freedom enough to admit that smaller sample sizes will not produce bad extrapolated results. Table 1 summarizes the division per sub-group.

Table 1- Research groups and its composition

Groups		Experimental Conditions		Number of Children	Percentage
		Healthy Food	Toy Premium		
Group F		Yes	No	20	18,9%
Group T	T1	No	Non-collectible	9	8,5%
	T2	No	Collectible 1	7	6,6%
	T3	No	Collectible 2	10	9,4%
	T4	No	Collectible 3	10	9,4%
Group E	E1	Yes	Non-collectible	19	17,9%
	E2	Yes	Collectible non-superfluous	16	15,1%
	E3	Yes	Collectible superfluous	15	14,2%
TOTAL				106	100,0%

Each group was presented a picture of the respective item(s) to be evaluated (food, toy, food+toy) and was asked to evaluate the attitude towards the items on the picture. Finally, in order to assess children and educators' eating habits a questionnaire was given to educators.

3.2.3. Measures

Children's attitude towards the healthy food was measured by asking them how much they liked the food and how good it seemed to taste (McAlister & Cornwell, 2012). Additionally, purchase intention was measured by asking children if they would like to buy or ask their parents to buy the food (Phelps & Hoy, 1996). Both attitudes and purchase intentions were measured using a 5-point smiley faces scale. Attitude towards

the toy premium was measured with a 5-item scale adapted from several authors (Shimp et al, 1976; Pecheux & Derbaix, 1999; Osgood et al, 1957²). Children were asked how much they liked the toy and how much fun, cool and pretty it was. They were also asked how much quality the toy had. All scales were reviewed by a child psychologist in order to evaluate their suitability for children with this age.

Finally, to assess educators and children's eating habits (Dixon et al., 2007), educators were asked to state theirs and their child's weekly consumption of vegetables, fruits, French fries, sweets and soft drinks (Elfhag et al., 2008). They were asked as well to rate theirs and their child's eating habits in terms of healthiness.

4. Results

We started by analyzing our main hypothesis that, when **comparing healthy food alone with the same food paired with a toy premium**, children would have a better attitude towards and would have a higher purchase intention of the food with the toy premium (appendix 7). Concerning the effects of pairing healthy food with toy premiums it was found that pairing the food with the non-collectible toy, a bouncing ball, did not lead to significant changes in the attitude towards healthy food nor in the children's purchase intention ($p > 0.050$). Pairing the healthy food with the three collectible toys did not lead to significant changes in the attitude towards healthy food ($p > 0.050$) but the changes in purchase intention were ambiguous ($p(t\text{-test}) = 0.422$; $P(LR) = 0.054 < 0.100$). Further, pairing healthy food with superfluous collectibles lowered children's attitude towards the food but not in a significant way ($p > 0.050$). Additionally, comparing the results from healthy food paired with non-superfluous collectibles and paired with superfluous collectibles, the purchase intention ($p = 0.147$) and likability for healthy food did not

² Osgood, C. E., Suci, G. & Tannenbaum, P. 1957. *The Measurement of Meaning*. University of Illinois Press. IN Bruner, G. C., Hensel, P. J., & James, K. E. 1992. *Marketing Scales Handbook: A Compilation of Multi-Item Measures*. Chicago, Ill., USA: American Marketing Association.

suffer significant changes ($p=0.418$). As exception, the changes in anticipated taste were significant according to the non-parametric tests ($p(LR^3)=0.048$) but non-significant on the parametric tests ($p(t\text{-test})=0.884$). In this way, we **reject hypothesis H1**.

Since our hypothesis was not confirmed, we proceeded to our research question with low expectations. There was no significant relationship between likability ($p=0.313$), anticipated taste ($p=0.183$) and purchase intention ($p=0.564$) with age. Thus, it was not proven that younger children have greater **attitudes and purchase intentions for healthy food** with toy premiums than older children (table 6, appendix 8).

Regarding children's **attitude towards toys** alone, it was found that there is a significant difference between likability among 2nd and 4th graders with the likability for the toys being negatively related with age. The same results are valid for the opinion about the toys' fun aspect, its beauty, coolness, and quality. With respect to non-collectibles paired with healthy food, no relationship between attitude towards the toy and age was found, and neither significant differences on attitude between 2nd and 4th graders. When pairing collectibles toys with healthy food no relationship was found between children's attitude toward the toys and age, with exception to quality, which was positively related to age ($p=0.041$). No significant differences on attitude towards collectibles were found between younger and older children. Once again, pairing superfluous collectibles with healthy food no relationship between attitude towards the toys and age emerged. For more detail please see tables 2 and 3.

Table 2 – Spearman Correlations between attitude towards toy premiums and age

Variables	SC (Group D)		SC (Group E1)		SC (Group E2)		SC (Group E3)	
	P-value	Value	P-value	Value	P-value	Value	P-value	Value
Likability for toy premium and age	0,004	-0,470	0,245	0,289	0,319	-0,266	0,250	-0,316
Fun and age	0,080	-0,295	0,453	-0,189	0,564	-0,156	0,491	-0,193
Beauty and age	0,029	-0,363	0,985	-0,005	0,113	-0,412	0,454	-0,209
Cool and age	0,031	-0,360	0,785	0,069	0,114	-0,411	0,652	0,127
Quality and age	0,019	-0,390	0,787	0,069	0,041	-0,516	0,177	0,368

³ LR stands for Likelihood Ratio

Table 3- Differences on attitude towards toy premiums between 2nd and 4th graders

