

DUTCH CONSUMER'S EVALUATION OF SEALS OF APPROVAL

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*Comparing the Schijf
van vijf to the
Choices logo on the
aspects; perceived
need, understanding
and credibility.*

Abstract

Front of Pack systems are used to inform consumers about the healthiness of a food product. Such labelling systems are a measure to stimulate people to make healthier food choices. In the Netherlands the Choices logo is used. This is a Seal of Approval system. Recently there were concerns about the necessity and public reach of the Choices logo. As a result, the Ik Kies Bewust foundation, currently the endorser of the logo, acknowledged the need to reformulate the logo. However, the Minister of Health, Welfare and Sport went one step further and decided to eliminate the Choices logo.

In the Netherlands, the national health organisation uses the Schijf van vijf to educate people about a healthy diet. Because consumers are familiar with this logo and are likely to associate the logo with healthy food, the Schijf van vijf is considered as a possible Seal of Approval. This research compares the Choices logo to the Schijf van vijf on the aspects; perceived need, understanding and credibility. It is investigated whether a logo that is supported by the national health organisation (het Voedingscentrum) is a good alternative for the current Choices logo. This is done through a survey among Dutch consumers.

In total, 299 consumers filled in the survey. Respondents had to evaluate nine statements about both Seals of Approval. The questions concerned the following aspects: perceived need, understanding and credibility of the logos. In this study a Paired Samples T-Test, with an alpha of 0.05, was used to test the difference in perceived need, understanding and credibility between the Choices logo and the Schijf van vijf. Furthermore, background questions concerning the use and familiarity of food labels and the credibility of different sources were proposed.

Respondents indicated that the use of Seals of Approval is low. However, the findings showed that the perceived need for the Schijf van vijf is higher compared to the perceived need for the Choices logo. In addition, the Schijf van vijf is considered more credible by the respondents. Also, respondents indicated that the Schijf van vijf was easier to understand. However, this difference in understanding was not significant. The effect sizes for perceived need and credibility were small. This indicates that in reality the differences in perceived need and credibility between the Choices logo and the Schijf van vijf are little. Altogether, a Front-of-Pack system based on the Schijf van vijf seems promising from a consumer perspective.

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Introduction

Worldwide obesity and overweight is increasing at an alarming rate. Globally, in 2014 approximately 39% of adults was overweight and 13% of adults had obesity (WHO, 2016). These numbers are increasing. The risk for chronic diseases like hypertension, type 2 diabetes, gallbladder disease, coronary artery diseases (CAD) and certain types of cancer is higher in case people have obesity (Luo et al., 2007). Therefore, obesity is considered a growing global health problem.

Measures are taken in order to stimulate consumers to make healthier food choices. A nutrition table helps consumers to differentiate between foods and choose healthy food products (van Herpen and Trijp, 2011). However, research showed that consumers have difficulties with interpreting nutrition tables (Cowburn and Stockley, 2005). Furthermore, consumers do not always pay attention to the nutrition table (van Herpen and van Trijp, 2011). A solution is to present information in an understandable format on the front of the package. This comes forward to the need to change the format of nutrition labels in order to put them in the context of an overall diet (Cowburn and Stockley, 2005).

A diversity of Front of Pack labels exists: Guideline Daily Amount (GDA), Traffic Lights and Seals of Approval (Grunert and Wills, 2007; Hodgkins et al., 2012). Each FoP label is based on a different food profiling system and presents the information in a different format. A distinction can be made between non-directive and directive information (van Herpen and Trijp, 2011). Non-directive labels provide numerical information about key nutrients. Directive labels interpret nutritional information and communicate the overall healthiness of the product to the consumer (van Herpen and Trijp, 2011). Another distinction is between absolute and relative FoP labels. Absolute FoP labels cover all product categories and identify which products are healthy. Labels that provide relative information identify which products are healthiest within a product category. An example of a relative FoP label is the blue Choices logo.

In the Netherlands a Seal of Approval system is used (Ik Kies Bewust foundation, 2016). This is a relative FoP label. The Ik Kies Bewust (IKB) foundation manages this labelling system. The Seal of Approval indicates that the food product corresponds with criteria set by the organisation and that it is a healthy choice. The Seal of Approval is only represented on products that meet the criteria. These criteria are based on international food guidelines. Currently the IKB foundation has two health logos, a green and a blue Choices logo (IKB foundation, 2016). The green Choices logo is displayed on healthy basic products. These products contain important nutrients that you need on a daily basis. The blue Choices logo is displayed on products that you should not eat too often. It indicates which products are the best choice within a product category (best-in-class).

Recently there has been public debate about the necessity and credibility of the Choices logo (Consumentenbond, 2016; Foodlog, 2016). A concern was that the difference between the green and blue logo was not clear to consumers and that the blue logo was misleading. Other drawbacks of the logo were that not all food manufacturers participate in the labelling scheme and that the IKB

foundation is an initiative of food producers. As a result, the Consumentenbond started a campaign to remove the Choices logo. The campaign brought along media attention. It can be assumed that this diminished the credibility and public support of the Choices logo among consumers. After careful research and discussion meetings, the IKB Foundation acknowledged the complains. A report by the IKB identifies action points considering reformulation of the blue and green Choices logo. The Foundation recommends to eliminate the blue Choices logo, and to revise the format of the green Choices logo (IKB; Adviesbrief aan het Ministerie van VWS, 2016). However, the Minister of Health, Welfare and Sport went one step further and decided to eliminate the green Choices logo as well (NOS, 2016).

