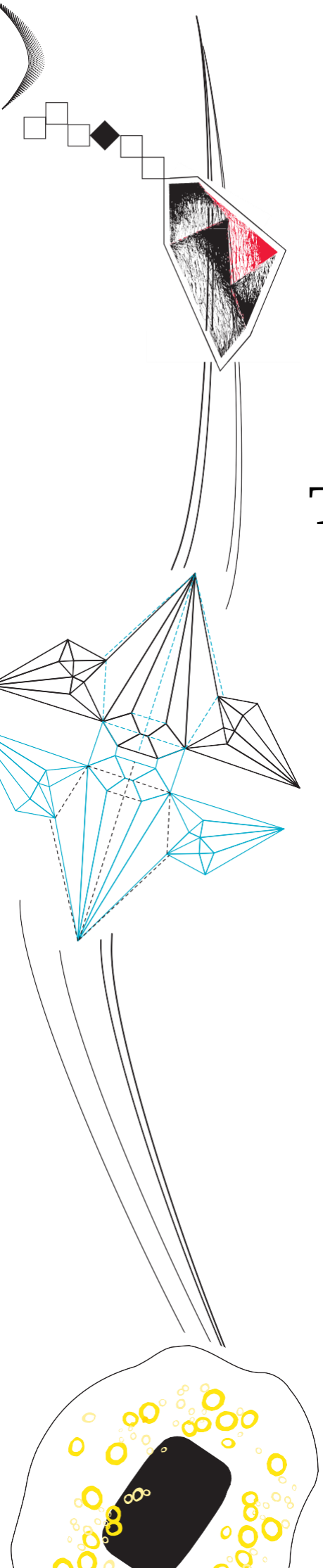

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The effect of transparency and text quantity on food packages

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ABSTRACT

Product appearance is a topic that is discussed in several researches nowadays. It is not surprising that this topic is discussed widely, since Crilly, Moultrie, and Clarkson (2004) report that the product appearance influences commercial success. As mentioned by Sara (1990), the product package is the "silent salesman". This study investigated to what extent transparency and the text quantity influence consumers' perception of healthiness, perception of naturalness, taste evaluation, and purchase intention in the food sector.

A 2 (transparency) by 2 (type of text) by 2 (product type) experimental design examined the influence on the aforementioned dependent variables. The two types of products (healthy food vs. unhealthy food), the two types of transparency (transparent package vs. non-transparent package), and the two types of text (low text quantity vs. medium text quantity) were manipulated in 8 different conditions. The pre-study decided which products belong to the healthy and unhealthy food category and the manipulation text is checked to see whether the two types of text quantities are interpreted correctly by the respondents. In total, 8 stimulus materials were created, whereby 4 packages were created for the healthy food category and 4 for the unhealthy food category. Those packages differed only in transparency and type of text. The main study is performed with randomly selected participants at the University of Twente in the Netherlands.

The results of this research showed significant evidence that the healthy food category is evaluated as healthier, tastier, more natural, and the respondents indicated a higher purchase interest compared to the unhealthy food category. Interaction effects indicated that transparent packages should be used for healthy food to increase the perception of healthiness. On the other hand, non-transparent packages should be used for unhealthy food in order to increase the perception of healthiness. Besides, the type of text indicated significant effects on the dependent variables: perception of healthiness, taste evaluation, and purchase intention. A low text quantity should be used for healthy food and a medium text quantity should be used for unhealthy food in order to increase the effects on these dependent variables. Finally, the general health interest moderated the relationship between the product type and perception of healthiness, whereby the moderator weakens the effect of the product type on the perception of healthiness. All in all, the transparency and type of text have an influence on the mentioned consumer responses, providing that it is combined with the right product type.

These results are mostly relevant for manufacturers, product designers, marketers, and researchers in the food sector. It is recommended to take considerations based on transparency and type of text on packages, so the "silent salesman" can do his work at its best.

Keywords: packaging designs, food packaging, transparency, text quantity, health claims.

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1 INTRODUCTION

Nowadays consumers are exposed to various product package designs in the supermarkets. The product package is important since the product's visual appearance is the first feature that is noticed by the consumer. Besides, the product package ensures competition, as they want to catch the consumer's attention. Not only the same product categories deal with competition, but also different product categories, such as healthy and unhealthy food. Consuming healthy food has become a big trend that creates new chances and challenges for the food sector (Lähteenmäki, 2013). It is a challenge to attract the consumer's attention on healthy food products, whereby the unhealthy food sector tries to do the same. As a result, the consumer is exposed to a lot of information through texts, pictures, and advertisements while shopping food in the supermarket.

The package of a product belongs to one of the cues which cannot be blocked out or controlled by the consumer. According to Hine (1995), the package ensures commitment and makes the final sales pitch. Hence, food packages in supermarkets play a big role in recognizing the product and purchasing food. Food packages show up in all kind of shapes and sizes, whereby the consumers make judgements about the product at a glance (Folkes & Matta, 2004). Another function of the package is for instance, to inform the consumer through texts about the ingredients and the product's healthiness. Shoppers often do not spend the seemingly effort to read product label (Cole & Balasubramanian, 1993). Only 27% of the shoppers look at nutrition information on the label with guideline daily amount and the nutrition information (Grunert, Wills, & Fernandez-Celemin, 2010). One of the core sources of this study, mentioned that most consumers are influenced by food labels when making food choices (Peters-Texeira, 2005).

However, food package development is crucial to food companies in order to meet and sustain consumer demand. The least amount in research and development is invested by the food industry compared to other sectors (Grunert et al., 1996). Yet there is no research found that examines specifically the effect of transparency on healthy and unhealthy food. This might be relevant for both food categories, since packages are key determinants. Besides, the right form of transparency might strengthen the 'silent salesman'. It is also relevant to discover how much text on the packages is the most effective. Consumers generate their expectations among others from cues, such as texts on packages, which are expressive sellers. There are claims that consumers prefer short texts on packages, but to what extend does this apply specifically to both healthy and unhealthy food?

This study focused on the influence on the consumer responses towards package designs with different text quantities and transparency. The independent variables tested in what way it is possible for the healthy and unhealthy food sector to increase the sale by persuading the consumer. The consumer responses, perception of healthiness and naturalness, taste evaluation, and purchase intention, were tested in a 2 (transparency) by 2 (type of text) by 2(product type) experiment.

Therefore, the following research question is examined:
"To what extent can transparency and the different types of text influence the consumer responses with the role of general health interest in the healthy and unhealthy food sector?"

2 THEORETICAL FRAMEWORK

A theoretical framework is made to demonstrate and understand theories that are relevant to this study. Theories from several researchers that are relevant to this study's research question are described in this section. Besides, hypotheses are formulated on the basis of the theoretical framework.

2.1. Product packaging and appearances

In general, packages provide information and ensure that the product is recognizable and visible. Packages show up in all kind of shapes and sizes. Most often the package depends on the nature of the product and sometimes the basis for the variation is not obvious (e.g., shapes of shampoos). More specifically, according to Roy, Saha, Kitano and Saha (2012) three categories of packaging exist. Firstly, at primary packaging the product is directly in contact with the package, such as perfume bottles. Secondary packaging contains primary packaging and it serves to protect and identify the product. It also communicates the quality of the product. Finally, tertiary packaging contains the two previous packages and it functions as a distributor and protector. It unifies the product throughout the commercial chain. In marketing communication package designs continue to grow and are very important in the attempt to reach and persuade consumers (Underwood & Ozanne, 1998). Crilly, Moultrie, and Clarkson (2004) mention that the product appearance influences commercial success. As consumers buy by perception of value and image, the packaging is the "silent salesman" (Sara, 1990). The brand image can be reinforced by the package appearance, as the brand's identity is expressed visually in the products' appearance (Schmitt and Simonson, 1997). The products' appearance communicates messages too, as it may look friendly, expensive, or rude.

In the food sector, the product is often not in its final form. The consumer relies on the package, which gives an impression of the product in its prepared form. Therefore, Harckham (1989) described the package as the consumer's window. The package projects the quality and value of the product (Harckham, 1989). Besides, it ensures that the consumer makes judgements about the product at a glance (Folkes & Matta, 2004). As reported by several researchers, vision is a very important sense. It subconsciously makes judgements in the minds of the consumers (Crilly, Moultrie & Clarkson, 2004; Ampuero & Vila, 2006). Additionally, vision is the most important sensory modality during the buying stage in the food sector. Consumers are able to evaluate the contents of the package through vision (e.g. the colour and ingredients) (Schifferstein et al., 2013). There is a big chance that consumers will pay closer attention to the product that stands out visually from competitive products, since it "catches the eye" of the consumer during the purchase phase (Creusen and Schoormans, 2005). As mentioned by Schoormans and Robben (1997), attention refers to information processing capacity on a particular stimulus through momentary focusing. The purchase probability for food products has been found to heighten by the attention-drawing ability of a package (Garber, 1995). Additionally, Schoormans and Robben (1997) confirmed that a slightly different appearance catches consumers' attention. According to Creusen and Schoormans (2005) attention towards a product can be drawn by the product's appearance. A slightly different, attention drawing package might influence one's purchase intention. Purchase intentions are personal action tendencies that relates to the brand (Bagozzi et al. 1979). According to Spears and Singh (2014), a precise definition of purchase intention may be: "Purchase intentions are an individual's conscious plan to make an effort to purchase a brand" (p.56). Purchase intention is a construct that is very useful in predicting consumer behaviour.

Furthermore, marketing scholars have studied the effect of packaging on the amount of food people are consuming (Kahn & Wansink, 2004; Khare & Inman, 2006). The key conclusion is that the amount of food that people consume is influenced by diverse external cues and not only by physiological hunger cues. These diverse external cues could be names, friends, labels, colors, shapes, lights and last but not least food packages (Wansink, 2006). Therefore, packages are important cues that affect the food consumption. Food packages might also affect the perception of healthiness, which in turn affect the food intake (Wansink & Chandon, 2006). The perception of healthiness indicates the extent to which the consumer perceives food as healthy. This might be evaluated by asking one-self whether the food might have a negative impact on his or her health, for example on the cholesterol or weight. On the other hand, positive influences on the health might increase the perception of healthiness. Besides, the food package might influence the perception of naturalness. Rozin et al. (2004) defined the word natural as following: a natural item is an item which has not been changed significantly by humans. According to these authors, a natural item is identically the same as the item in its natural place. Furthermore, different beliefs influence one's perception of naturalness. The first belief is that a natural product is better since it does not cause damage to nature. Second, natural products are believed to be superior since their sensory properties are more pleasant. For instance, claimed is that natural food tastes better than food with human intervention. In addition, the naturalness of a food product is associated with the product's healthiness. These believes might in turn affect the food intake.