Variables		T-test (Group I)			T-test (Group E1)			T-test (Group E2)			T-test (Group E3)		
		Mean		P-value	Mean		P-value	Mean		P-value	Mean		P-value
		2nd Grade	4th Grade		2nd Grade	4th Grade		2nd Grade	4th Grade		2nd Grade	4th Grade	
Attitude towards toy premiums	Likability	4,944	4,167	0,001	3,556	4,600	0,097	4,667	3,857	0,267	4,800	4,400	0,251
	Fun	4,667	4,111	0,027	4,889	4,500	0,206	3,667	3,429	0,742	4,600	4,200	0,165
	Pretty	4,667	4,167	0,028	4,556	4,200	0,434	4,778	4,000	0,083	4,400	4,000	0,317
	Cool	4,833	4,000	0,002	4,667	4,700	0,905	4,333	3,286	0,160	4,300	4,200	0,829
	Quality	4,833	4,111	0,003	4,222	4,300	0,877	4,222	3,286	0,094	4,400	4,600	0,500

No relationship was found between the **attitude towards and purchase intention for healthy food with age** when the food was paired with the non-collectible. Further, no significant differences occurred on attitude towards healthy food between 2nd and 4th graders. The same results were obtained when healthy food was paired with collectible toys. On the contrary, pairing healthy food with superfluous collectibles lead to lower attitude towards healthy food by 2nd graders than by 4th graders ($p=0.054<0.1$). Nonetheless, purchase intention among younger and older children did not register significant differences. In addition, it was found a positive relationship between likability for healthy food and age when the food was offered along with superfluous collectibles ($p=0.030$), but no relationship between anticipated taste and purchase intention with age. For more detail please see tables 4 and 5.

Table 4 – Spearman Correlations between attitude towards healthy food and age

Variables	SC (Group E1)		SC (Group E2)		SC (Group E3)	
	P-value	Value	P-value	Value	P-value	Value
Likability and age	0,867	0,042	0,870	-0,045	0,030	0,560
Anticipated taste and age	0,801	0,064	0,696	0,106	0,129	0,410
Purchase intention and age	0,317	0,250	0,591	-0,145	0,850	0,053

Table 5 - Differences on attitude towards healthy food between 2nd and 4th graders

Variables		T-test (Group E1)			T-test (Group E2)			T-test (Group E3)		
		Mean		P-value	Mean		P-value	Mean		P-value
		2nd Grade	4th Grade		2nd Grade	4th Grade		2nd Grade	4th Grade	
Attitude towards healthy food	Likability	4,000	4,100	0,865	4,111	4,286	0,766	3,500	4,600	0,054
	Anticipated Taste	4,333	4,300	0,945	3,667	4,000	0,519	3,500	4,600	0,054
Purchase Intention		3,111	4,000	0,169	4,222	4,000	0,602	3,400	3,800	0,609

It was also found that there are no differences between **attitude towards superfluous collectibles and attitude towards non-collectibles** among 2nd graders (appendix 9), with the exception of likability of the toy, which registered only a slight increase ($p=0.052<0.100$) from non-collectibles to superfluous collectibles. In the same direction, no significant differences between superfluous collectibles and non-collectibles were found among 4th graders on all items except fun, which revealed ambiguous changes in terms of significance.

Furthermore, the pairing healthy food with the non-collectible toy did not lead to significant changes on **attitude towards the food** among 2nd and 4th graders separately (appendix 7). The same happened with the introduction of the three collectible toys, with exception to purchase intention by 2nd graders, which was ambiguous in significance ($P(t\text{-test})=0.270$; $p(LR)=0.076<0.100$). With the introduction of the superfluous collectibles, no significant changes arose as well on attitude towards healthy food, with the exception of the likability of the food by 2nd graders, which was lower in the group with the toy but the t-test was not significant ($p=0.743$) while LR revealed the existence of a relationship ($p=0.047$). Comparing the results from healthy food paired with non-superfluous and superfluous collectibles, there was a higher anticipated taste when the food was paired with superfluous collectibles among 4th graders, but this difference is inconclusive in terms of significance. Nevertheless, among the 2nd graders, it is clear that no significant changes occurred.

Comparing the attitudes towards healthy food paired with non-collectibles and paired with superfluous collectibles, no significant differences were found among 2nd graders (appendix 10). Non-collectibles were associated with higher likability but lower anticipated taste and purchase intention though these differences were not significant

($p > 0.050$). Moreover, among older children, no significant differences arose as well. Non-collectibles were associated with lower likability and anticipated taste and higher purchase intention though these differences were not significant ($p > 0.050$).

Other results beyond the hypothesis and research question were examined. Firstly, there is a strong positive relationship between the likability for healthy food and its anticipated taste ($p = 0.000$). It was also found that the likability for healthy food is positively related with the purchase intention ($SC^4 = 0.439$, $p = 0.000$) (table 7, appendix 8). In regard to healthy eating habits of children and their parents, some positive relationships were found, being the main conclusions shown in table 6 (for more detail please see appendix 11). Furthermore, no significant changes or relationship were found between children's attitude towards healthy food and the healthiness of their parents' eating habits ($p > 0.050$) nor the healthiness of their eating habits (appendix 11).

Table 6 - Correlations between attitude towards healthy food and eating habits

Variables	p-value	SC	Conclusion
Children and parents' eating habits	0,000	0,689	Positive strong correlation
Children's mean attitude towards healthy food and parent's eating habits	0,567	0,070	No relationship
Children's mean attitude towards healthy food and children's eating habits	0,676	0,051	No relationship
Likability for haelthy food and parents' consumption of fruits	0,006	0,332	Positive weak relationship
Likability for haelthy food and children's consumption of fruits	0,009	0,310	Positive weak relationship
Anticipated taste and parents' consumption of fruits	0,055	0,234	Positive weak relationship
Purchase intention and children's consumption of vegetables	0,052	0,234	Positive weak relationship

In addition, it was evaluated the effects of pairing toy premiums with healthy food on children's attitude towards the toys (appendix 12). It was possible to understand that pairing the healthy food with the non-collectible toy (bouncing ball) had no significant effect on the attitude towards the toy ($p > 0.050$). When discriminating between younger and older children, the changes are also not significant. It was also found that in general, pairing healthy food with non-superfluous collectibles lead to no significant changes on children's attitude towards the toys. Though, there are two exceptions. Firstly,