Even though research has been done on different FoP systems, research on a system that is harmonized with national nutritional advice is lacking. There are few FoP systems that are endorsed by national health organisations. The Voedingscentrum is the Dutch national health organisation. It is expected that communication of a Seal of Approval by the Voedingscentrum will create public support (IKB; Adviesbrief aan het Ministerie van VWS, 2016). It is examined whether the Schijf van vijf will be appropriate as a replacement of the 'old' Choices logo. Therefore, in this study the Schijf van vijf is considered as the new visual logo. This explorative research will focus on the perceived need, understanding and credibility of a new logo compared to the 'old' green Choices logo. A survey among Dutch consumers is used to examine these aspects. The findings of this research will aid in developing a Seal of Approval that optimises the transfer and understanding of nutrient information.

Theoretical background

Nutritional labelling

It is desirable that consumers have a healthy diet. Therefore, they should be able to make informed decisions with regard to the nutritional content of food products. The USA (FDA, 2016) obliges food manufacturers to display a table with nutritional content on the package of the food product. In the European Union, a nutrition table is compulsory when a health claim is made (NVWA, 2016). From December 2016 it will be compulsory for all food products in the EU to display a table of nutritional content.

By providing information about the nutritional content of a food product, the consumer is able to make a deliberate choice. Grunert and Wills (2007) state the following “nutritional labelling is an attractive instrument for a variety of reasons: it supports the goal of healthy eating while retaining consumer freedom of choice, and it reduces information search costs for consumers, which should make it more likely that the information provided is actually being used”. However, other research showed that consumers do not intensively pay attention to information on food packages (van Herpen and van Trijp, 2011). Whether consumers pay attention to the information depends on consumer goals, interests and time constraints (Rawson et al., 2008; van Herpen and Trijp, 2011; Grunert et al., 2010; Feunekes et al., 2008). Furthermore, whether the information is understood and whether it affects behaviour depends on knowledge (Feunekes et al., 2008). Older people and people with a lower education have difficulties in understanding nutritional tables (Cowburn and Stockley, 2005). Therefore, simple labels that are easy to understand are desirable.

Front of Pack labelling

A diversity of Front of Pack (FoP) labels has been developed in order to make nutrition information more accessible to consumers. FoP labels must be scientifically valid and not misleading for the consumer (Hodgkins et al., 2012). The labels are based on a number of key components such as: salt, sugar, saturated fat and calories (van Herpen and Trijp, 2011; Grunert et al., 2010). These nutritional components are identified by consumer interests and nutritionists. FoP labelling schemes are considered an effective tool to aid consumers in making healthier food decisions (Feunekes et al., 2008; Vyth et al., 2009).

FoP labels range on a continuum from non-directive (numerical) to directive (normative) information. Non-directive labels provide numerical information about key nutrients (van Herpen and Trijp, 2011). The nutrients are represented on an absolute, numerical basis and the nutritional content is not interpreted or compared to other food products. However, directive labels interpret nutritional information and communicate the overall healthiness of the product (van Herpen and Trijp, 2011). Food products can be compared to each other and their relative healthiness is represented on the package. Often this is done through using visual tools (such as colour schemes). According to Grunert and Wills (2007) using interpretational aids can help consumers to understand available information. This can lead to healthier product selection. Time, knowledge, interests and goal constraints (Rawson et al., 2008; van Herpen and Trijp, 2011; Grunert et al., 2010) that limit the effect of nutritional tables

can be eliminated through using easy to interpret, visual labels (Cowburn and Stockley, 2005; van Kleef and Dagevos, 2015). An example is directive FoP labelling.

Another distinction can be made between absolute and relative FoP labels. Absolute FoP labels cover all product categories. Relative FoP labels provide information on which products are best-in-class. They identify which products are healthiest within a product category.



Figure 1. Front of Pack labels

FoP labelling is used in a diversity of appearances and formats (Figure 1). Based on the degree of normative, directive information about healthiness, several FoP labels can be identified: Guideline Daily Amounts (GDA), Traffic Lights (TL) and Seals of Approval (Grunert and Wills, 2007; Hodgkins et al., 2012). The continuum of non-directive and directive labels is shown in Figure 2.



Figure 2. Continuum of directiveness (van Herpen and Trijp, 2011).

The GDA represents the intake of key nutrients in one food portion as a percentage of the daily recommended intake of the key nutrients (Bussell, 2005). GDA labels provide numerical information and do not communicate the overall healthiness of the product. Therefore, it is considered to be a non-directive FoP label. The Traffic Light scheme takes an intermediate position on the continuum between non-directive and directive FoP labels (van Herpen and Trijp, 2011). Additional to representing the GDA on the package, a colour scheme is applied. The GDA for the key components receives an interpretive colour code that indicates the healthiness of the product; red (high), yellow (medium) and green (low). It is expected that the consumer is able to interpret the information and develop a final judgement of the healthiness of the product. The final group of FoP labels are Seals of Approval. These are often provided by organisations. It is a simple, easy to understand logo that indicates the product is a healthy choice. The organisation identifies criteria which the product must meet before it can use the logo (Hodgkins et al., 2012). The logo does not represent any numerical nutrient information.