After all, the necessity of product packaging and appearances are indicated by previous researches. According to Schürmann (2008), it is the transparent package that is increasing in popularity. After all, Schürmann (2008) mentions that a powerful sales incentive can be provided by attractive contents in transparent packages. Attractive contents might influence the taste evaluation, since the consumer sees the product through the package. The perceived and experienced taste of food is affected by the package during buying, product usage and consumption (Schifferstein, Fenko, Desmet, Labbe & Martin, 2013). When evaluating the taste, one may evaluate a product as very tasteful and another may evaluate a product as not tasty at all. This makes the taste evaluation an objective assessment (Allen, Gupta, Monnir, 2008).

2.2. Transparent packaging

Transparent packaging is becoming more popular. A transparent food package is the window for consumers that shows what they are going to consume. Some product manufacturers in the food industry are already using transparent packages. With transparent packages consumers are able to have a view on all aspects of the product, such as the colour, quantity and probably even the ingredients in the product (e.g. spices). For this reason, misapprehensions about the product might be prevented (Spence, 2015). Besides, being able to see aspects of the product could have an impact on the consumer. As an example, it can influence the consumers' acceptance and liking of the food, thus also the perceived attractiveness and food intake (Imram, 1999; Wei, Ou, Luo, Hutchings, 2012). Hence, the type of food might have an effect on the preference of transparent packages. This means that there might be an interaction effect between the type of food product and the transparency of the package. It is interesting to find out to what extent different types of food are attractive in transparent or non-transparent packages. Peters-Texeira and Badrie (2005) confirmed in their study, that notably 40% of the respondents confirmed that they preferred a transparent package and 40% indicated that it depends on the product type. Only 20% did not prefer a transparent package.

Furthermore, consumer purchase decisions are positively influenced by transparent packages. As supported by Deng and Srinivasan (2013), the effect of transparent packaging on the consumption of food is moderated by different food characteristics, such as the size. The salience effect is high for small and visually attractive foods. Consumers eat more of this kind of food when it is packaged transparently. The respondents consumed notably more from the transparent package (69%), than from the non-transparent package. To increase the consumption and sales, it is suggested that small foods should be packaged transparently and large foods in non-transparent packages.

Billeter, Zhu and Inman (2012) suggest that consumers prefer transparent packages over products in non-transparent packages, even when the products' freshness and quality is controlled explicitly. This can be clarified by the fact that people associate transparency with honesty, candidness, and forthcoming behaviour. Besides, during the purchase context people often make judgements about products based on salient non-diagnostic packaging cues (e.g. transparency), instead of diagnostic information of the product (e.g. ingredients). However, this does not mean that the effect of diagnostic information (texts on packages) might strengthen the effect of transparency, for instance on the purchase intention. It has been proven that judgements about products are made more often based on non-diagnostic cues (transparency), but what kind of effects will there be if non-diagnostic and diagnostic cues are interacting with each other?

Although, if we only analyse the literature of the variable transparency, it means that transparent packages lead to a greater purchase intention (Billeter, Zhu, and Inman, 2012). Referring to the literature, it is assumable that transparent packages would have a higher preference over non-transparent packages.

The following hypotheses are formulated concerning the package transparency (H1):

- H1a- If a transparent package is used, then the effect on the perceived healthiness will be higher than if a non-transparent package is used.
- H1b - If a transparent package is used, then the effect on the perceived naturalness will be higher than if a non-transparent package is used.
- H1c- If a transparent package is used, then the effect on the taste evaluation will be higher than if a non-transparent package is used.
- H1d- If a transparent package is used, then the effect on the purchase intention will be higher than if a non-transparent package is used.

2.3. Nutrition and health claims

Consumers are mostly presented to pre-packaged foods with nutrition information and food labels. These texts on the package are a way for consumers to distinguish healthy and unhealthy food. According to Imran (1999), consumers' food choices are influenced by many factors. Consumers generate their expectations among others from cues, such as the product information and labelling. These cues are expressive sellers. According to Cousté, Martos-Partal and Martínez-Rios (2012), benefits such as the product's healthiness, are communicated through packaging claims. These claims cause the halo-effect. The halo-effect occurs from associations with the specific claim and impacts the product evaluation of the consumer (Andrews, Burton & Netemeyer, 2000; Van Trijp & van der Lans, 2007). To illustrate, consumers might evaluate all attributes of a product as healthier when a claim might name a health benefit attribute of a product (e.g. no salt, raw product). So, from the consumers' point of view, the whole product is seen as healthy.

Five different types of claims in the food marketing can be distinguished:
(1) Content claim (e.g. "Contains preservatives"), (2) Product claim (e.g. "Helps bodily function), (3) Structure-function claim ("Helps bodily function, because …"), (4) Disease-risk reduction claim ("Reduces risk, because it is raw"), and (5) Marketing claim ("Brings benefit, because …") (Van Trijp & van der Lans, 2007; Diplock et al., 1999). As suggested by Chandon (2013), the information provided by marketers includes brand names, brand imagery (e.g. symbols and slogans), nutrition information, and benefit claims and endorsements (e.g. healthy choice). All in all, texts on packages are not only functional, they are also essential from the marketers' view. A food label helps the consumers to make a comparable food choice and it helps to sell the product. In Peters-Texeira's (2005) study, Respondents were asked whether they read the food labels and 48.8% responded with 'never' and 12.2% responded with 'sometimes'. The main reasons why the respondents do not read the food labels are that it takes too much time (36.6%) and the texts are too confusing, difficult to read and difficult to understand. Only 14.6% of the participants indicated that they check the nutrition claims on the product packages. Most participants spent only 30 seconds on reading the food label, which is not a lot of time. As reported by the American Dietetic Association, over the years fewer consumers pay very close attention to the nutrition and health claims on product packages (Sloan, 1998). However, most participants (41.5%) indicated that their food choice was influenced mostly by food labels on packages (Peters-Texeira, 2005).

Additionally, Verbeke (2005) mentions that consumers make well-informed food choices which are facilitated by nutrition and health claims on packages. Hence, nutrition and food labels have a positive effect on the purchase intention and product evaluation. Carnage, Conklin, and Lambert (2008) mentioned that consumers had higher intentions to repurchase when nutrition information was displayed, hereby the effect was that a healthier food choice was made. Health related texts are effective for the consumer's purchase intention. However, as well Verbeke (2005) as Peters-Texeira (2005) mentioned that too much text might work to the contrary as consumers think it is time consuming and too difficult to understand. Previous researches indicated that claims on packages have a positive influence on consumer responses. As noticed previously, a minority of the consumers read the claims on packages and too much text might work contrary.

The following hypotheses are formulated concerning the type of text (H2):

- H2a- If a medium text quantity is used on the package, then the effect on the perceived healthiness will be higher than if a low text quantity is used.
- H2b: If a medium text quantity is used on the package, then the effect on the perceived naturalness will be higher than if a low text quantity is used.
- H2c: If a medium text quantity is used on the package, then the effect on the taste evaluation will be higher than if a low text quantity is used.
- H2d: If a medium text quantity is used on the package, then the effect on the purchase intention will be lower than if a low text quantity is used.

2.4. Healthy and unhealthy food

Products with a positive influence on humans' health can be placed in the healthy product category. For example, an apple that contains vitamins or salmon fish that contains omega-3. In contrast, products with a negative influence on humans' health can be placed in the unhealthy product category. For instance, chocolate and potato crisps which do not contain vitamins and minerals. Besides, it might influence the health negatively, such as increasing the cholesterol.

Fenko, Kersten, and Bialkova (2016) used products from these two different product categories in their study, which were apple juice and chocolate cookies. In this study, the effects of consumer scepticism towards hedonic and healthy food labels on purchase intention and product evaluation were measured. Chocolate cookies were categorized as unhealthy food and apple juice was categorized as healthy food. The conclusion was that more research is needed into the effects of health and hedonic claims on products. Nowadays the issue about 'good' and 'bad' foods is in a more refined way and the previous era of difficulty about 'good' and 'bad' food has passed away. Consumers who regularly eat food that are rich in sugars, fats, and salt, would have difficulties to meet healthy eating guidelines (Lobstein & Davies, 2008). Hence, a lot of sugars, fats, and salt in food could be categorized as unhealthy.

As mentioned before, health claims cause a halo-effect on food (Andrews, Burton & Netemeyer, 2000; Van Trijp & van der Lans, 2007). Consumers might evaluate all attributes of a product as healthier when a claim might name a health benefit attribute of a product. This means that a healthy food product might be evaluated healthier than it actually is. The same might occur for unhealthy food, but as the consumers know that the product is actually unhealthy, the halo-effect might be stronger for the healthy food category when there is a health claim on the package. In addition, interaction between texts on packages and (healthy/unhealthy) food categories might affect the perception of healthiness, perception of naturalness, taste evaluation, and purchase intention. As mentioned earlier, claims might strengthen the consumer's belief about how healthy or natural a product is. The same effect might occur on their belief about the tastiness or their purchase intention. All in all, a combination of healthy and unhealthy food with texts on packages might show an interaction effect.

Referring back to healthy and unhealthy food, consumers that are used to eat food with unhealthy ingredients, like salts, sugar, and fats, might dislike the taste of a healthy food product when they miss these ingredients. Besides, this might cause a lower purchase intention than before. As mentioned by Glanz, Basil, Maibach, Goldberg, and Snyder (1998) respondents reported that taste is the most important influence on their food choices.

Expectations concerning healthy and unhealthy product types are formulated in H3:

- H3a: The effect of the healthy food category on the perceived healthiness will be higher compared to the unhealthy food category.
- H3b: The effect of the healthy food category on the perceived naturalness will be higher compared to the unhealthy food category.
- H3c: The effect of the healthy food category on the taste evaluation will be higher compared to the unhealthy food category.
- H3d: The effect of the healthy food category on the purchase intention will be higher compared to the unhealthy food category.

2.5. Consumer's general health interest (moderator)

In general consumers are segmented on the basis of their food orientation, such as social environmental, hedonistic, and personal supported orientations. Identifying different attitudes which have an effect on the food orientation is essential for the product marketing and the nutrition education. The most important attitude factors in relation with fruits and vegetables are taste and satisfaction (Brug, Debbie, Assema, & Weijts, 1995). An attitude that is important for this study is the general health interest of the consumer. Some studies claim that taste is the only attitude criterion that consumers use when they are deciding to purchase a particular food product (Holm & Kildevang, 1996). According to Wardle (1993), health related attitudes are important for the liking and the consumption of food.