⁴ SC stands for Spearman Correlation

children's opinion about the fun of the collectibles decrease in a significant way ($p < 0.100$). Secondly, pairing healthy food with the collectibles lead to a significant decrease in the children's opinion about the quality of the toys ($p = 0.036$). Among 2nd graders, there was a significant decrease on the opinion about fun ($p = 0.072 < 0.100$) and quality ($p = 0.098 < 0.100$) as well. Among 4th graders, there was a significant decrease on the opinion about quality ($p = 0.100$) and an ambiguous decrease on the likability for the collectibles ($p(\text{t-test}) = 0.680$; $p(\text{LR}) = 0.071 < 0.100$). By analyzing the results from pairing healthy food with superfluous collectibles with the results from the toys alone, it is noticeable that no significant change occurred in general ($p > 0.050$). There is however one exception on the quality for all children, which registered a significant increase in the non-parametric tests ($p(\text{LR}) = 0.015$) but was non-significant in the parametric tests ($p(\text{t-test}) = 0.914$). Among 2nd graders, it was found a significant decrease on the opinion about the coolness of the superfluous toys ($p = 0.043$) and its quality ($p = 0.035$). Among 4th graders, no significant changes on attitude towards superfluous collectibles were found. Finally, comparing the attitude towards superfluous and non-superfluous collectibles it becomes evident that there are no significant differences in general, and only some exceptions occurred. Contrary to expectations, children's opinion about the fun of collectibles was significantly higher for superfluous collectibles ($p = 0.023$) and the opinion about quality was higher for superfluous collectibles but the difference between groups was ambiguous in terms of significance ($p(\text{t-test}) = 0.046$; $p(\text{LR}) = 0.175$). Among younger children no significant differences were found between children's attitudes towards superfluous and non-superfluous collectibles. The same occurred with older children, with the exception to opinion about quality, which was significantly higher for superfluous collectibles.

5. Discussion

One of the main conclusions of the present research is that in general, pairing healthy food with toy premiums does not affect children's of this age attitude towards and purchase intention for healthy food. In fact, and contrary to McAllister & Cornwell's (2012) discovery, the introduction of any type of toys (non-collectible, collectible and superfluous collectible) was not effective on increasing children's attitude towards and purchase intention for healthy food. One reason for these results may be the already high attitude towards healthy food of children when food is presented alone. Thus, although the introduction of toy premiums alters children's attitude towards the food, this difference is not significant. Comparing with McAlister & Cornwell (2012) study, the contradictory results may be due to the difference in eating habits between the USA and Portugal. In fact, the children participating in our study and their parents reported high levels of consumption of fruits and vegetables and low levels of consumption of French fries, sweets and soda. Although the study evaluated the reactions of children in short-run, a second reason may be linked with the decrease of motivation on the long run when a likable food is paired with a reward (Birch et al., 1982, 1984). Another reason for the ineffectiveness of toy premiums to increase children's choice and attitude towards healthy food may be the comprehension of the persuasive intent of the offer.

A deeper investigation enabled us to conclude that the attitude towards and purchase intention for healthy food were not related with age. Further, as children grow older, they have a higher attitude towards toys alone, which was reflected on the differences between younger and older children. Also, younger and older children had similar attitudes towards non-collectibles, collectibles and superfluous collectibles. Because of this, no relevant differences on attitude towards and purchase intention for healthy food

paired with the toys were found. The exception happened when younger children had lower attitude towards healthy food than older children but similar purchase intention if the food was paired with superfluous collectibles. One reason might be that pairing healthy food with superfluous collectibles had negative effects on the 2nd graders opinion about coolness and quality of toys and on the 4th graders opinion about quality. Additionally, younger as well as older children have similar attitude towards non-collectibles and superfluous collectibles as proven by McAllister & Cornwell's (2012). The divergence occurred on the likability for the toys among 2nd graders, who liked non-collectibles less than superfluous collectibles.

Another important conclusion is that pairing healthy food with non-collectible and collectible toy premiums is not effective on changing the attitude towards healthy food of 2nd and 4th graders separately. With the present research it was also found that, in general, pairing healthy food with toy premiums does not affect children's attitude towards the toys. This may be due to the high attitude towards healthy food, which did not affect children's attitude towards the toys. However, pairing non-superfluous and superfluous collectibles with healthy food lead to a lower attitude towards the toys. Unexpectedly, comparing attitude towards non-superfluous and superfluous collectibles, children's consider superfluous collectibles as funnier. Plus, older children consider superfluous collectibles as prettier.

6. Limitations and Further Research

One of the main limitations of the study is the sample size, which did not allow having the right size to have the stipulated margin of error in some of the groups. The reduced size of the sample did not allow analyzing the effects of each collectible toy separately. Hence, future research should incorporate a larger sample in order to draw more certain

conclusions. Secondly, children's stated enjoyment of healthy food may not match their real opinion when faced with the actual food. However, children's consumption of healthy food reported by parents matches with children liking of healthy food. Besides, during the individual interviews became clear that children enjoy healthy food in general. Nonetheless, it is possible that those reports by both children and parents' eating habits are biased by social desirability. Moreover, it is possible that, when presenting healthy and unhealthy food to the children, the choice and attitude towards healthy food presents different results. Thirdly, the anticipated taste stated by children may be different than the actual taste when trying the food.

Moreover, the participants in the study were aged between 6 and 11. In countries with high levels of healthy food consumption, the results for children under 6 years old may be different. Furthermore, this research did not evaluate differences between genders. It is expected that girls have a higher attitude towards healthy food when presented alone (Levin & Levin, 2010 and Hobin et al., 2012). Finally, further research should seek an explanation for the similar attitudes towards non-collectibles and superfluous collectibles of children.

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A Work Project, presented as part of the requirements for the Award of a Masters Degree in Management from the NOVA – School of Business and Economics.