Effectivity of Front of Pack labels

Research based on self-reported measures found that consumers understand the GDA and are able to apply it in the correct way (Grunert et al., 2010). Because the GDA provides detailed, numerical information, it can give the consumer insight into the nutritional value. A condition is that the consumer must be able to interpret and understand this information. Another advantage is that this food labelling scheme takes into account the proportion size of a food product (Busell, 2005). An advantage of Traffic Light schemes is that the translation of numerical values may prompt less health conscious consumers to pay attention to the label (Brownell and Koplan, 2011). GDA and Traffic Light schemes are considered to be more complex schemes and are more difficult to understand for consumers compared to Seals of Approval (Feunekes et al., 2008). Advantages of Seals of Approval are that they are less affected by time pressure, influence consumer behaviour and do not limit the consumer from paying attention to other on-pack information (Van Herpen and Trijp, 2011). Furthermore, consumers need less time to evaluate simple labels (Seal of Approval) in comparison to evaluating complex labels (GDA and TL) (Feunekes et al., 2008). In a context where decisions need to be made quickly, the Seal of Approval seems to be more effective in transferring information (Feunekes et al., 2008). In a supermarket environment consumers pay little attention to nutrition information. Therefore, a simple logo that provides understandable information to the consumer in one glance is desirable (Feunekes et al., 2008).

Conceptual framework

Several factors explain how a label is interpreted by the consumer and how it influences behaviour. Grunert and Wills (2007) developed a theoretical framework that examines the relation between a food label and consumer behaviour. This model provided the foundation for the conceptual framework used in this research (Figure 3). The following stages occur in processing nutrition information: search, exposure, perception, understanding and behaviour. This process is influenced by the appearance of a logo and the knowledge and demographics of the consumer. The main focus of this research will be on perceived need, understanding and credibility. The first section will shortly discuss the background variables; appearance of the logo and knowledge and demographics of the consumer. The second section will mention the stages: search, exposure and behaviour. After this, the key concepts; perceived need, understanding and credibility are discussed. Furthermore, for each key concept hypotheses are formulated.

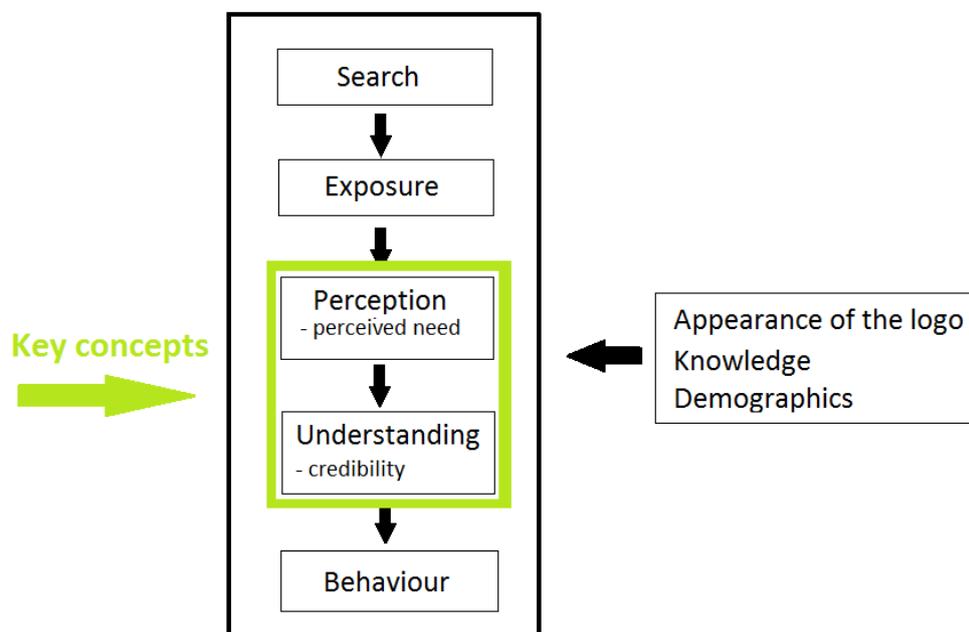


Figure 3. Conceptual framework including key concepts: perceived need, understanding and credibility.

Background variables

It is expected that the appearance of the logo and the knowledge and demographics of the consumer influence the stages in the conceptual framework (Grunert and Wills, 2007). Consumer interests and goals influence whether attention is paid to nutrition labels (Rawson et al., 2008; van Herpen and Trijp, 2011; Grunert et al., 2010; Feunekes et al., 2008). According to Grunert and Wills (2007) knowledge about nutrition largely influences the understanding and use of FoP labels. The relationship between knowledge and understanding of labels was also identified by Feunekes et al. (2008). Demographics is expected to be correlated with interest and knowledge about nutrition issues (Cowburn and Stockley, 2005). People with a higher education have more knowledge of

nutrition issues (Drichoutis et al., 2005). Furthermore, they are more likely to use food labels to make a product choice (Satia et al., 2005; Guthrie et al., 1995). This indicates that people with a higher education are capable to comprehend food labels (Drichoutis et al., 2005). However, older people, people with a lower education and people from lower social classes have difficulties with understanding nutrition labels (Cowburn and Stockley, 2005; van Kleef and Dagevos, 2015). Another factor that influences all stages in the conceptual model is the appearance of a label. Most FoP systems use recognizable, visual tools to transfer nutrition information. Simple FoP labels (Seal of Approval) are easier recognized by consumers than complex FoP labels (GDA and Traffic Lights) (Feunekes et al., 2008). This facilitates quick understanding of the FoP label. Geiger (1998) states that effective nutrition labels are “concise, relate to a consumer need or task to be solved, appear on the front panel and combine text and graphics using colour”. Label characteristics influence the salience of the FoP label. Attention to a FoP label is influenced by the type of label, display size, colour scheme and position on pack (Bialkova and van Trijp, 2010; van Herpen and van Trijp, 2011).