Roininen, Lähteenmäki, and Tuorila (1999), have found in their research that males are less interested in taste and health aspects of food products than females. Besides, these researchers have found that the general health interest of the consumers are correlated moderately with "natural product interest" and "light product interest". The "natural product interest" indicates the extent to which the consumer is interested in the naturalness of the food product, such as avoiding additives and eating organically. The "light product interest" indicates the extent to which the consumer believes that a light product is important when eating food. To illustrate, the consumer might believe that eating light products keeps the body in good shape and that it keeps the cholesterol level under control. Furthermore, the "general health interest" was rated higher by the older respondents, females, and respondents who had completed 12 years of school, than the younger respondents, males, and respondents who had not finished 12 years of school.

All in all, expectations concerning the moderation are formulated in H4:

- H4a: A high health interest will moderate the relationship between the healthy food category and the perception of healthiness more effectively than the unhealthy food category.
- H4b: A high health interest will moderate the relationship between the healthy food category and the perception of naturalness more effectively than the unhealthy food category.
- H4c: A high health interest will moderate the relationship between the healthy food category and the taste evaluation more effectively than the unhealthy food category.
- H4d: A high health interest will moderate the relationship between the healthy food category and the purchase intention more effectively than the unhealthy food category.

2.6. Interaction effects

Next to main effects, that are mentioned in H1 (a-d), H2 (a-d), and H3 (a-d), interaction effects between the three independent variables might occur in this research. The possible interaction effects will indicate how two independent variables work together to impact the dependent variables perception of healthiness, perception of naturalness, taste evaluation, and purchase intention.
As mentioned previously in the theoretical framework, possible interaction effects on the dependent variables are:

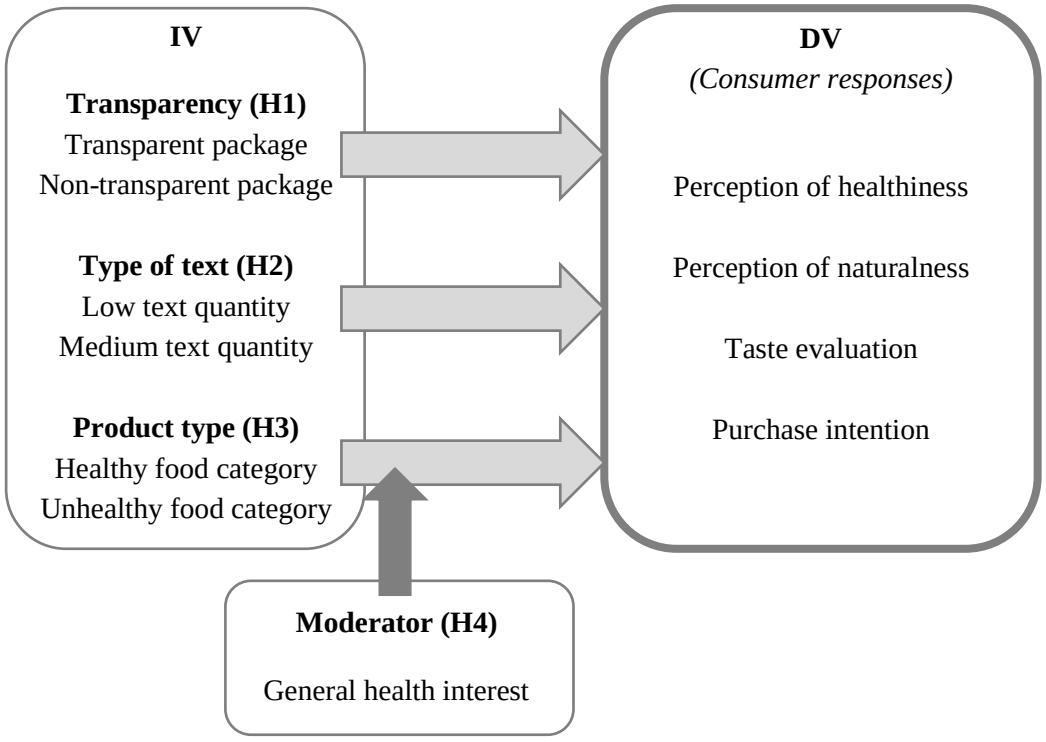
- The interaction effect of transparency and type of text on at least one of the dependent variables.
- The interaction effect of transparency and product type on at least one of the dependent variables.
- The interaction of type of text and product type on at least one of the dependent variables.

The interaction effect of this study is set in an open question "To what extent are the interaction effects between the independent variables affecting the dependent variables?". This question will be clarified after that the results have been processed.

2.7. Research model

Based on the theoretical framework and the constructed hypotheses, a research design is created in Figure 1. As seen in Figure 1, three factors form the independent variables. The first factor is based on the package transparency, the second factor is based on type of text on the package and the third factor is the product type.

Figure 1. Research design



The independent variables (transparency, type of text, and product type) are manipulated to find out whether they influence the dependent variables (perception of healthiness, perception of naturalness, taste evaluation, and purchase intention). Furthermore, the general health interest possibly moderates the relationship between the product type and a dependent variable.

3 METHOD

A pre-study was conducted before the main study to find out which type of food had to be used in the packages of the main study. Another pre-test was conducted to find out what the participants perceive as a low text quantity and a medium text quantity. Thereafter, based on the literature about package transparency and the type of text, the stimulus materials for the main study were developed.
In the first section of this chapter, the design and procedure are described. The second section discusses the pre-study and the manipulation checks. Furthermore, the instruments and constructs of this study are described and discussed. Finally, the participants of this study are discussed and a factor analysis is conducted.

3.1. Design & procedure

This section will discuss the study design and the procedure of this study.

3.1.1. Study design

A 2 (transparent vs. non-transparent package) by 2 (low text quantity vs. medium text quantity) by 2 (healthy food category vs. unhealthy food category) experimental design was emerged from the findings

from the theoretical framework. Two types of transparency, two types of text, and two product types were presented in the experimental conditions. Each product type was combined with a type of transparency and type of text. This led for eight different experimental conditions, which is shown in Table 1.

Table 1. Experimental conditions

Transparency	**Type of text**	**Product type**	
		Healthy food category	Unhealthy food category
Transparent package	Low text quantity	Transparent package x low text quantity x healthy food	Transparent package x low text quantity x unhealthy food
	Medium text quantity	Transparent package x medium text quantity x healthy food	Transparent package x medium text quantity x unhealthy food
Non-transparent package	Low text quantity	Non-transparent package x low text quantity x healthy food	Non-transparent package x low text quantity x unhealthy food
	Medium text quantity	Non-transparent package x medium text quantity x healthy food	Non-transparent package x medium text quantity x unhealthy food

3.1.2. Procedure

This study was performed in one of the busiest buildings at the University of Twente. The researcher was standing in the entrance hall beside a table with the questionnaires, the product picture and the food that the participants had to taste. Students who passed by where asked randomly whether they would like to participate in a study for about 5 to 10 minutes. The exact content of the study was not told to the students and most of the students agreed to participate. The researcher tried to pick randomly male and female in equal numbers, so the distribution between the conditions would be as equal as possible. After the agreement of the student to participate, the researcher handed them the questionnaire and the participants were instructed to taste the product and look at the product package carefully. Besides, the researcher mentioned to give their own opinion and that none opinion is wrong.

The participants filled in the questionnaire on the table while analysing the product package and tasting the product. At the end, health related (GHI) and demographic questions were asked. After the participants finished the questionnaire the questionnaire was given back to the researcher. The researcher thanked every participant for their participation in this study. Besides, some friends, family, and neighbours were also asked to participate in this study. The researcher performed exactly the same procedure for these participants as for the participants at the University of Twente.

3.2. Pre-study of the stimulus materials

This section will discuss the pre-study that is conducted before the main study. The pre-study confirmed which product type is perceived as healthy and unhealthy and which products should be used in the main study. Besides, the pre-study confirmed which type of text is perceived as a low text quantity and a medium text quantity from the participants' point of view.

3.2.1. Product type

Before establishing the main study, a pre-study was conducted in order to identify which food product is seen as healthy and unhealthy from the point of view from the consumer. Four different food products in the same category were used, namely the category "snack". Hence, the food products provide all the same need and most consumers are familiar with them.

The chocolate balls and potato crisps are included in the pre-test to find out whether the respondents genuinely believe that these are unhealthy food. The peanuts and the nuts-mix are included to find out whether they belong to the healthy food category. In total, four food products, distinguished in a healthy and unhealthy food category, were evaluated by the respondents. In total 47 respondents filled in the online questionnaire. A short introduction informed the participants that the questionnaire will be about a product that will enter the market soon, so any judgement or bias could be prevented. Thereafter one of the four pictures were shown to the participant. All pictures were in the same style, so again biases could be prevented during the pre-test. After analysing the picture, five questions based on the visual information were answered on a 7-point Likert scale. For the complete questionnaire please see Appendix 1.

The reliability test of the pre-test items indicated that the measurements are consistent with each other. Since the Cronbach's Alpha score of the five items is .77, it does mean that there is a good consistency between those items.

Additionally, results indicated that there is a statistical evidence [F (162) = 18.12, $p < .001$] that the means of the manipulation check significantly differ between the conditions of healthy food (peanuts)

(*M* = 5.11, *SD* = 1.48) and unhealthy food (potato crisps) (*M* = 3.87, *SD* = 1.96). This means that the participants in the healthy food condition rated the item "when I eat this product, I do not worry about my health" higher than the participants in the unhealthy food condition. Furthermore, the mean score of the item "this product has a positive impact on my healthy" is statistically higher [*F* (163) = 0.69, *p* < .001] on the healthy food (peanuts) (*M* = 4.3, *SD* = 1.43) compared to the unhealthy food (potato crisps) (*M* = 2.85, *SD* = 1.46). The same applies for the item "this product contains vitamins and/or minerals" [*F* (162) = 1.96, *p* < .001] for the peanuts (*M* = 4.67, *SD* = 1.39) compared to the potato crisps (*M* =3.25, *SD* = 1.51). Finally, the item "this product may rise my cholesterol" scored statistically higher [*F* (162) = 0.01, *p* < .001] on the potato crisps (*M* = 5.00, *SD* = 1.45) compared to the peanuts (*M* = 4.03, *SD* = 1.40). Based on the results there is concluded that the manipulations in this research were successful.
On the whole, the dependent variable "perception of healthiness" of the product type (healthy food category/unhealthy food category) has a significant difference of *F* (161) = 4.702, *p* < .001, with the healthy food category rated as healthier than the unhealthy food category.

Referring to the results of the pre-test, the respondents believed that, both the potato crisps and chocolate balls, are belonging to the unhealthy food category. The peanuts and nuts-mix are rated as more healthy food products. After analysing all results, one healthy food product and one unhealthy food product were chosen to continue with in the main study. Potato crisps are chosen as the unhealthy food and the peanuts are chosen as the healthy food. The main reason to use these two products is that they belong more to the same type of food than chocolate balls and nuts-mix do. Peanuts and potato crisps belong to the same need when consuming as well to the salty snack category. The pre-test scores can be viewed in Appendix 2.