“IN WHAT EXTENT CAN TOY PREMIUMS PROMOTE HEALTHY EATING HABITS? A STUDY WITH SCHOOL-AGE CHILDREN”

CARLA SOFIA DA SILVA FERREIRA #1116

A Project carried out on the Children Consumer Behavior course, under the supervision

of:

Professor Luisa Agante

January 2014

Booklet II

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Appendix 1 – Ministry of Education Authorization

Monotorização de Inquéritos em Meio Escolar: Inquérito nº 0399100001

De: mime-noreply@gepe.min-edu.pt Você moveu esta mensagem para o local atual.
Enviada: quarta-feira, 6 de novembro de 2013 11:04:32
Para: luisa.agante@novasbe.pt; carla_ss_ferreira@hotmail.com

Exmo(a)s. Sr(a)s.

O pedido de autorização do inquérito n.º 0399100001, com a designação "Promover Hábitos Alimentares Saudáveis Através da Oferta de Brindes", registado em 29-10-2013, foi aprovado.

Avaliação do inquérito:

Exmo(a) Senhor(a) Dr(a) Carla Sofia da Silva Ferreira
Venho por este meio informar que o pedido de realização de inquérito em meio escolar é autorizado uma vez que, submetido a análise, cumpre os requisitos, devendo atender-se às observações aduzidas.
Com os melhores cumprimentos
José Vitor Pedroso
Diretor de Serviços de Projetos Educativos
DGE

Observações:

- a) A realização do Inquérito fica sujeita a autorização das Direções dos Agrupamentos de Escolas selecionados. Merece especial atenção o modo, o momento e condições de aplicação dos instrumentos de avaliação e registo em meio escolar, devendo fazer-se em estreita articulação com as Direções das Escolas/Agrupamentos que autorizem a realização do estudo.
- b) Exige-se a garantia de anonimato dos respondentes, confidencialidade, proteção e segurança dos dados, considerando-se o disposto na Lei n.º 67/98. Informamos que os inquiridos não devem ser identificáveis, seja pelo nome ou por qualquer outro modo de identificação pessoal direta ou indireta. Deve ser pedido consentimento informado e esclarecido do titular dos dados. No caso presente de inquirição de alunos menores (menos de 18 anos) este deverá ser atestado pelos seus representantes legais. As autorizações assinadas pelos Encarregados de Educação devem ficar em poder da Escola/Agrupamento ao qual pertencem os alunos. Não deve haver cruzamento ou associação de dados entre os que são recolhidos pelos instrumentos de inquirição e os constantes da declaração de consentimento informado.
- c) Informa-se que, de acordo com a natureza jurídica da Direção-Geral da Educação (DGE), publicada pelo Decreto-Lei n.º 14/2012 de 20 de janeiro, conjugada com o enquadramento legal específico dos pedidos de autorização para aplicação de inquéritos/realização de estudo de investigação em meio escolar (Despacho N.º 15847/2007, publicado no DR 2ª série n.º 140 de 23 de julho), a DGE não é competente para autorizar a realização de estudos/aplicação de inquéritos/questionários ou outros instrumentos, em estabelecimentos de ensino privados.
- d) Consideramos fundamental que seja dado feedback à DGE sobre o resultado do presente estudo.

Pode consultar na Internet toda a informação referente a este pedido no endereço <http://mime.gepe.min-edu.pt>. Para tal terá de se autenticar fornecendo os dados de acesso da entidade.

Appendix 2 – Pretest Results

Table 1- Mean rating for each toy

	Puzzle	Dinossaur 1	Dinossaur 2	Airplane	Bouncing Ball	Red Car	Yellow Car	Blue Car
Mean	4,143	3,429	3,571	3,857	4,571	3,857	4,000	3,714
Mean Girls	4,250	3,500	3,250	3,000	4,750	3,000	3,500	3,000
Mean Boys	4,000	3,333	4,000	5,000	4,333	5,000	4,667	4,667
Mean 6 years	4,000	1,000	3,000	5,000	5,000	5,000	5,000	5,000
Mean 7 years	3,667	3,667	3,333	3,667	4,667	4,333	4,667	3,667
Mean 9 years	4,000	4,000	5,000	5,000	4,000	5,000	4,000	5,000
Mean 10 years	5,000	4,000	3,500	3,000	4,500	2,000	2,500	2,500

Appendix 3 – Parents’ Consent Form



Carla Ferreira – Mestrado em Gestão
Nova School of Business and Economics
Campus de Campolide, Travessa Estêvão Pinto
1099-032 Lisboa

Assunto: **Pedido de autorização para participação em estudo sobre oferta de brinquedos com comida saudável**

Exmo. Sr. Encarregado de Educação,

O meu nome é Carla Ferreira e sou aluna de Mestrado de Gestão da Nova School of Business and Economics. Estou neste momento a realizar a minha tese na área de comportamento do consumidor infantil.

Para o efeito, estou a realizar um estudo sobre a utilização do marketing para fomentar hábitos alimentares saudáveis, para o qual necessitava que o(a) seu(sua) educando(a) preenchesse um inquérito na escola. Necessitava também que o(a) Sr(a). preenchesse um questionário e o devolvesse na escola, juntamente com esta folha de autorização assinada (por favor não separe as folhas).

Os dados recolhidos serão analisados por mim e a confidencialidade está garantida uma vez que apenas os resultados serão publicados, sem que haja referência aos dados dos alunos e das escolas onde o estudo foi realizado. O(a) seu(sua) educando(a) poderá desistir da participação no estudo a qualquer momento.

Os resultados do estudo poderão ser publicados, apresentados em artigos relacionados com o tema, e serão enviados para as escolas que participam no estudo, para que os encarregados de educação os possam consultar.

Com os melhores cumprimentos,

Carla Ferreira

.....