Stages in the Conceptual framework

Interest in nutrition issues enhances the search for information. It is likely that people who actively search for information about the food product are exposed to the FoP label. However, active search for information is not necessary for exposure. Accidental exposure occurs as well. In case of active search, the information processing is likely to be deliberate and in-depth. As a result, the effect of the FoP label on behaviour is expected to be bigger (Grunert and Wills, 2015). A label will only influence consumer behaviour if the consumer is exposed to it (Grunert and Wills, 2007; van Kleef and Dagevos, 2015). After exposure, the stages perception and understanding take place. These stages are further discussed in next sections. The final stage in the theoretical framework is the behaviour of the consumer. This stage indicates how the nutrition information is used. A label is used when the consumer makes a purchase based on the information that is provided (Grunert and Wills, 2007).

Perception

Perception concerns whether the information of the nutrition label is absorbed by the consumer (Grunert and Wills, 2007). An important aspect in perception is if the consumer reads the information. This is determined by time pressure, selective reading and motivation (Grunert and Wills, 2007). A nutrition label can be perceived either conscious or subconscious. In both cases the label can influence behaviour. However, it is believed that conscious perception has a stronger, long lasting effect on behaviour (Grunert and Wills, 2007). Perception is dependent on time and motivation constraints (van Kleef and Dagevos, 2015; Rawson et al., 2008; van Herpen and Trijp, 2011; Grunert et al., 2010; Feunekes et al., 2008). Furthermore, whether a consumer pays attention to a label depends on bottom up and top down factors (van Herpen and Trijp, 2011; van Kleef and Dagevos, 2015). Appearance of a label and environmental factors can be considered bottom up factors. Factors inherent in the consumer himself, such as motivation, time and goal constraints are considered top down factors. Perceived need is also a top down factor.

Perceived need

When the perceived need for information is high, it is likely that information processing will be in-depth (Verbeke, 2005). Variables such as knowledge, lifestyles and socio demographics influence the perceived need for information (Verbeke, 2005). Interests are also likely to be correlated with the perceived need for information. According to consumers, healthiness of a product is an important factor that influences food decisions (Schor et al., 2010). Consumers state that FoP labels help to simplify making healthy food choices. They claim to understand FoP labelling and to use it in a real life shopping environment (Feunekes et al., 2008). These findings are based on self-reported measures.

Observational studies found that the use of food labels is relatively low in a real life shopping environment (Grunert et al., 2010). This may indicate that in such an environment, the need for nutrition labels is little. An explanation could be that consumers overestimate their knowledge on nutrition issues. Therefore, they might think a food label is not necessary to make an informed decision. This can prevent a consumer from perceiving the FoP label. Furthermore, the optimistic bias may play a role. The optimistic bias states that people systematically underestimate the event that something bad will happen to them (Klein and Helweg-Larsen, 2002). It is possible that consumers underestimate the chance of becoming overweight. In this case, the consumer will pay little attention to the FoP label and the label will not be perceived.

Consumer liking is guided by three considerations (Grunert and Wills, 2015). Preferences of consumers can indicate perceived need. First, consumers show a preference for simplification. Detailed and numerical information can be difficult to understand for consumers (Cowburn and Stockley, 2005). Consumers show the need for a simple food label in order to assess the nutritional content of food products. Second, consumers want to know what the information represents and how it is established. Third, if consumers feel pushed or coerced to make a certain decision, resistance is created. This indicates that consumers show a need for freedom of choice.

Hypothesis

This research focusses on the perceived need, understanding and credibility of a new visual logo compared to the 'old' green Choices logo. In this research two possible Seals of Approval are compared to each other: the (old) Choices logo and the Schijf van vijf (Figure 4).



a. Choices logo



b. Schijf van vijf

Figure 4. Seals of Approval included in this study.

There is little research on the perceived need of consumers for a FoP label. However, the use of FoP labels has been examined more often. It is assumed that the use of FoP labels can indicate the perceived need for a label. According to consumers, the healthiness of a product influences food decisions (Schor et al., 2010). It is assumed that in order to assess the healthiness of a product, a food label is needed. This assumption is supported by research that indicated that consumers understand and use FoP labels (Feunekes et al., 2008).

Research by the Consumentenbond (2016) found that the majority of the consumers do not understand the Choices logo. It is likely that the perceived need for a label that is not understood, is low. In contradiction, the Schijf van vijf is referred to by professionals as a convenient tool to educate people about a healthy diet (Voedingscentrum, 2016). This was the result of a survey among nutritionists, done by the Voedingscentrum. It can be assumed that this indicates that the Schijf van vijf is a useful tool for consumers. Usefulness can be an indicator for perceived need. Therefore the following hypothesis is derived:

H1. Consumers will show a higher perceived need for the Schijf van vijf logo compared to the Choices logo.