3.2.2. Type of text

A pre-study was conducted in order to identify whether the participants believe that the product package with a low text quantity is indeed a low quantity and that the product package with medium text quantity is indeed a medium quantity. The design criteria for the type of text on the packages are derived from the theoretical framework and the fact that there is not that much space on the package influenced the text quantities on the package. Most consumers do not spend much time on reading texts on food packages and the number of consumers who pay close attention to health claims decreases (Sloan, 1998). Hence, for the product packages with a low text quantity, the criterium was to publish only the most essential parts. The criterium for the medium text quantity was that the package should contain considerably more text than the package with a little text. Due to the space on the package, a limited amount of words was added on the package with medium text quantity. During this pre-study, two different product packages were shown to the participants, which were the packages of the potato crisps: non-transparent with a low text quantity and non-transparent with a medium text quantity. Both packages were exactly the same, except the difference in the amount of text. Both conditions were evaluated by 10 respondents. After analysing the type of text, one question on a 10-point scale) was answered. Finally, three other demographical questions were answered about their gender, age, and educational level. For the complete questionnaire please see Appendix 3.

A manipulation check is conducted for the type of text. There was one sample, two groups, and one observation per person, so an independent sample t-test was performed to compare the means of the conditions. The results showed that there is a statistical evidence [*F* (18) = 4,02, *p* < 0.001] that the means of the manipulation check significantly differ between the conditions of a low text quantity (*M* = 1.8, *SD* = 1.03) and a medium text quantity (*M* = 5.3, *SD* = 2.06). This means that the participants in the

medium text quantity condition rated the amount of text on the product package indeed higher than the participants in the low text quantity condition. Besides, the mean scores indicated that the product package from which we assumed that it is a package with a medium text quantity is according to the respondents indeed a package with a medium text quantity compared to the package with a low text quantity.

3.3. Instruments

In this section, the materials that were used in the main study are described. Besides, the used instruments and the manipulations of the independent variables during the main study are described.

3.3.1. Stimulus material

8 different product packages were created, among which 4 packages for the healthy food category (peanuts) and 4 packages for the unhealthy food category (potato crisps) (see Pictures 1-8). Both product types had packages with transparency and non-transparency in combination with a low text quantity or a medium text quantity. The texts on the packages consisted of brand name, ingredients, and health claims, such as "best healthy choice" and "no salt added". These texts were related to the health and naturalness of the product.

During the pre-study, two different products were chosen to continue with in the main study. Goal was to indicate the difference between product types, which are in this case the healthy and unhealthy food products. As mentioned previously, in the pre-study participants chose potato crisps as an unhealthy product and peanuts as a healthy product. Both are well-known food products by consumers. Two types of text (low text quantity/medium text quantity) were used in the main study. The actual amount of the texts was previously confirmed in the pre-study. As a result, the low text quantity consisted of 8 words on the package and the medium text quantity consisted of 28 words on the package. Essential for this study was to create packages that only had differences in transparency and amount of text on the package. Furthermore, the brand name was made up, so there would not be any connection with an already existing brand. The brand name "Bol's" does not exist in the food industry. Additionally, the colour on the packages were as natural as possible, so the colour would not form a manipulation towards the participants.

3.3.2. Measures

This section describes the used instrument material and the reliability of the constructs. The Cronbach's Alpha tested whether there is consistency in a set of measurements. After recoding all negatively formulated items, the reliabilities were tested. Scores above 0.6 mean that the internal consistency is acceptable. The participants responded all of the items with a 7-point Likert Scale, which ranges from 'strongly disagree' to 'strongly agree'. The complete questionnaire of the main study can be found in Appendix 4. Lastly, the factor analysis will be described.

Instrument material

The used instrument material in this research was a questionnaire. In this questionnaire, the product evaluation and purchase intention of the participants were measured. The product evaluation part consisted of participants' perception about the product's health, naturalness and taste. First, the participants answered whether they ever eat peanuts or potato crisps. Second, the participants answered the product related questions. After the product related questions, the questions about the participants' general health interest and demographic followed. In total, the questionnaire took about 10 minutes per participant.

Perception of healthiness (POH)

The items of the measurement perception of healthiness are from the article of Rozin et al. (2004). The perception of healthiness indicates the extent to which the participant believes that the product is healthy. The scale for this measurement is a 7-point Likert scale. The difficult word "cholesterol" was explained to the participant in the questionnaire. The following four items measures whether the participant believes that the product is healthy.

1. When I eat this product, I do not worry about my health
2. This product has a positive impact on my health.
3. This product may rise my cholesterol. (R)
4. This product contains vitamins and/or minerals.

The reliability of this set measurement is Cronbach's $\alpha = .67$, which according to Moss et al. (1998) means that the reliability of these items is acceptable as it is above the score of 0.6.

Perception of naturalness (PON)

The measurement perception of naturalness indicates the extent to which the participant believes the product is processed as little as possible. In other words, whether the product is almost or even exactly the same as its' natural place. The items of this measurement are from the article of Rozin et al. (2004). The perception of naturalness scale is on a 7-point scale. In this set of measurement some difficult words were explained to the participant in the questionnaire. For example, the participant might not know what preservatives and "its natural place" mean. The following four items indicate whether the participant believes that the product is as natural as possible.

1. This product is not processed too much.
2. This product does not contain preservatives.
3. This product is a raw food.
4. This product is the same item as in its natural place.

The reliability for this set of measurement is Cronbach's $\alpha = .74$, which means that the reliability of these items is good.

Taste evaluation (TE)

The taste evaluation measures whether the participant believes that the product has a good taste, whether the flavour is great, the taste is pleasant, and the product's aroma is great. The items of the original set of measurement was look alike, for example the items: "This product has a good aroma" and "This product has a great aroma". To prevent that participants would skip questions that looked the same for them, some of those items were deleted in the main questionnaire. Additionally, the word "aroma" was explained to the participant in the questionnaire, as some participants might not know what the word means. The taste evaluation measurement is originally from the study of Allen, Gupta, and Monnier (2008), whereby the items are rated on a 7-point Likert scale ("Strongly disagree" to "Strongly agree) with a Cronbach's $\alpha = .96$. The following four items are used in this study for the taste evaluation.

1. This product has a good taste.
2. The taste of this product is not pleasant (R).
3. This product has a great aroma.
4. The flavour of this product is not that great (R).

Firstly, the negatively formulated items were recoded (R). The score for the taste evaluation measurement is Cronbach's α = .80, which means that the reliability of this set of measurement is very good.

Purchase intention (PI)

Questions about the purchase intention explains whether participants are willing to purchase the product. This was measured with a scale that was constructed by the researchers Spears and Singh (2004).
The participants answered four questions about the product to which they were exposed. The purchase intention is measured on a 7-point Likert scale, whereby there are positive and negative formulated items. The negatively formulated items were recoded before running the reliability test. The purchase intention scale originally has five items with a high internal reliability of Cronbach's α = .97 (Spears & Singh, 2004). Many questions looked very similar to each other which might bore the participants, so one item was deleted to prevent participants from skipping questions. The items used in this study's questionnaire were:

1. I would never buy this product (R).
2. I definitely intend to buy this product.
3. I will definitely not buy it (R).
4. I will probably buy it.

As there is one item deleted in this study, the new score for this measurement is Cronbach's α = .89, which means that the reliability of these items is very good.

General health interest (GHI)

The interest of the participant towards general health is measured with the General Health Interest scale. This scale is part of the Health and Taste Attitudes questionnaire (Roininen, Lähteenmäki & Tuorila, 1999). The general health interest scale was added at the end of the questionnaire. The scale consists of eight items, whereby four are positively phrased and the other four negatively. The negatively phrased items were recoded (R) before the reliability test. Participants filled in the general health interest questions by using a 7-point Likert Scale, which ranges from 'strongly disagree' to 'strongly agree'. The general health interest scale has a Cronbach's α = .89 (Roininen, Lähteenmäki & Tuorila, 1999). The following eight items were used in the main study:

1. I eat what I like and I do not worry about the healthiness of food. (R)
2. I am very particular about the healthiness of food.
3. The healthiness of food has a little impact on my food choices. (R)
4. I always follow a healthy and balanced diet.
5. It is important for me that my diet is low in fat.
6. The healthiness of snacks makes no difference for me. (R)
7. I do not avoid any foods, even if they may rise my cholesterol. (R)
8. It is important for me that my daily diet contains a lot of vitamins and minerals.

In this study score of this set of measurement is Cronbach's α = .81. Again, the reliability is tested after recoding the set of negatively formulated items. A score of Cronbach's α = .81 means that the reliability is very good.

Demographic questions

To indicate some background information, the participants had to fill in demographic questions after the questions about the dependent variables (taste evaluation, health and naturalness evaluation, purchase intention, and general health interest).

The four questions that were asked in the screening part are:

1. What is your gender?
2. What is your age?
3. What is the highest level of education you have completed?
4. What is your current living situation?

Actually, no participants were excluded from the research, except those who filled in "no" for the question "Do you ever eat peanuts/potato crisps". Because of this, 5 participants did not continue with the questionnaire.

Picture 1. Peanuts transparent/ low text quantity

Picture 2. Peanuts transparent/ medium text quantity

Picture 3. Peanuts non-transparent/ low text quantity

Picture 4. Peanuts non-transparent/ medium text quantity

Picture 5. Potato crisps transparent/ low text quantity

Picture 61. Potato crisps transparent/medium text quantity

Picture 7. Potato crisps non-transparent/ low text quantity

Picture 8. Potato crisps non-transparent/ medium text quantity

3.3.3. Instrument validity

A factor analysis was performed to group similar variables into dimensions. The purpose was to reduce individual items into less number of dimensions. This analysis was used to simplify the data. In the correlation matrix of the data a value of 1.021E-5 (which is 0. 00001021) which is above the value of 0.00001. Therefore, all questions correlated well.

Another important part of the factor analysis, is the Kaiser-Meyer-Olkin (KMO) measure and Barlett's test. In this test, a value close to 1 indicates that patterns of correlations are compact and the factor analysis should yield reliable factors. For the data of this study, the value of the KMO measure of sampling adequacy is 0.79. A value between 0.7 and 0.8 is good, which makes it for this data that the factor analysis is appropriate. Besides, the Barlett's test indicated that the data are highly significant ($p < 0.001$), which means that factor analysis is appropriate.