Eu, _____, encarregado(a) de educação do(a) aluno(a) _____ do ___ano, turma __, declaro que autorizo o(a) meu (minha) educando(a) a participar no estudo.
_____, ____ de _____ de 2013
O Encarregado de Educação

Appendix 4 – Parents' Questionnaire

Questionário

1. Com que frequência consome estes produtos? (Coloque uma cruz na sua escolha)

	1 vez por semana	2 vezes por semana	3-4 vezes por semana	5-6 vezes por semana	Todos os dias
Vegetais					
Frutas					
Batatas fritas					
Doces					
Refrigerantes					

2. Com que frequência o(a) seu (sua) educando(a) consome estes produtos? (Coloque uma cruz na sua escolha)

	1 vez por semana	2 vezes por semana	3-4 vezes por semana	5-6 vezes por semana	Todos os dias
Vegetais					
Frutas					
Batatas fritas					
Doces					
Refrigerantes					

3. Numa escala de 1 a 5 (1= nada saudável, 5= muito saudável), como classificaria os seus hábitos alimentares? (Faça um círculo na resposta correcta)

Muito pouco saudável 1 2 3 4 5 Muito saudável

4. Numa escala de 1 a 5 (1= nada saudável, 5= muito saudável), como classificaria os hábitos alimentares do(a) seu (sua) educando(a)? (Faça um círculo na resposta correcta)

Muito pouco saudável 1 2 3 4 5 Muito saudável

Obrigada pela colaboração.

Appendix 5 – Children’s Questionnaires

Questionário (F)

Tenho ____ anos

Sou: Rapariga Rapaz

Ando no ____º ano

1. Gostas da comida?

Não gosto nada



Não gosto



Não sei se gosto ou não



Gosto



Gosto muito



2. Como achas que a comida sabe?

O sabor é horrível



Não gosto do sabor



Não sei se sabe bem ou mal



Gosto do sabor



Sabe tão bem



3. Gostavas de comprar esta comida ou pedir aos teus pais para comprarem?

Não gostava



Gostava pouco



Gostava mais ou menos



Gostava



Gostava muito



Questionário (T1)

Tenho ____ anos

Sou: Rapariga

Rapaz

Ando no ____º ano

1. Gostas da bola saltitona?

Não gosto nada



Não gosto



Gosto mais ou menos



Gosto



Gosto muito



2. Achas que a bola é:

Nada
divertida



Pouco
divertida



Mais ou menos
divertida



Divertida



Muito
divertida



Nada gira



Pouco gira



Mais ou menos
gira



Gira



Muito gira



Nada fixe



Pouco fixe



Mais ou menos
fixe



Fixe



Muito fixe



Má
qualidade



Pouca
qualidade



Qualidade mais
ou menos



Boa
qualidade



Muito boa
qualidade



Questionário (T2/T3/T4)

Tenho ____ anos

Sou: Rapariga

Rapaz

Ando no ____º ano

1. Gostas do puzzle?

Não gosto nada



Não gosto



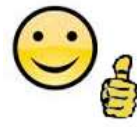
Gosto mais ou menos



Gosto



Gosto muito



2. Achas que o puzzle é:

Nada divertido



Pouco divertido



Mais ou menos divertido



Divertido



Muito divertido



Nada giro



Pouco giro



Mais ou menos giro



Giro



Muito giro



Nada fixe



Pouco fixe



Mais ou menos fixe



Fixe



Muito fixe



Má qualidade



Pouca qualidade



Qualidade mais ou menos



Boa qualidade



Muito boa qualidade



Questionário (E1)

Tenho ____ anos

Sou: Rapariga Rapaz

Ando no ____º ano

Olha por favor para a imagem e imagina que, na compra desta comida te ofereciam a bola saltitona da imagem. Depois, responde às seguintes perguntas por favor (faz uma bola à volta da tua escolha).

1. Gostas da comida?

Não gosto nada



Não gosto



Não sei se gosto ou não



Gosto



Gosto muito



2. Como achas que a comida sabe?

O sabor é horrível



Não gosto do sabor



Não sei se sabe bem ou mal



Gosto do sabor



Sabe tão bem



3. Gostavas de comprar esta comida ou pedir aos teus pais para comprarem?

Não gostava



Gostava pouco



Gostava mais ou menos



Gostava



Gostava muito



4. Gostas da bola saltitona?

Não gosto nada



Não gosto



Gosto mais ou menos



Gosto



Gosto muito



5. Achas que a bola é:

Nada divertida



Pouco divertida



Mais ou menos divertida



Divertida



Muito divertida



Nada gira



Pouco gira



Mais ou menos gira



Gira



Muito gira



Nada fixe



Pouco fixe



Mais ou menos fixe



Fixe



Muito fixe



Má qualidade



Pouca qualidade



Qualidade mais ou menos



Boa qualidade



Muito boa qualidade



Entrevista - Questionário (E2)

Fazes coleção de alguma coisa? Então agora imagina que estes três puzzles fazem parte da mesma coleção e cada vez que comprares esta comida é oferecido um dos puzzles. (Mostrar imagens dos três puzzles e da comida saudável)

Imagina que já tinhas comprado a comida duas vezes e por isso já tinhas estes dois puzzles. (Dar imagem de dois puzzles à criança, dando-lhe tempo para as manusear)

Imagina agora que ias comprar outra vez a comida e te davam este puzzle (Mostrar imagem de puzzles não repetido).

Agora, responde às perguntas que estão na folha por favor, fazendo uma bola à volta da tua escolha.