Understanding

In this stage the consumer attaches meaning to the FoP label. The food producer displays the FoP label because it wants to convey a message about the healthiness of the product. Understanding of the food label is essential. In case the consumer understands the food label, it is more likely that he or she will make a healthier food choice (Drichoutis et al., 2005). Consumers indicate that they use and understand most Seals of Approval (Grunert and Wills, 2007). However, confusion increases when the information is more complex. When nutrition knowledge is lacking, the ability to understand a food label is lower (Williams, 2005; Grunert and Wills, 2007; Feunekes et al., 2008). Furthermore, active processing of information improves understanding (Natter and Berry, 2005). Grunert et al. (2010) distinguish conceptual understanding and substantial understanding. Conceptual understanding refers to whether consumers understand the general meaning of a food label. Substantial understanding concerns whether the interpretation of the food label is correct.

Nutrition labels can be difficult to understand for older people, people with a lower education and people from lower social classes (Cowburn and Stockley, 2005; van Kleef and Dagevos, 2015). A solution is to use interpretational aids (Grunert and Wills, 2007). Pictorial elements are easier recognized and processed than words (van Kleef and Dagevos, 2015). Furthermore, a long nutrition claim tends to be ignored and not understood by consumers (Wanksink et al., 2005)

Before encountering new information about the product, the consumer is likely to have some pre-existing knowledge. Pre-existing knowledge can for example be established through advertising (van Kleef and Dagevos, 2015). The consumer integrates new information (derived from the nutrition label) with existing knowledge. Through this process, the meaning from the FoP label is inferred.

Hypothesis

This research will focus on the conceptual understanding of the Schijf van vijf and the Choices logo. The Schijf van vijf uses pictorial elements of basic food products. Pictorial elements are easier to recognize and understand for consumers (van Kleef and Dagevos, 2015). The Schijf van vijf is provided by a national health organisation called the Voedingscentrum. This organisation currently uses the Schijf van vijf to educate people about a healthy diet. It is likely that respondents are familiar with both the Schijf van vijf and the Choices logo. Research by the Consumentenbond indicated that the majority of the consumers do not understand the Choices label (Consumentenbond, 2016). On the other hand, since the Schijf van vijf logo is used for nutritional education it is assumed that the Schijf van vijf is understood by most consumers. Because of lack of understanding of the Choices logo (Consumentenbond, 2016) and because the Schijf van vijf uses pictorial elements, it is expected that the respondents will understand the Schijf van vijf better than the Choices logo.

H2. Consumers will consider the Schijf van vijf logo as better understandable compared to the Choices logo.

Credibility

A credible source increases the relevance of a nutrition label and therefore is a valuable commodity. A highly credible source induces more persuasion compared to a low credible source (Pornpitakpan, 2004). Information that is not credible will be more easily discarded by the consumer. Therefore the credibility of a nutrition label and the source influence the inferences made by the consumer. In the consumer decision making process, credibility is an important cue when selecting products (Kerstetter and Cho, 2004). It affects how consumers perceive and respond to information. However, lack of understanding the label can diminish the credibility (Williams, 2005). Furthermore, if prior knowledge on the topic is high, consumers are less likely to consider credible sources (Kerstetter and Cho, 2004). On the other hand, if prior knowledge on the topic is little, the relevance of a credible label is higher. Trust and transparency are factors closely related to the credibility of a FoP label. It is likely that a credible label has public support.

Consumers are not able to assess the healthiness of a product on their own (van Kleef and Dagevos, 2015). They must rely on nutrition labels to get information. Therefore the healthiness of a product is a credence attribute. A definition of a credence attribute is following "it cannot be ascertained even after normal use for a long time" (Steenkamp, 1989).

Information is used when the endorser of the information is trustworthy. In order for a nutrition label to be trustworthy, it should be clear who is responsible for the information (van Kleef and Dagevos, 2015). In case the food industry is the source of a nutrition label, information is considered less credible. Consumers distrust the food industry because they may act out of economic interests (van Kleef and Dagevos, 2015). This can lead to situations in which consumers are misled by information. Furthermore, when a license fee must be paid to represent a FoP label, a label is considered less credible.

Credibility of the FoP label can be enhanced by transparency in the underlying labelling criteria (van Kleef and Dagevos, 2015). In addition, national and international health organisations increase the

credibility of the information (Feunekes et al., 2008). Furthermore, a positive attitude towards the endorser and the information can be accomplished by a source that is high in expertise (Braunsberger, 1996). By providing regulations concerning food labelling, the government can stimulate the credibility of food labels (van Kleef and Dagevos, 2015).

Transparency in food labelling schemes is controversial due to a diversity of labelling schemes. This creates confusion among consumers. Creating a single (inter)national labelling scheme will increase transparency in the underlying profiling system of a label. Furthermore, participation of a broad range of food manufacturers in a labelling scheme can increase the credibility of a label.