Before extraction, 24 linear components within the data set were identified. Factor 1 explained 18.18% of variance, factor 2 explained 12.63% of variance, and so on. As seen in the Table 2 on the next page, the first few factors explain large number of variances. Furthermore, Table 2 indicated that 5 components explain 60.84% of the variance. This is a reasonable value, which indicated that there was sufficiently common variance in the data. In other words, the correlations between variables were high enough.

Table 2. Factor analysis

	Factor loadings				
	1	2	3	4	5
(TE) This product has a good taste	0.80				
(TE) This product has a great aroma	0.61				
(TE) The taste of this product is not pleasant [R]	0.78				
(TE) The flavour of this product is not that great [R]	0.79				
(PI) I definitely intent to buy this product	0.65				
(PI) I will probably buy it	0.68				
(PI) I would never buy this product [R]	0.78				
(PI) I will definitely not buy it [R]	0.72				
(PON) This product is not processed too much		0.73			
(PON) This product does not contain preservatives		0.76			
(PON) This product is a raw food		0.66			
(PON) This product is the same item as in its natural place		0.71			
(POH) When I eat this product, I do not worry about my health		0.61			
(POH) This product has a positive impact on my health		0.66			
(GHI) I eat what I like and I do not worry about the healthiness of food [R]			0.76		
(GHI) The healthiness of food has a little impact on my food choices [R]			0.50		
(GHI) The healthiness of snacks makes no difference for me [R]			0.86		
(GHI) I do not avoid any foods, even if they may rise my cholesterol [R]			0.78		
(GHI) I always follow a healthy and balanced diet				0.73	
(GHI) It is important for me that my diet is low fat				0.69	
(GHI) I am very particular about the healthiness of food				0.56	
(GHI) It is important for me that my daily diet contains a lot of vitamins and minerals				0.60	
(POH) This product contains vitamins and minerals					0.57
(POH) This product may rise my cholesterol [R]					0.55
Eigenvalue	5.14	3.82	2.75	1.48	1.41
Explained variance	18.18	12.63	11.94	9.59	8.47
Total variance					60.84

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

[a]. Rotation converged in 9 iterations.

Table 2 displays among others the rotated component matrix. The rotated factor matrix was calculated after rotation. The construct was identified by looking at the content of questions that loaded the same factor.

The factor analysis indicated that the questions loading on **factor 1** seemed to relate to the purchase intention of the participant and at the same time it related to the taste evaluation. The questions that belonged to **factor 2** seemed to relate to the perception of healthiness and the perception of naturalness. Furthermore, **factor 3** related to the participants' general health interest. Besides, **factor 4** seemed to relate to the participants' general health interest too. It is remarkable that the items of factor 3 were more about the impact of the healthiness of food on the participant and factor 4 contained more items about the participants' diet. Finally, **factor 5** contains only 2 items ("this product may rise my cholesterol" and "this product contains vitamins and minerals"), both items related to the perception of healthiness.

As a result, the validity of the constructs was not as expected, since the factor analysis indicated different constructs than the constructs from the main study. This might be explained by the fact that the used constructs were not used previously in the same relationship as in this study, since the used constructs were all from different researchers. However, it was chosen to continue with the predetermined constructs in this study. One reason to continue with the predetermined constructs was that constructs of the main study came forth from several reliable literatures. Another reason is that the reliability of the constructs from the main research were reliable (see previous section). In other words, the internal consistency of the predetermined constructs was acceptable.

3.4. Participants main study

The participants had to be able to be consumers in a supermarket with a preferred age above the 16, so that the participants would be familiar with doing grocery shopping. Preferred was also a properly distributed gender between the conditions. In total, 174 people were asked to participate in the main study. All of them agreed to participate voluntarily and to observe one product type (healthy food (peanuts) or unhealthy food (potato crisps)), presented in one of the eight conditions. For instance, one participant evaluated only condition 1, another participant evaluated only condition 2, and so on (Table 1). See the previous section "stimulus material" for the corresponding product packages (Pictures 1-8).

Table 3. Distribution of sample characteristics

	Condition	Peanuts Transparent Low text quantity	Peanuts Transparent Medium text quantity	Peanuts Non-transparent Low text quantity	Peanuts Non-transparent Medium text quantity	Potato crisps Transparent Low text quantity	Potato crisps Transparent Medium text quantity	Potato crisps Non-transparent Low text quantity	Potato crisps Non-transparent Medium text quantity	Total
Age	(M in years)	29	29.80	23.12	29	24.40	25.02	26.76	22.13	26.15 (mean)
Gender	Male (%)	12 (54.4%)	11 (47.8%)	8 (47.1%)	9 (50%)	11 (52.4%)	11 (47.8%)	11 (52.4%)	9 (47.4%)	82
	Female (%)	10 (45.5%)	12 (52.2%)	9 (52.9%)	9 (50%)	10 (47.6%)	12 (52.2%)	10 (47.6%)	10 (52.6%)	82
Education	None	0	2	0	1	0	0	0	4	7
	High school	3	8	11	7	12	8	9	9	67
	MBO	4	4	1	0	2	1	2	0	14
	HBO/Bachelor	6	4	4	3	4	12	8	3	44
	Master	2	4	1	4	2	1	1	2	17
	Doctorate	4	1	0	3	1	1	1	1	12

As seen in the Table 3, the total sample consisted of 82 males and 82 females. The mean of the ages of the respondents ranges from 22 to almost 30, with a total mean score of 26 years old. Furthermore, since the questionnaire was filled in mostly at the University of Twente, the majority of the respondents' highest education is high school (N = 67) and a bachelor's degree (N = 44). There was an equal distribution between the conditions. 22 participants evaluated the first condition "peanuts: transparent with a low text quantity", 23 participants evaluated the condition "peanuts: transparent with a medium text quantity", 17 participants evaluated the "peanuts: non-transparent with a low text quantity" condition, 18 respondents evaluated the "peanuts: non-transparent with a medium text quantity" condition. The conditions with the potato crisps are respectively filled in by 21, 23, 21, and 19 respondents. 5 of the 174 participants mentioned that they never eat potato crisps or peanuts. Those 5 participants were deleted from the data, since their questionnaire was not completely filled out. Besides, another 5 participants were deleted, because their questionnaire was not filled out completely. After cleaning the data, the sample consisted of 164 participants.

3.5. Data analysis

MANOVA is used to determine whether there are any significant differences between independent groups on more than one dependent variable. The independent variables were transparency, type of text, and product type. The dependent variables were perception of healthiness, perception of naturalness, taste evaluation, and purchase intention. In this study, the product type was used as a between-subject factor. Furthermore, at the between-subjects level, each variable is analysed separately with an evaluation at an alpha level of .05.

4 RESULTS

In this section, first the descriptives of the dependent variables are presented. Second, the main effects and interaction effects are discussed and thereafter, the moderation effects.

4.1. Descriptives

This section displays the results from the descriptive statistics of the dependent variables to give an indication of the effects. Table 4 shows the results of the independent variables on the dependent variables perception of healthiness, perception of naturalness, taste evaluation and purchase intention. First, the variable transparency (transparent package vs. non-transparent package) is displayed, followed by the variable type of text (low text quantity/medium text quantity). Thereafter, the general health interest (low general healthy interest vs/ high general health interest) is presented. As it can be seen in Table 4, certain stimulus reached higher scores than other stimulus on the dependent variables.

Table 4. Descriptives

	Healthy food category (Peanuts)		Unhealthy food category (Potato crisps)	
	Mean	SD	Mean	SD
Transparent package				
Perception of healthiness a)	4.39	0.89	2.83	1.00
Perception of naturalness a)	4.72	1.26	3.65	1.36
Taste evaluation a)	4.06	1.37	3.55	1.33
Purchase intention a)	4.13	1.53	3.09	1.50
Non-transparent package				
Perception of healthiness a)	4.09	0.74	3.16	1.17
Perception of naturalness a)	4.32	1.18	3.84	0.93
Taste evaluation a)	4.15	1.25	3.62	1.06
Purchase intention a)	4.06	1.23	3.47	1.15
Low text quantity				
Perception of healthiness a)	4.33	0.83	2.77	1.15
Perception of naturalness a)	4.68	1.23	3.65	1.20
Taste evaluation a)	4.28	1.27	3.23	1.05
Purchase intention a)	4.24	1.46	2.98	1.23
Medium text quantity				
Perception of healthiness a)	4.21	0.85	3.20	1.00
Perception of naturalness a)	4.42	1.24	3.83	1.15
Taste evaluation a)	3.93	1.34	3.94	1.25
Purchase intention a)	3.96	1.33	3.55	1.41
Low general health interest (moderator)				
Perception of healthiness a)	4.24	0.79	3.30	0.95
Perception of naturalness a)	4.50	1.16	3.91	1.10
Taste evaluation a)	4.21	1.28	3.53	1.21
Purchase intention a)	3.92	1.46	3.36	1.44
High general health interest (moderator)				
Perception of healthiness a)	4.14	0.81	2.03	0.73
Perception of naturalness a)	4.13	1.40	3.19	1.33
Taste evaluation a)	3.57	1.51	3.36	1.33
Purchase intention a)	4.13	1.30	3.28	0.93

a) 7-point Likert scale (1=strongly disagree / 7=strongly agree)

4.2. Effects

In this section the multivariate effects are discussed and after the between-subjects effects (MANOVA). Thereafter, the main effects and interaction effects are described.

4.2.1 MANOVA

The Box's test of equality indicated a significance level of $p = .021$. This means that there is evidence that the variance covariance matrices are equal across the groups.

Wilk's Lambda is used in MANOVA to test whether there are differences between the means of groups of subjects on a combination of dependent variables. The alpha level here is the alpha level is $p = .05$. For the product type (healthy food category/unhealthy food category) the Wilk's $\Lambda = .661$, $F(4,150) = 19.25$, $p < .001$, which means that there is a significant difference between the healthy food category and unhealthy food category. Thus, MANOVA showed significance for the product type when considered jointly on the dependent variables (perception of healthiness, perception of naturalness, taste evaluation, and purchase intention). Furthermore, the variable transparency (transparent package/non-transparent package) had a Wilk's $\Lambda = .992$, $F(4,150) = .29$, $p = .887$. The values for the variable type of text (low text quantity/high text quantity) were Wilk's $\Lambda = .998$, $F(4,150) = .99$, $p = .780$. Since the values were greater than $p = .05$, it indicates that there is no significance for these two independent variables when considered jointly on the dependent variables.

Finally, the moderator indicated a significant difference on the dependent variables with a result of Wilk's $\Lambda = .907$, $F(4,150) = 3.845$, $p = .005$. Significant interaction effects were found in product type and text with an alpha of $p = .05$ ($p = .045$) and transparency together with the type of text showed an alpha of $p = .01$. These results indicate that there is significance when considered jointly on the dependent variables perception of healthiness, perception of naturalness, taste evaluation, and purchase intention.