1. Gostas da comida?

Não gosto nada



Não gosto



Não sei se gosto ou não



Gosto



Gosto muito



2. Como achas que a comida sabe?

O sabor é horrível



Não gosto do sabor



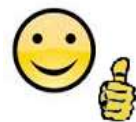
Não sei se sabe bem ou mal



Gosto do sabor



Sabe tão bem



3. Gostavas de comprar esta comida ou pedir aos teus pais para comprarem?

Não gostava



Gostava pouco



Gostava mais ou menos



Gostava



Gostava muito



4. Gostas do puzzle?

Não gosto nada



Não gosto



Gosto mais ou menos



Gosto



Gosto muito



5. Achas que o puzzle é:

Nada divertido



Pouco divertido



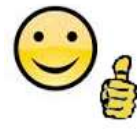
Mais ou menos divertido



Divertido



Muito divertido



Nada giro



Pouco giro



Mais ou menos giro



Giro



Muito giro



Nada fixe



Pouco fixe



Mais ou menos fixe



Fixe



Muito fixe



Má qualidade



Pouca qualidade



Qualidade mais ou menos



Boa qualidade



Muito boa qualidade



Tenho ____ anos

Sou: Rapariga

Rapaz

Ando no ____º ano

Entrevista - Questionário (E3)

Fazes coleção de alguma coisa? Então agora imagina que estes três puzzles fazem parte da mesma coleção e cada vez que comprares esta comida é oferecido um dos puzzles. (Mostrar imagens dos três puzzles e da comida saudável)

Imagina que já tinhas comprado a comida duas vezes e por isso já tinhas estes dois puzzles. (Dar imagem de dois puzzles à criança, dando-lhe tempo para as manusear)

Imagina agora que ias comprar outra vez a comida e te davam este puzzle (Mostrar imagem de puzzles repetido).

Agora, responde às perguntas que estão na folha por favor, fazendo uma bola à volta da tua escolha.

1. Gostas da comida?

Não gosto nada



Não gosto



Não sei se gosto ou não



Gosto



Gosto muito



2. Como achas que a comida sabe?

O sabor é horrível



Não gosto do sabor



Não sei se sabe bem ou mal



Gosto do sabor



Sabe tão bem



3. Gostavas de comprar esta comida ou pedir aos teus pais para comprarem?

Não gostava



Gostava pouco



Gostava mais ou menos



Gostava



Gostava muito



4. Gostas do puzzle?

Não gosto nada



Não gosto



Gosto mais ou menos



Gosto



Gosto muito



5. Achas que o puzzle é:

Nada divertido



Pouco divertido



Mais ou menos divertido



Divertido



Muito divertido



Nada giro



Pouco giro



Mais ou menos giro



Giro



Muito giro



Nada fixe



Pouco fixe



Mais ou menos fixe



Fixe



Muito fixe



Má qualidade



Pouca qualidade



Qualidade mais ou menos



Boa qualidade



Muito boa qualidade



Tenho ____ anos

Sou: Rapariga

Rapaz

Ando no ____º ano

Appendix 6 – Images Presented on the Questionnaires



Figure 1 - Image Questionnaire F



Figure 2 - Image Questionnaire T1



Figure 3 - Image Questionnaire T2



Figure 4 - Image Questionnaire T3



Figure 5 - Image Questionnaire T4



Figure 6 - Image Questionnaire E1



Figure 7 - Images Questionnaire E2 and E3

Appendix 7 – Results from Attitude towards Healthy Food

Table 2 – Changes in attitude towards healthy food when paired with non-collectible toy

Variable		Sample	T-test			Likelihood Ratio	
			Mean		P-value	P-value	Value
			Group F	Group E1			
Attitude towards healthy food	Likability	Total	3,950	4,053	0,809	0,453	3,668
		2nd Grade	3,700	4,000	0,660	0,423	3,878
		4th Grade	4,200	4,100	0,856	0,895	0,223
	Anticipated Taste	Total	3,900	4,316	0,251	0,394	4,093
		2nd Grade	3,500	4,333	0,100	0,442	3,739
		4th Grade	4,300	4,300	1,000	0,359	4,360
	Purchase Intention	Total	3,800	3,579	0,641	0,218	5,757
		2nd Grade	3,500	3,111	0,611	0,115	7,420
		4th Grade	4,100	4,000	0,862	0,968	0,255

Table 3 – Changes in attitude towards healthy food when paired with collectible toys

Variable		Sample	T-test			Likelihood Ratio	
			Mean		P-value	P-value	Value
			Group F	Group E2			
Attitude towards healthy food	Likability	Total	3,950	4,188	0,583	0,520	3,230
		2nd Grade	3,700	4,111	0,552	0,548	3,060
		4th Grade	4,200	4,286	0,873	0,409	2,889
	Anticipated Taste	Total	3,900	3,813	0,816	0,259	5,290
		2nd Grade	3,500	3,667	0,775	0,856	1,334
		4th Grade	4,300	4,000	0,508	0,105	6,145
	Purchase Intention	Total	3,800	4,125	0,422	0,054	7,631
		2nd Grade	3,500	4,222	0,270	0,076	6,879
		4th Grade	4,100	4,000	0,859	0,471	2,522

Table 4 – Changes in attitude towards healthy food when paired with superfluous collectible toys

Variable		Sample	T-test			Likelihood Ratio	
			Mean		P-value	P-value	Value
			Group F	Group E3			
Attitude towards healthy food	Likability	Total	3,950	3,867	0,848	0,169	6,434
		2nd Grade	3,700	3,500	0,743	0,047	9,641
		4th Grade	4,200	4,600	0,506	0,647	0,872
	Anticipated Taste	Total	3,900	3,867	0,933	0,354	4,408
		2nd Grade	3,500	3,500	1,000	0,494	3,394
		4th Grade	4,300	4,600	0,597	0,413	2,863
	Purchase Intention	Total	3,800	3,533	0,598	0,347	4,460
		2nd Grade	4,100	3,800	0,884	0,106	7,638
		4th Grade	3,500	3,400	0,714	0,397	2,965

Table 5 – Changes in attitude towards healthy food when paired with superfluous and non-superfluous collectible toys

Variable		Sample	T-test			Likelihood Ratio	
			Mean		P-value	P-value	Value
			Group E2	Group E3			
Attitude towards healthy food	Likability	Total	4,188	3,867	0,418	0,601	1,863
		2nd Grade	4,111	3,500	0,292	0,155	5,233
		4th Grade	4,286	4,600	0,448	0,535	1,253
	Anticipated Taste	Total	3,813	3,867	0,884	0,048	9,597
		2nd Grade	3,667	3,500	0,745	0,316	4,728
		4th Grade	4,000	4,600	0,186	0,014	8,524
	Purchase Intention	Total	4,125	3,533	0,147	0,312	4,764
		2nd Grade	4,222	3,400	0,100	0,272	5,153
		4th Grade	4,000	3,800	0,824	0,124	5,751