Hypothesis

Whether a label is considered credible depends among other things on the source of the label. Endorsement by a national health organisation increases the credibility of a logo (Feunekes et al., 2008). The Schijf van vijf is endorsed by the Voedingscentrum, which is the Dutch national health organisation. Furthermore, doctors and dieticians are considered credible sources when concerning nutrition information (Grunert and Wills, 2007). The Schijf van vijf is developed based on scientific information and in cooperation with experts in the field of nutrition (van der Vossen and Hoeymans, 2016). A source that is high in expertise increases the credibility of a logo (Braunsberger, 1996). However, in case the food industry is the source of a logo, the information is considered less credible (van Kleef and Dagevos, 2015). The Choices logo is endorsed by the Ik Kies Bewust foundation, which is an initiative of food manufacturers. Furthermore, it should be clear who is responsible for the nutrition label in order for a message to be trustworthy (van Kleef and Dagevos, 2015). In the Schijf van vijf logo the endorser, which is the Voedingscentrum, is displayed. This creates transparency and increases the credibility of the logo. Based on the preceding notions, the hypothesis is following:

H3. Consumers will consider The Schijf van vijf logo as more credible compared to the Choices logo.

Methods

Participants

In total, 299 respondents filled in the survey. The survey was in Dutch. Therefore it can be assumed that all respondents had a Dutch nationality. Of all respondents, 26 percent was male and 74 percent was female. The majority (47 percent) of the respondents had pursued scientific education. Furthermore, 33 percent had pursued higher professional education and the remaining 20 percent pursued a low or middle education. The mean age of the respondents was 40 years with a standard deviation of 19 years.

Design and Procedure

The Choices logo and the Schijf van vijf were used to assess which Seal of Approval worked best for Dutch consumers (Figure 5). The Choices logo is used on food packages to indicate which products are a healthy choice. One and a half year after introduction of the Choices logo, the exposure of the logo to consumers had increased significantly and the majority of the consumers was familiar with the logo (Vyth et al., 2009). The Schijf van vijf is used in this research because the logo is currently used to educate people about a healthy diet. Therefore the logo is likely to be associated with healthy food products. This can make the Schijf van vijf a good alternative for the Choices logo. Furthermore, in the advisory report of the IKB foundation was mentioned that the new Seal of Approval should be in line with the guidelines of the Schijf van vijf (IKB; Adviesbrief aan het Ministerie van VWS, 2016). Using the Schijf van vijf as a Seal of Approval would be a way to accomplish this advice.



a. Choices logo



b. Schijf van vijf

Figure 5. Seals of Approval included in this study.

This research examined whether the Choices logo or the Schijf van vijf is more appropriate to use as a Seal of Approval in the Netherlands. This was done through a survey. In the survey, the logos were presented separate from each other. Furthermore, the logos were presented without the context of a product. It was expected that the context of a product distracted the attention from the logo.

The survey was an within subjects experimental design in which one factor was manipulated. This factor is the exposure to a FoP logo. There were two conditions; the 'old' green Choices logo and the

Schijf van vijf. In this research was tested whether the perceived need, understanding and credibility of the logo were dependent upon the type of Seal of Approval.

The survey was conducted on line using Qualtrics. The order of representation of the two logos was randomly assigned. Following the presentation of a logo, nine statements about the logos were submitted. After evaluating both logos, the respondent answered some background questions. Finally the respondent was able to indicate questions or remarks concerning the topic or survey. The complete survey can be found in Appendix A.

Measures

For most questions a 7- point Likert rating scale was used. It is indicated in case a different rating scale was used. The following concepts were the focus of this study: perceived need, understanding and credibility. After the informed consent, the participants were exposed to either the Choices logo or the Schijf van vijf.

Constructs were used to measure perceived need, understanding and credibility. For each construct, the Cronbach's alpha was derived. For the construct perceived need, the Cronbach's alpha was 0.826, for understanding it was 0.692 and for credibility the Cronbach's alpha was 0.847. This indicated that the constructs were valid (Cronbach's alpha > 0.7). The weakest construct was understanding. However, the Cronbach's alpha was considered sufficiently high.

Both Seals of Approval were presented to each respondent. Beneath the logo a short description was given about the meaning of the logo. Next, the respondents had to rate nine statements about the displayed logo (Table 1). Constructs were used to measure the perceived need, understanding and credibility of the logo.

Table 1. Constructs to measure perceived need, understanding and credibility.

| Statements |
|---|
| <i>Perceived need</i> |
| I appreciate this logo on healthy food and drinks. |
| I need this health logo to make a healthy product choice. |
| I would use this logo to make a healthier decision in the supermarket. |
| <i>Understanding</i> |
| I consider this logo easy to understand. |
| I know what this logo means. |
| This logo helps me to differentiate between healthy and unhealthy foods and drinks. |
| <i>Credibility</i> |
| This logo is credible. |
| I have confidence in this logo. |
| It is clear when a product can present this logo. |

All statements had to be evaluated for both the Choices logo and the Schijf van vijf. Each statement was rated on a 7-point Likert scale with extremes ranging from 'totally disagree' (1) to 'totally agree' (7).

Following, several background questions were proposed. The respondents received the question 'Which source is most credible for a health logo?'. They had to choose from either the Voedingscentrum, World Health organisation, European Union, Ik Kies Bewust foundation, Heart foundation, Consumentenbond or they could indicate an organisation themselves. Respondents then had to answer 'Do you use a nutrition table/health logo when making a product choice?'. They could choose 'never', 'sometimes' or 'always'. Following, the respondents had to rate 'I am familiar with the Choices logo/the Schijf van vijf' on a 7-point scale ranging from 'totally disagree' to 'totally agree'. After this the respondents had to answer the following question: 'Are you familiar with the discussion concerning the Choices logo in de media?' with either 'yes' or 'no'. Respondents also had to indicate their educational level by choosing one out of eight options. Next, they answered 'How important is health for you when doing groceries?', ranging from 'not important at all' (1) to 'very important' (7). Following, the respondent filled in their gender and age. Finally, respondents had the opportunity to leave remarks on the topic or the survey.