4.2.2. Between-subjects effects

Four alphas showed significance ($p < .05$): the main effect of product type on perception of healthiness ($p < .001$), the main effect of product type on perception of naturalness ($p < .001$), the main effect of product type on the taste evaluation ($p = .007$), and the main effect of product type on purchase intention ($p < .001$). Besides, the following interaction effects indicated significance: the effect of product type and transparency on the perception of healthiness ($p = .03$), the effect of product type and type of text on the perception of healthiness ($p = .05$), the effect of product type and type of text on taste evaluation ($p = .02$), the effect of product type and type of text on purchase intention ($p = .03$). All results are shown in Table 6.

4.2.3. Main effects

The healthy food category scored the highest mean in comparison to the unhealthy food category. This applies for all the dependent variables, which confirmed H3a (The effect of the healthy food category on the perceived healthiness will be higher compared to the unhealthy food category), H3b (The effect of the healthy food category on the perceived naturalness will be higher compared to the unhealthy food category), H3c (The effect of the healthy food category on the taste evaluation will be higher compared to the unhealthy food category), H3d (The effect of the healthy food category on the purchase intention will be higher compared to the unhealthy food category). The mean scores of these results are shown in Table 5.

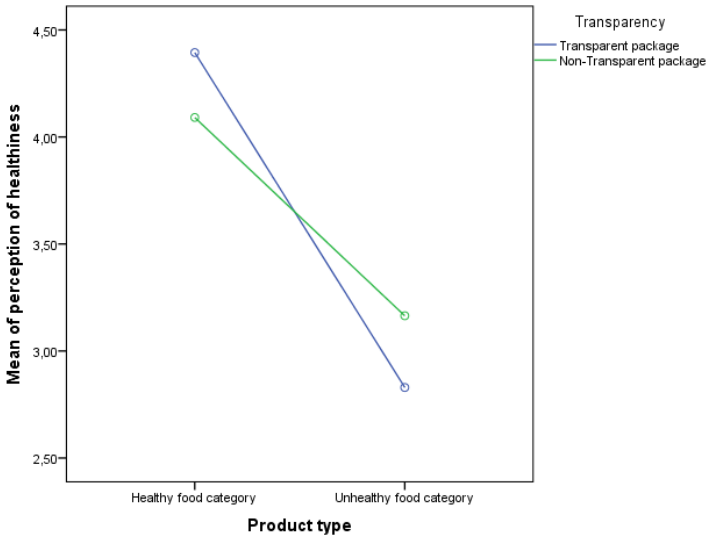
Table 5. Mean scores of the main effects

	Healthy food category		Unhealthy food category	
	Mean a)	SD	Mean a)	SD
Perception of healthiness	4.27	.83	2.99	1.09
Perception of naturalness	4.54	1.23	3.74	1.17
Taste evaluation	4.10	1.31	3.59	1.20
Purchase intention	4.10	1.40	3.27	1.35

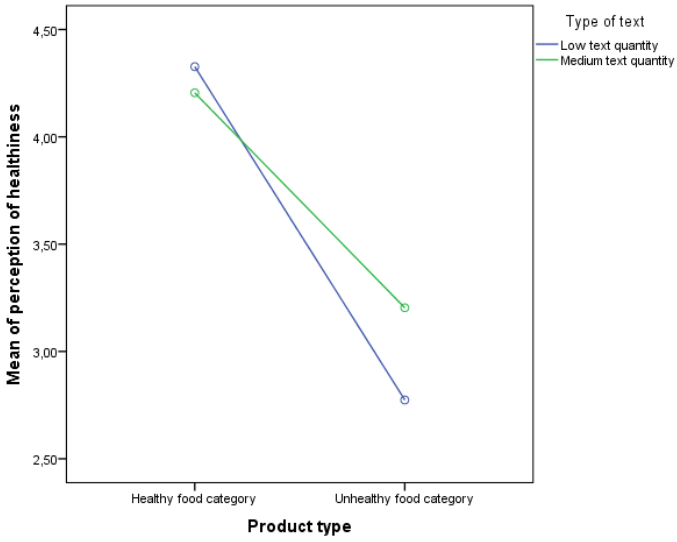
4.2.4 Interaction effects

As shown before, the effect of product type and transparency on perception of healthiness indicated significance. Hereby, the healthy food category scored the highest mean on the perception of healthiness when there was a transparent package (*M* = 4.39) compared to the non-transparent package (*M* = 4.09). Besides, for the unhealthy food category the highest mean was reached for the non-transparent package (*M* = 3.16) compared to the transparent package (*M* = 2.83) (plot 1). Furthermore, low text quantity in combination with the healthy food category scored the highest mean (*M*=4.33) on the perception of healthiness and the unhealthy food category reached the highest mean in combination with a medium text quantity (*M*= 3.20) (plot 2). Looking further in the results of the interaction effects, the highest mean was reached for the healthy food category (*M*= 4.28) in combination with low text quantity when evaluating the taste. On the other hand, the unhealthy food category indicated a higher mean (*M* = 3.94) in combination with a medium text quantity when evaluating the taste (plot 3). Finally, the healthy food category showed the highest mean when combined with a low text quantity (*M* = 4.24) when evaluating the purchase intention and the unhealthy food category indicated a higher mean when combined with a medium text quantity (*M* = 3.55) (plot 4).

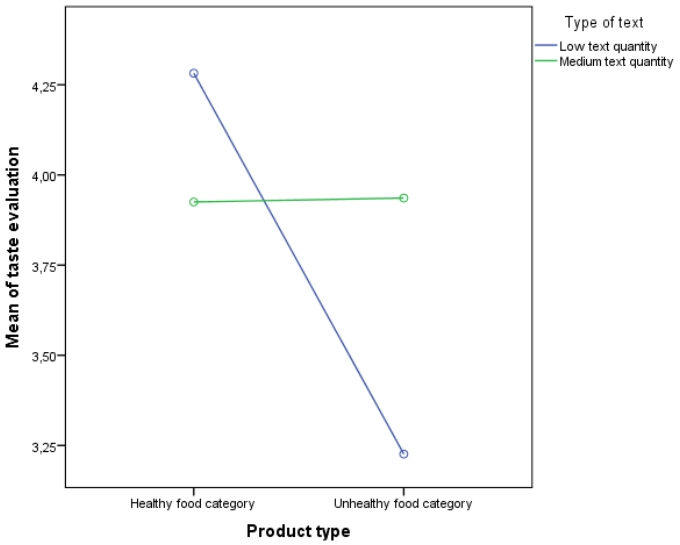
Plot 1:



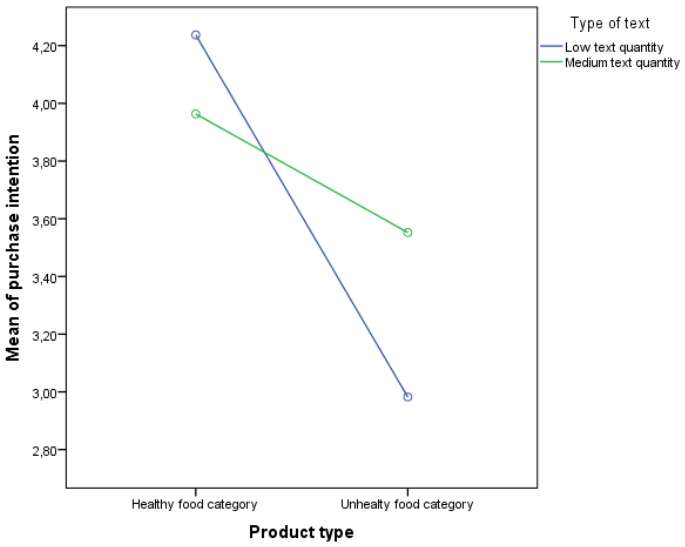
Plot 2:



Plot 3:



Plot 4:



4.3. Moderation

This section will describe the correlation between the moderator general health interest and the dependent variables. Thereafter, the moderation effects will be described.

Correlation

Before adding the variable general health interest (moderator) in the MANOVA table (Table 6), there is tested previously whether there is a correlation between the moderator and the dependent variables. A Pearson correlation was computed to assess whether a statistically significant relationship exists between those variables.

The correlation test indicated a statistically significant linear relationship for the general health interest and the dependent variable perception of healthiness ($p < .001$). All other dependent variables showed a non-significant relationship with the moderator, with a $p = .53$ for the perception of naturalness, a $p = .39$ for the taste evaluation, and a $p = .87$ for the purchase intention.

The direction of the relationship between the general health interest and perception of healthiness is negative with r = -.271 (Table 5). This correlation coefficient signifies that as the general health interest increases, the perception of healthiness decreases. A scatterplot was created to visualize the relationship between the perception of healthiness and the general health interest (see Appendix 5).

Table 5. Correlations

		1	2	3	4	5
1	Perception of healthiness	1				
2	Perception of naturalness	.470	1			
3	Taste evaluation	.229	.046	1		
4	Purchase intention	.304	.115	.593	1	
5	General health interest	-.271	-.049	-.067	.013	1

Moderation analysis

Since there is a significant relationship between the general health interest and the perception of healthiness, MANOVA was used to identify statistically significant differences among groups. Table 6 shows a more detailed result of the significant effect of general health interest and product type on the perception of healthiness. A significant moderation effect of general health interest and the product type (IV) on the perception of healthiness (DV) is shown with $p = .02$. Other dependent variables were not included into this table, since there was no correlation between the general health interest and other dependent variables. Please see Table 6 for an overview of this result.

Moderation effects

As mentioned before, a moderation effect is found for the variables product type and general health interest on the dependent variable perception of healthiness. The healthy food category scored higher when combined with a high general health interest ($M = 4.14$) compared to the unhealthy food category combined with a high general health interest ($M = 2.03$). This result confirms H4a "A high health interest will moderate the relationship between the healthy food category and the perception of healthiness more effectively than the unhealthy food category".