Appendix 8 – Likability for Healthy Food, Anticipated Taste and Purchase Intention Correlations

Table 6 – Relationship between attitude towards healthy food and purchase intention and age

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Likability for healthy food and age	0,142	20,853	0,313	0,147
Anticipated taste and age	0,686	21,117	0,183	0,193
Purchase intention and age	0,656	16,950	0,564	0,084

Table 7 – Relationship between likability for healthy food and anticipated taste and purchase intention

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Likability and anticipated taste	0,000	64,234	0,000	0,727
Likability and purchase intention	0,001	40,160	0,000	0,439

Appendix 9 – Attitude towards non-collectibles and superfluous collectibles

Table 8 – Differences on attitude towards non-collectibles and superfluous collectibles

Variable		Sample	T-test			Likelihood Ratio	
			Mean		P-value	P-value	Value
			Group E1	Group E3			
Attitude towards Toy Premiums	Likability	2nd Grade	3,556	4,800	0,052	0,113	7,466
		4th Grade	4,600	4,400	0,587	0,243	2,831
	Fun	2nd Grade	4,889	4,600	0,164	0,142	2,161
		4th Grade	4,500	4,200	0,478	0,018	8,063
	Pretty	2nd Grade	4,556	4,400	0,595	0,513	1,334
		4th Grade	4,200	4,000	0,744	0,248	4,128
	Cool	2nd Grade	4,667	4,300	0,315	0,443	1,669
		4th Grade	4,700	4,200	0,161	0,243	2,831
	Quality	2nd Grade	4,222	4,400	0,650	0,177	4,924
		4th Grade	4,300	4,600	0,567	0,553	2,093

Appendix 10 – Attitude towards healthy food paired with non-collectibles and superfluous collectibles

Table 9 – Differences on attitude towards healthy food when paired with non-collectibles and superfluous collectibles

Variable		Sample	T-test			Likelihood Ratio	
			Mean		P-value	P-value	Value
			Group E1	Group E3			
Attitude towards Healthy Food	Likability	2nd Grade	4,000	3,500	0,377	0,330	3,427
		4th Grade	4,100	4,600	0,397	0,560	1,159
	Anticipated Taste	2nd Grade	4,333	3,500	0,490	0,133	5,604
		4th Grade	4,300	4,600	0,643	0,131	5,635
	Purchase Intention	2nd Grade	3,111	3,400	0,638	0,558	3,002
		4th Grade	4,000	3,800	0,803	0,263	3,990

Appendix 11- Eating Habits and Attitude towards Healthy Food

Table 10 – Relation between children’s likability for healthy food and parents’ eating habits

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Children's likability for healthy food and parent's consumption of vegetables	0,286	18,665	0,093	0,204
Children's likability for healthy food and parent's consumption of fruits	0,026	23,117	0,006	0,332
Children's likability for healthy food and parent's consumption of french fries	0,277	9,834	0,397	-0,110
Children's likability for healthy food and parent's consumption of sweets	0,007	33,286	0,638	-0,058
Children's likability for healthy food and parent's consumption of soda	0,659	13,182	0,846	0,025

Table 11 – Relation between anticipated taste and parents’ eating habits

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Children's anticipated taste of healthy food and parent's consumption of vegetables	0,305	18,330	0,253	0,139
Children's anticipated taste of healthy food and parent's consumption of fruits	0,073	19,715	0,055	0,234
Children's anticipated taste of healthy food and parent's consumption of french fries	0,409	8,250	0,796	-0,033
Children's anticipated taste of healthy food and parent's consumption of sweets	0,123	22,671	0,224	-0,151
Children's anticipated taste of healthy food and parent's consumption of soda	0,825	10,749	0,701	-0,050

Table 12 – Relation between children’s purchase intention and parents’ eating habits

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Children's purchase intention and parent's consumption of vegetables	0,016	30,343	0,090	0,205
Children's purchase intention and parent's consumption of fruits	0,009	26,659	0,124	0,189
Children's purchase intention and parent's consumption of french fries	0,306	9,445	0,875	-0,020
Children's purchase intention and parent's consumption of sweets	0,754	11,849	0,174	-0,168
Children's purchase intention and parent's consumption of soda	0,428	16,357	0,908	-0,015

Table 13 – Relation between children’s likability for healthy food and eating habits

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Children's likability for healthy food and consumption of vegetables	0,447	16,078	0,255	0,138
Children's likability for healthy food and consumption of fruits	0,226	15,298	0,009	0,310
Children's likability for healthy food and consumption of french fries	0,268	14,530	0,791	0,034
Children's likability for healthy food and consumption of sweets	0,799	11,175	0,175	-0,165
Children's likability for healthy food and consumption of soda	0,503	15,290	0,496	-0,087

Table 14 – Relation between anticipated taste and children’s eating habits

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Children's anticipated taste of healthy food and consumption of vegetables	0,327	17,955	0,081	0,210
Children's anticipated taste of healthy food and consumption of fruits	0,542	10,844	0,099	0,199
Children's anticipated taste of healthy food and consumption of french fries	0,562	10,620	0,305	0,131
Children's anticipated taste of healthy food and consumption of sweets	0,558	14,548	0,247	-0,141
Children's anticipated taste of healthy food and consumption of soda	0,858	10,159	0,305	-0,131

Table 15 – Relation between children’s purchase intention and eating habits

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Children's purchase intention and consumption of vegetables	0,099	23,591	0,052	0,234
Children's purchase intention and consumption of fruits	0,586	10,347	0,160	0,170
Children's purchase intention and consumption of french fries	0,832	7,377	0,901	-0,016
Children's purchase intention and consumption of sweets	0,626	13,632	0,097	-0,201
Children's purchase intention and consumption of soda	0,563	14,480	0,790	-0,034