Data analysis

The correlation between perceived need, understanding and credibility was calculated using a scatter dot and Pearson Correlation. Furthermore, a Paired Samples T-Test was used to test the difference in perceived need, understanding and credibility between the Choices logo and the Schijf van vijf. For this test, an alpha of 0.05 was used. Subsequently, with partial eta squared the effects sizes were calculated. Also, descriptive statistics were used to provide insight into the data.

Results

Background information on the topic

In the survey several background questions on the topic were proposed. This information provides insight into the knowledge of respondents on the topic. The questions concerned the use and familiarity of food labels and the credibility of different sources. Results can be found in Figure 6.

| | Choices logo | | Schijf van vijf | | |
|---|--------------|---|-----------------|-----------------------------|---------------|
| | Mean | Standard deviation | Mean | Standard deviation | Sig |
| Familiarity | 5.68 | 1.28 | 5.82 | 1.32 | 0.000 (<0.05) |
| Importance healthiness | | Mean 5.81 | | Standard deviation 0.884 | |
| Usage* | | always | never | sometimes | |
| - Nutrition label | | 10% | 50.2% | 39.8% | |
| - Seal of Approval | | 0.7% | 40.2% | 59.1% | |
| Familiar with discussion* | | yes: 53.2% | | no: 46.8% | |
| Most reliable sources for a food label* | | | | | |
| 1. | | Voedingscentrum (51.3%) | | | |
| 2. | | World Health Organisation (25.7%) | | | |
| 3. | | Consumentenbond (9.7%) | | | |
| 4. | | Other, that is ... (6.5%) | | | |
| 5. | | Ik Kies Bewust Foundation/ Heart Association (2,6%) | | | |
| 6. | | European Union (1.6%) | | | |
| * Percentage indicates how many respondents selected the option | | | | | |

Figure 6. Results background information.

Respondents indicated that they were familiar with both the Choices logo and the Schijf van vijf. The mean for familiarity with the Choices logo and the Schijf van vijf was respectively 5.68 (standard deviation= 1.28) and 5.82 (standard deviation= 1.32). The respondents were significantly ($0.000 < 0.05$) more familiar with the Schijf van vijf compared to the Choices logo. Furthermore, 53.2 percent of the respondents indicated that they were familiar with the discussion concerning the Choices logo. On the other hand, 46.8 percent stated that they were familiar with this discussion. On a scale from 1 (not important at all) to 7 (very important), respondents stated that healthiness is an important factor when doing groceries (mean= 5.81; standard deviation= 0.884). Of the respondents, 50.2% sometimes uses nutrition labels when making a product choice, 39.8% never uses them, and 10% always uses nutrition labels. Furthermore, 59.1% of the respondents never uses health logos when making a product choice. Subsequently 40.2% sometimes uses a health logo, and 0.7% always uses a health logo. The majority (51.3%) of the respondents indicated that the Voedingscentrum is

considered the most reliable source for a health logo. Subsequently, the World Health Organisation (25.7%) and the Consumentenbond (9.7%) were considered the most reliable sources.

Main results

A Paired Samples T-Test was used to test the difference in perceived need, understanding and credibility between the Choices logo and the Schijf van vijf. For this test an alpha of 0.05 was used. The results of these tests are presented in Figure 7 and Table 1. In Appendix B the complete test results of the Paired Samples T-Test can be found.

The correlation between the different constructs was derived after plotting a scatter dot and using Bivariate Correlation. Results of this test can be found in Appendix C. The correlation between perceived need and understanding was 0.634. The correlation between understanding and credibility was 0.682. Finally, the correlation between perceived need and credibility was 0.659. These values for Pearson Correlation indicate that there is a strong, positive, relationship between the constructs. Changes in one construct strongly influence changes in the second construct. Furthermore, the significance values indicated that there is a significant correlation between the constructs ($0.000 < 0.05$).



Figure 7. Mean scores for perceived need, understanding and credibility.

Table 1. Results Paired Samples T-Test.

| | Choices logo | | Schijf van vijf | | Sig. (2-tailed) | Partial Eta Squared |
|----------------|--------------|--------------------|-----------------|--------------------|-----------------|---------------------|
| | Mean | Standard deviation | Mean | Standard deviation | | |
| Perceived need | 3.40 | 1.43 | 3.56 | 1.31 | 0.047 (<0.05) | 0.013 |
| Understanding | 4.51 | 1.26 | 4.55 | 1.33 | 0.659 | 0.001 |
| Credibility | 3.69 | 1.56 | 4.16 | 1.42 | 0.000 (<0.05) | 0.072 |

Perceived need

On average, respondents showed little perceived need for a Seal of Approval. The mean for the Choices logo was 3.40 (standard deviation= 1.43) and the mean for the Schijf van vijf was 3.56 (standard deviation= 1.31) on a 7 point scale. When using the Paired Samples T-Test, the perceived need for the Choices logo is significantly lower compared to the mean of the Schijf van vijf ($0.047 < 0.05$). *This indicates that the respondents showed a higher perceived need for the Schijf van vijf logo, compared to the Choices logo.* Therefore, hypothesis one is confirmed. The Partial Eta Squared for perceived need was 0.013. This indicates that the effect size is very small. Therefore, in reality the difference in perceived need between the Choices logo and the Schijf van vijf is little.