Table 6. MANOVA

Test of between-subjects design effects	*F-value*	*Sig.*
Product type (main effects)		
Perception of healthiness a)	72.05	0.00
Perception of naturalness a)	15.10	0.00
Taste evaluation a)	7.51	0.01
Purchase intention a)	12.68	0.00
Transparency (main effects)		
Perception of healthiness a)	0.00	1.00
Perception of naturalness a)	0.79	0.38
Taste evaluation a)	0.26	0.61
Purchase intention a)	0.29	0.59
Type of text (main effects)		
Perception of healthiness a)	0.44	0.51
Perception of naturalness a)	0.13	0.72
Taste evaluation a)	1.10	0.30
Purchase intention a)	0.18	0.67
*Product type * transparency (interaction effects)*		
Perception of healthiness a)	4.99	0.03
Perception of naturalness a)	3.36	0.07
Taste evaluation a)	0.01	0.95
Purchase intention a)	1.78	0.18
*Product type * type of text (interaction effects)*		
Perception of healthiness a)	3.91	0.05
Perception of naturalness a)	1.30	0.26
Taste evaluation a)	6.06	0.02
Purchase intention a)	4.98	0.03
*Transparency * text (interaction effects)*		
Perception of healthiness a)	1.96	0.16
Perception of naturalness a)	3.70	0.06
Taste evaluation a)	2.19	0.14
Purchase intention a)	1.17	0.28
*Product type * general health interest (moderation effects)*		
Perception of healthiness a)	6.08	0.02

a) 7-point Likert scale (1=strongly disagree / 7=strongly agree)

4.4. Overview hypotheses

Table 7 gives an overview of the rejected and supported hypotheses from this study.

Table 7. Overview hypotheses

	Hypotheses	Results
H1a	If a transparent package is used, then the effect on the perceived healthiness will be higher than if a non-transparent package is used.	Rejected
H1b	If a transparent package is used, then the effect on the perceived naturalness will be higher than if a non-transparent package is used.	Rejected
H1c	If a transparent package is used, then the effect on the taste evaluation will be higher than if a non-transparent package is used.	Rejected
H1d	If a transparent package is used, then the effect on the purchase intention will be higher than if a non-transparent package is used.	Rejected
H2a	If a medium text quantity is used on the package, then the effect on the perceived healthiness will be higher than if a low text quantity is used.	Rejected
H2b	If a medium text quantity is used on the package, then the effect on the perceived naturalness will be higher than if a low text quantity is used.	Rejected
H2c	If a medium text quantity is used on the package, then the effect on the taste evaluation will be higher than if a low text quantity is used.	Rejected
H2d	If a medium text quantity is used on the package, then the effect on the purchase intention will be lower than if a low text quantity is used.	Rejected
H3a	The effect of the healthy food category on the perceived healthiness will be higher compared to the unhealthy food category.	Supported
H3b	The effect of the healthy food category on the perceived naturalness will be higher compared to the unhealthy food category.	Supported
H3c	The effect of the healthy food category on the taste evaluation will be higher compared to the unhealthy food category.	Supported
H3d	The effect of the healthy food category on the purchase intention will be higher compared to the unhealthy food category.	Supported
H4a	A high health interest will moderate the relationship between the healthy food category and the perception of healthiness more effectively than the unhealthy food category.	Supported
H4b	A high health interest will moderate the relationship between the healthy food category and the perception of naturalness more effectively than the unhealthy food category.	Rejected
H4c	A high health interest will moderate the relationship between the healthy food category and the taste evaluation more effectively than the unhealthy food category.	Rejected
H4d	A high health interest will moderate the relationship between the healthy food category and the purchase intention more effectively than the unhealthy food category.	Rejected

5 DISCUSSION & CONCLUSIONS

First, the discussion section discusses the results while comparing with findings from the theoretical framework. Second, the limitations of this study and future research possibilities are mentioned, followed by this study's practical implications. Finally, the research question "To what extent can transparency and the different types of text influence the consumer responses with the role of general health interest in the healthy and unhealthy food sector?" is answered in the conclusion part. Conclusions about the effects of the products types on the dependent variables and conclusions about the role of transparency and the types of text on consumer responses is drawn. Besides, concluded is the extent to which a person's health interest (GHI) has a role when evaluating food products.

5.1. Discussion of the results

First, the effects of the product type on the dependent variables perception of healthiness, perception of naturalness, taste evaluation, and purchase intention were found in this research. As expected, the healthy food category scored higher on all of the dependent variables in comparison to the unhealthy food category. These effects might be substantiated by among others that the healthy food in this study is recognized as healthier than the unhealthy food, so the perception on the healthiness resulted also higher than for the unhealthy food. Furthermore, the effect of healthy food on the perception of naturalness might be explain by Rozin et al. (2004), who explained that healthiness and naturalness are associated with each other. So, a product that is known as healthy, might be more associated with naturalness than food that is known as unhealthy. One of the beliefs about naturalness is that it tastes better. Because there is the association between natural and healthy products, the higher result on taste evaluation of healthy food might be explained by the belief that the taste of natural food is believed to be more pleasant. This might in turn also affect the food intake.

The expected effects of transparency were found partially in this research. Although, main effects of transparency were not found in this study. This means that there were no significant effects of transparency on the perception of healthiness, perception of naturalness, taste evaluation, and purchase intention. A possible reason might be explained by Peters-Texeira and Badrie (2005), whose research explains that a high number of respondents indicated that their preference for transparency depends on the product type. Probably the products which were used during this study were not decisive enough for the participants to be influenced by the transparency of peanuts and potato crisps. Besides, most of the participants (Dutch consumers) were familiar with the used products in the main study. These products (peanuts/potato crisps) are consumed once in a month, week or on a daily basis, whereby the transparent package does not influence the consumers when intending to purchase the food.

Moreover, this study did not find main effects of the type of text on the perception of healthiness, perception of naturalness, taste evaluation, and purchase intention. On the other hand, interaction effects of the type of text were found in this study, which are reported later in this section. A possible reason of no main effects, might be that a lot of consumers do not read food labels since it takes them too much time (Peters-Texeira, 2005; Verbeke, 2005). As mentioned earlier, the products in this research might are well-known and might be observed as a routine product by the participants. For well-known products, such as peanuts and potato crisps, consumers might think that texts on packages are even more time consuming, since they know what to expect from the product.

Additionally, the general health interest (consumers' attitude towards health) modified the relationship between the product type (IV) and the perception of healthiness (DV). Although the general health interest did not have a significant effect on other dependent variables (perception of naturalness, taste evaluation, and purchase intention). This is in contrast with the study of Roininen, Lähteenmäki, and Tuorila (1999), who mentioned that general health interest correlates with "natural product interest" and "light product interest". This result might be explained by other kind of products that were used in this study compared to the study of these researchers. Besides, the study of Roininen, Lähteenmäki, and Tuorila (1999), indicated that the general health interest is especially higher for older people. In this study, the majority of respondents consisted of younger people. Furthermore, results showed that the effect of the product type on the perception of healthiness is weakened by the general health interest. A possible explanation might be that consumers with a high health interest have such a high interest in health that the products do not satisfy the expectations, causing a lower perception of healthiness.

Next, some interaction effects were found in this study. Both, transparency and the type of text were more effective in influencing the perception of healthiness when the product type was healthy instead of unhealthy. More texts on packages might strengthen the consumers' point of view about the healthiness of the product. The partial effect of the text quantity on packages might be supported by the halo-effect, which means that the whole product is seen as healthy due to the text on packages (Cousté, Martos-Partal & Martínez-Rios, 2012). So, when there is a healthy food product with healthy claiming texts on the package, there might be an increase in the perception of healthiness about the product.

Next to the type of text, transparency had an interaction effect in this study. Transparency in the healthy food category increased the perception of healthiness, but it did not significantly increase the effect on the perception of naturalness, taste evaluation, and purchase intention. All in all, it means that transparency did have an effect, provided that the right product type is used. As supported by Peters-Texeira and Badrie (2005), a high number of respondents indicated that their preference for transparency dependent on the product type. This might substantiate the interaction effect of transparency for this study. The finding that transparency did not had a significant effect on the perception of naturalness, taste evaluation, and purchase intention is in contrast with a finding from the literature review which explains that seeing aspects of the product, such as the colour or shape, could have an impact on the consumer. This can influence the consumers' acceptance, liking of the food, thus also the perceived attractiveness, purchase intention, and food intake (Imram, 1999; Wei, Ou, Luo, Hutchings, 2012).

The taste evaluation was mostly influenced by a low text quantity in combination with the healthy food category. Referring to the literature review, a lot of sugars, fats, and salts in food could be categorized as unhealthy, which means that healthy food contains a little too not any salts, fats, and other ingredients that influence one's health negatively (Lobstein & Davies, 2008). The reason why a little text was the most effective for healthy food on influencing the taste evaluation, might be that the consumer does not expect any special taste when eating healthy food with a little or without too much extra ingredients. Hence, a lot of text might be unnecessary since the product is (almost) the same as in its' natural place.

Finally, the purchase intention of the healthy food category was mostly influenced by a low text quantity on the package. This might be supported by the fact that a large number of consumers think that a lot of information on packages are time consuming when they are willing to purchase food (Peters-Texeira, 2005). For example, when the consumer intends to purchase something healthy, such as peanuts or grapes, they might think that peanuts are just peanuts and grapes are just grapes, whereby reading a lot

of texts on packages might work time consuming and unnecessary. Besides, as mentioned by Cousté et al. (2012), claims on packages are not always expressive sellers and a benefit to the product.

5.2. Limitations & future research

The present study has some limitations. First, regarding the product types, which is an independent variable in this study. As established from the pre-study, the product types peanuts and potato crisps were chosen as the two product types, which were measured as a between-subject factor. Two different products were used to find out whether there are differences when measuring the dependent variables. So, a healthy (peanuts) and an unhealthy food product (potato crisps) were chosen, since they might be consumed both for the same reason. Both, the peanuts and the potato crisps are well-known by the participants and both are purchasable by consumers in the supermarkets. For future research, it might be interesting to use other products in the healthy and unhealthy food category. Since the product peanuts might be evaluated as a snack, indirectly it might be associated with the unhealthy product category, even though it was measured as healthier than potato crisps in the pre-study. The findings of this study can be applied to other products in the same category, such as chocolate balls, nuts-mix, and popcorn, but also to drinks such as cola. These mentioned products belong as the peanuts and potato crisps to the snack category. For future studies it is recommended to use other kind of products to provide new insights regarding transparency and type of text on packages. It is interesting to discover the impact of transparency and type of text on daily bought products versus products which are bought only once in a while.

Second, regarding the sample. The sample has some limitations. Since it is collected at the University of Twente, most participants were between the age of 18-29 years old with a highest level of education of high school (doing their bachelor/master at this moment). Therefore, the findings cannot be generalized to all supermarket visitors, since there is a minority of older and low educated participants in this study. It might be possible to generalize the findings to the younger supermarket visitors.

Third, regarding the constructs. The factor analysis indicated other constructs than that has been used in this study. According to the factor analysis, the purchase intention and taste evaluation belonged to the same constructs. In contrast, these constructs were measured separately in the main study. Additionally, as indicated by the factor analysis, the perception of healthiness and naturalness seemed to belong to the same construct. The "general health interest" was divided into two different constructs by the factor analysis, whereby one emphasizes the participant's diet and the other emphasizes the impact of foods' healthiness on the participant. As mentioned in the methods part, the researcher chose to work further with the constructs determined during the main study, which indicated all good reliabilities. However, this still formed a limitation for this study. For future researches it is recommended to make a distinction between the items in the general health interest, whereby one construct measures the impact of food healthiness on the participant and the other measures the participants diet.