Table 16 – Relation between children’s attitude towards and purchase intention of healthy food and healthiness of eating habits

	Likelihood Ratio		Spearman Correlation	
	P-value	Value	P-value	Value
Children's likability for healthy food and parent's healthiness of eating habits	0,462	15,875	0,868	0,021
Children's likability for healthy food and healthiness of eating habits	0,685	9,204	0,883	-0,018
Children's anticipated taste of healthy food and parent's healthiness of eating habits	0,479	15,629	0,384	0,107
Children's anticipated taste of healthy food and healthiness of eating habits	0,537	10,906	0,298	0,127
Children's purchase intention and parent's healthiness of eating habits	0,504	15,290	0,345	0,116
Children's purchase intention and healthiness of eating habits	0,678	9,289	0,778	0,035

Appendix 12 – Results from Attitude towards Toy Premiums

Table 17– Changes in attitude towards non-collectible toy

Variable		Sample	T-test			Likelihood Ratio	
			Mean		P-value	P-value	Value
			Group F	Group E1			
Attitude towards non-collectible toys	Likability	Total	4,556	4,105	0,340	0,637	5,541
		2nd Grade	4,800	3,556	0,053	0,356	4,386
		4th Grade	4,250	4,600	0,458	0,732	0,625
	Fun	Total	4,333	4,684	0,176	0,070	9,947
		2nd Grade	4,400	4,889	0,122	0,053	3,742
		4th Grade	4,250	4,500	0,597	0,440	6,225
	Pretty	Total	4,667	4,368	0,389	0,576	1,104
		2nd Grade	4,800	4,556	0,400	0,348	0,880
		4th Grade	4,500	4,200	0,654	0,692	0,738
	Cool	Total	4,667	4,684	0,939	0,557	1,169
		2nd Grade	4,600	4,667	0,859	0,331	2,213
		4th Grade	4,750	4,700	0,865	0,850	0,036
	Quality	Total	4,556	4,263	0,438	0,241	4,200
		2nd Grade	4,800	4,222	0,287	0,559	2,065
		4th Grade	4,250	4,300	0,931	0,233	4,280

Table 18 - Changes in attitude towards collectible toys

Variable		Sample	T-test			Likelihood Ratio	
			Mean		P-value	P-value	Value
			Group F	Group E2			
Attitude towards collectible toys	Likability	Total	4,556	4,313	0,483	0,311	4,773
		2nd Grade	5,000	4,667	0,192	0,144	3,869
		4th Grade	4,143	3,857	0,680	0,071	8,627
	Fun	Total	4,407	3,563	0,036	0,095	7,909
		2nd Grade	4,769	3,667	0,072	0,099	6,285
		4th Grade	4,071	3,429	0,199	0,374	3,113
	Pretty	Total	4,333	4,438	0,680	0,319	3,517
		2nd Grade	4,615	4,778	0,523	0,575	1,107
		4th Grade	4,071	4,000	0,864	0,371	3,139
	Cool	Total	4,333	3,875	0,266	0,130	7,117
		2nd Grade	4,923	4,333	0,222	0,219	3,034
		4th Grade	3,786	3,286	0,346	0,281	5,062
	Quality	Total	4,444	3,813	0,036	0,031	10,616
		2nd Grade	4,846	4,222	0,098	0,094	4,732
		4th Grade	4,071	3,286	0,100	0,032	8,797

Table 19 – Changes towards superfluous collectible toys

Variable	Sample	T-test			Likelihood Ratio		
		Mean		P-value	P-value	Value	
		Group F	Group E3				
Attitude towards collectible toys	Likability	Total	4,556	4,667	0,610	0,863	0,296
		2nd Grade	5,000	4,800	0,343	0,189	1,725
		4th Grade	4,143	4,400	0,505	0,356	2,068
	Fun	Total	4,407	4,467	0,806	0,124	5,753
		2nd Grade	4,769	4,600	0,405	0,383	0,762
		4th Grade	4,071	4,200	0,787	0,167	5,069
	Pretty	Total	4,333	4,267	0,776	0,829	0,376
		2nd Grade	4,615	4,400	0,454	0,634	0,910
		4th Grade	4,071	4,000	0,852	0,914	0,181
	Cool	Total	4,333	4,267	0,809	0,387	1,898
		2nd Grade	4,923	4,300	0,043	0,041	6,397
		4th Grade	3,786	4,200	0,379	0,471	1,504
	Quality	Total	4,444	4,467	0,914	0,015	8,450
		2nd Grade	4,846	4,400	0,035	0,024	5,098
		4th Grade	4,071	4,600	0,246	0,156	3,713

Table 20 - Differences on attitude towards collectibles and superfluous collectibles

Variable	Sample	T-test			Likelihood Ratio		
		Mean		P-value	P-value	Value	
		Group E2	Group E3				
Attitude towards collectible toys	Likability	Total	4,313	4,667	0,324	0,568	2,942
		2nd Grade	4,667	4,800	0,670	0,453	1,584
		4th Grade	3,857	4,400	0,448	0,244	4,164
	Fun	Total	3,563	4,467	0,023	0,054	0,329
		2nd Grade	3,667	4,600	0,123	0,159	5,189
		4th Grade	3,429	4,200	0,140	0,265	3,967
	Pretty	Total	4,438	4,267	0,560	0,316	3,533
		2nd Grade	4,778	4,400	0,183	0,309	2,348
		4th Grade	4,000	4,000	1,000	0,513	2,299
	Cool	Total	3,875	4,267	0,358	0,298	4,900
		2nd Grade	4,333	4,300	0,948	0,222	4,399
		4th Grade	3,286	4,200	0,248	0,538	3,117
	Quality	Total	3,813	4,467	0,046	0,175	6,342
		2nd Grade	4,222	4,400	0,620	0,420	1,736
		4th Grade	3,286	4,600	0,036	0,034	8,662