Fourth, regarding the stimuli materials. The stimuli in this study were designed especially for this research. The two types of text were pre-tested, whereby the results indicated that the participants believed that the text type with a medium text quantity included indeed more text than type with a low text quantity. Because of the limited space on the stimuli materials, a limited amount of text was put on the package. For future studies it is interesting to put more text on the package, so there is a clear distinction between a low text quantity and a high text quantity. This way, there will be a wider distinction between the text amounts, which can lead to more interesting findings. Another recommendation for future studies regarding the stimuli materials is to use other kind of claims instead of health claims. An example could be texts about the taste with different text amounts that claims how delicious the food is.

Finally, regarding the two independent variables transparency and type of text. Different amount of texts showed through different product types an influence on several dependent variables. The same applies for the variable transparency. The variables transparency and type of text did not show an interaction effect on the dependent variables. It is recommended for future studies to do more research about the influence of transparency and type of text on food products as a separate field.

5.3. Practical implications

In this section the practical implications are formulated. Since the intention of this study was not only to increase the sales, but also to make food more attractive, the practical implications are formulated for food manufacturers, product designers, marketers, and scientific researchers. Previous researches indicated the importance of visual features of product packages. This study indicated that both a low text quantity and a medium text quantity on the package has an impact to make food more attractive for the consumers. The same applies for the transparency of the package. The effects of transparency and type of text depend on the product type. For instance, it is recommended to use a low text quantity for healthy food regarding to increase the perception of healthiness, taste evaluation and consumers' purchase intention. On the other hand, a medium text quantity needs to be used to increase these consumer responses.

Furthermore, it is recommended to manufacturers, product designers, and marketers to use transparent packages for healthy food. This increases the perception of healthiness on healthy food. When it comes to unhealthy food, non-transparent packages could be used to increase the perception of healthiness. It is strictly recommended for product designers, marketers, and healthy food manufacturers to take considerations based on transparency and type of text on packages, depending on the product type.

5.4. Conclusions

The aim of this study was to investigate to what extent the role of transparency and the type of text have an influence on consumer responses towards healthy and unhealthy food. Based on the results, concluded can be that the healthy food category is in general evaluated as healthier, tastier, more natural, and with a higher purchase interest compared to the unhealthy food category.

When looking more into the details to find out the role of transparency and type of text, significant evidence was found for transparency on the perception of healthiness, dependent on the product type (healthy food/unhealthy food). Based on these findings it can be concluded that the effect of transparency on the perception of healthiness is higher when it is used for healthy food. In contrast, the perception of healthiness on unhealthy food is higher when there is a non-transparent package. Furthermore, the perception of healthiness is more influenced when there is a low text quantity on the package, combined with healthy food. The same applies for the taste evaluation and purchase intention of healthy food. In contrast, the perception of healthiness, taste evaluation, and purchase intention of unhealthy food is more influenced by a medium text quantity than by a low text quantity. After all, the perception of healthiness, taste evaluation, and purchase intention were higher for the healthy food category than for the unhealthy food category. This means that the healthy food category was perceived as healthier, tastier, and the participants had a higher purchase intention compared to the unhealthy food category, even with the right combination of transparency and type of text.

The interaction effect of this study was set in an open question "To what extent are the interaction effects between the independent variables affecting the dependent variables?" All in all, concluded can be that the interaction of the independent variables transparency and product type and the interaction effect of type of text and product type are influencing the consumer responses perception of healthiness, taste

evaluation, and purchase intention. The interaction effects strengthen the effects of the independent variables on the dependent variables. This means that the effects are stronger, when two independent variables are interacting than just the effect of one independent variable on a dependent variable.

Finally, significant evidence was found for the consumer's general health interest, in other words, their attitude towards health. The consumer's general health interest affected the perception of healthiness, related to the product type (healthy food/unhealthy food). A high health interest moderated the relationship between healthy food and the perception of healthiness more effectively than a high health interest in relation with unhealthy food. However, the effect of healthy and unhealthy food in combination with a high general health interest is lower on the perception of healthiness than when both product types are combined with a low general health interest. Concluded can be, that the general health interest weakens the effect of the product type on the perception of healthiness.

These findings indicated that the hypotheses of this study are partially supported. In order to answer the research question "To what extent can transparency and the different types of text influence the consumer responses with the role of general health interest in the healthy and unhealthy food sector?" it can be concluded that transparency and text on food packages do have an influence on consumer responses, providing that it is combined with the right product type. There need to be considered, which type of transparency and text are used for the healthy and unhealthy food category. All in all, with the right combination of a product type, type of text and transparency, the perception on healthiness, taste evaluation, and purchase intention can be increased. Besides, the general health interest has a weakening role when the product type is affecting the perception of healthiness.

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APPENDICES

Appendix 1: Pre-study questionnaire product type

All questions were answered on a 7-point Likert Scale.

Introduction

Beste deelnemer,

Ik ben student aan de Universiteit Twente en op dit moment ben ik bezig met een onderzoek voor een nieuw merk dat de markt binnenkort wil betreden. Deze vragenlijst zal ongeveer 2 minuten duren. Uw gegevens zullen op een vertrouwelijke manier en enkel voor dit onderzoek gebruikt worden. U kunt op elk gewenst moment stoppen met de vragenlijst.

Ik dank u alvast voor uw deelname. Als u vragen heeft kunt contact opnemen via deze mail: d.yanik@student.utwente.nl

Derya Yanik

Studente Communications Studies

Viewing one the four images

Bekijk de afbeelding van de notenmix/chocoladeballen/pindanoten/chips aandachtig.

Health related question about the product

1) Wanneer ik dit product eet, maak ik mij geen zorgen om mijn gezondheid.
   Zeer mee oneens – zeer mee eens

2) Dit product heeft een positieve invloed op mijn gezondheid.
   Zeer mee oneens – zeer mee eens

3) Dit product past niet in een gebalanceerd dieet. (Een gebalanceerd dieet is een dieet waarbij u uw lichaam de voeding geeft die het nodig heeft om goed te kunnen functioneren. Denk hierbij aan proteïnen, vitaminen en mineralen).
   Zeer mee oneens – zeer mee eens

4) Dit product zou mogelijk mijn cholesterol kunnen verhogen. (Cholesterol is een vettige stof. Je lichaam heeft cholesterol nodig om cellen, hormonen en gal te maken. Een te hoge cholesterol-gehalte kan leiden tot hart- en vaatziekten).
   Zeer mee oneens – zeer mee eens

5) Dit product bevat vitaminen en/of mineralen.
   Zeer mee oneens – zeer mee eens

End of survey

Appendix 2: Pre-study scores of products

	Mean	SD
Perception of the healthiness		
Chocolate balls a)	2.45	0.47
Potato crisps a)	2.96	1.14
Peanuts a)	4.42	0.73
Nuts-mix a)	4.94	0.92

a) 7-point Likert scale (1=strongly disagree / 7=strongly agree)

Appendix 3: Pre-study questionnaire text amount

Please give your opinion about the amount of health claims on this product package.

Put a cross behind your answer.

A lot of text

10

9

8

7

6

5

4

3

2

1

A little text

What is your gender?	**What is your age (in years)?**
O Male O Female	O Younger than 18 O 18-29 O 30-49 O 50-64 O Older than 65 **What is the highest level of education you have completed?** O None O High school O MBO O HBO/Bachelor O Master O Doctorate

Appendix 4: Questionnaire main study

Introduction

Dear participant,

I'm a student at the University of Twente and at this moment I'm doing a research for a new brand which is planning to enter the market soon. This questionnaire will take about 10 minutes. With your participation in this survey, we assume that you agree that the data of your answers will be processed for this investigation. We can ensure you that your data will be treated confidentially and will be used only for this research. You can quit the questionnaire at any time.

I would like to thank you in advance for your participation. If you have any questions, please feel free to ask me directly or you can mail me at a later moment via: d.yanik@student.utwente.nl.

Derya Yanik
Student Communications Studies

• Please follow directions in question sheet.
• Fill in circle completely.
• To change, cross the wrong answer.
• There is only one right answer possible.

Screening questions

Do you ever eat peanuts?

- Yes
- No (please stop this questionnaire)

Are you responsible for everyday food shopping in your house?

- Yes
- No

How often do you buy peanuts?

- Never
- Less than once a month
- Once a week
- Several times a week
- Every day

Please taste the peanuts and look at the package carefully.
Below are a number of statements. Please read each one and indicate to what extend you agree with each statement. There is only one right answer possible.

Taste evaluation

1) This product has a good taste.
2) The taste of this product is not pleasant.
3) This product has a great aroma. (Aroma is a distinctive, typically pleasant smell)
4) The flavour of this product is not that great.

Strongly agree – strongly disagree (7-point Likert Scale)

Perception of naturalness and perception of healthiness

5) This product is too much processed.
6) This product does not contain preservatives. (Preservatives= a substance used to pre-serve foodstuffs).
7) This product is a raw food.
8) This product is the same item as in its natural place. (Nothing is added to this food)
9) When I eat this product, I do not worry about my health.
10) This product has a positive impact on my health.
11) This product may rise my cholesterol. (Fat in human body cells)
12) This product contains vitamins and/or minerals.

Strongly agree – strongly disagree (7-point Likert Scale)

Purchase intention

13) I would never buy the product.
14) I definitely intend to buy the product.
15) I will definitely not buy it.
16) I will probably buy it.

Strongly agree – strongly disagree (7-point Likert Scale)

General health interest

17) I eat what I like and I do not worry about the healthiness of food.
18) I am very particular about the healthiness of food.
19) The healthiness of food has little impact on my food choices.
20) I always follow a healthy and balanced diet.
21) It is important for me that my diet is low fat.
22) The healthiness of snacks makes no difference for me.
23) I do not avoid any foods, even if they may rise my cholesterol.
24) It is important for me that my daily diet contains a lot of vitamins and minerals.

Demographic questions

What is your gender?
- Male
- Female

What is your age (in years)?
- Younger than 18
- 18-29
- 30-49
- 50-64
- Older than 65

What is the highest level of education you have completed?
- None
- High school
- MBO
- HBO/Bachelor
- Master
- Doctorate

What is your current living situation?
- Single (without children)
- Single (with children)
- Married/living with partner (without children)
- Married/living with partner (without children)
- Living with parents
- Living with housemates
- Other situation, namely…

End of questionnaire.
Thank you for your participation!

Appendix 5: Scatterplot correlation moderation

The relationship between the dependent variable perception of healthiness and the moderator general health interest.