Understanding

Respondents indicated that both Seals of Approval were easy to understand. On a 7-point scale, the mean for understanding of the Choices logo was 4.51 (standard deviation= 1.26) and the mean for understanding of the Schijf van vijf was 4.55 (standard deviation= 1.33). Respondents indicated that it was not clear when a product could wear the Choices logo or the Schijf van vijf. The means were respectively 3.34 (standard deviation= 1.67) and 3.36 (standard deviation= 1.80). The responses on this item decreased the overall mean of the construct understanding. Furthermore, familiarity with a logo and understanding were correlated (correlation= 0.253).

A Paired Samples T-Test indicated that the mean of the Choices logo was not significantly different from the mean of the Schijf van vijf ($0.659 > 0.05$). *This shows that respondents do not consider the Schijf van vijf better understandable compared to the Choices logo.* Therefore, hypothesis two is not confirmed.

Credibility

On average, respondents indicated that the credibility for the Choices logo is low (mean= 3.69; standard deviation= 1.56) and the credibility of the Schijf van vijf is neither high nor low (mean= 4.16; standard deviation= 1.42). A Paired Samples T-Test indicated that concerning the credibility, the mean of the Choices logo was significantly lower compared to the mean of the Schijf van vijf ($0.00 < 0.05$). With this result, the third hypothesis is confirmed. *Respondents consider the Schijf van vijf as more credible compared to the Choices logo.* The Partial Eta Squared for credibility was 0.072. Therefore, the practical significance is very low. In reality the difference in credibility between the Choices logo and the Schijf van vijf is small.

Discussion

Recently, there has been discussion about the necessity and credibility of the Choices logo. After research and discussion meetings, the Ik Kies Bewust foundation acknowledged the need to reformulate the current Choices logo. However, the Minister of Health, Welfare and Sport went one step further and decided to eliminate the Choices logo. In this study a possible new Seal of Approval is proposed: the Schijf van vijf. This is a Seal of Approval harmonized with national health advice. This study investigated whether the Choices logo or the Schijf van vijf is the most appropriate Seal of Approval in the Netherlands. The two Seals of Approval were compared on the aspects: perceived need, understanding and credibility. Identifying which logo performs best on these aspects will aid in developing a new visual logo that helps to inform consumers to make healthy food decisions.

Overall, the findings suggest that the perceived need and credibility of the Schijf van vijf is higher compared to the choices logo. However, the perceived need for both logos was low. In addition, the majority of the respondents indicated that they never use a health logo. This is in contradiction with earlier research based on self-reported measures (Feunekes et al., 2008; Schor et al., 2010). Earlier research indicated that consumers use food labels. It was assumed that the use of labels indicated the perceived need for a Seal of Approval. It may be that this assumption is invalid. Furthermore, the contradiction can be explained by the optimistic bias. It is possible that respondents consider themselves knowledgeable about the healthiness of products. This could have decreased their need for a Seal of approval, since they consider themselves capable to make a healthy choice without using a Seal of Approval. Although the result that there is little perceived need for a health logo is not in line with earlier research based on self-reported measures, it is in agreement with observational research. Observational studies found that the use of food labels is relatively low in a real life shopping environment (Grunert et al., 2010). Even though the respondents in this research indicated that they do not use Seals of Approval and that the perceived need for such a logo is low, it could be that a Seal of Approval unconsciously serves as a cue to make a healthier food decision. In that case, consumers might not be aware of the influence of a Seal of Approval. This could explain why the respondents reported low use and perceived need for a Seal of Approval.

The understanding of the Schijf van vijf was not significantly different compared to the understanding of the Choices logo. Because the Schijf van vijf uses more pictorial elements, it was expected that this increased understanding (Viswanathan et al., 2009). However, this was not confirmed in the research. That the logos are somewhat equally understood could be explained by the fact that both logos have been in use for several years. This could have increased familiarity with the logos and therefore understanding. This research found that the Choices logo was understood by respondents. This is not in line with the results of the Consumentenbond (2016). Research by the Consumentenbond stated that the Choices logo is not understood by the majority of the consumers. An explanation for this contradiction is that the Consumentenbond tested the substantial (exact) understanding of the Choices logo. However, this research tested conceptual understanding of the logo.

The credibility of the Schijf van vijf was higher compared to the credibility of the Choices logo. Also, the Voedingscentrum was considered the most reliable source to provide a food label. This is in line with earlier research which found that food labels endorsed by national health organisation are more

credible compared to labels provided by the food industry (Feunekes et al., 2008). In addition, in the logo, the Schijf van vijf presents the endorser. This makes clear who is responsible for the food label. This increases trustworthiness (Grunert and Wills, 2007). On the other hand, respondents indicated that it was not clear when a product could represent either the Choices logo or the Schijf van Vijf. Transparency in the underlying labelling criteria increases credibility of the label (van Kleef and Dagevos, 2015). Therefore, this item decreased the overall score of credibility of the Seal of Approval.

Some remarks about this research can be made. First, the low values for Partial Eta Squared indicated that although the difference for perceived need and credibility between the two logos was significant, the difference was small in reality. However, due to the big sample (N=299), these small differences led to significant results. Second, the majority of the respondents was female (74%). This could have led to a bias in the results. Therefore, generalisation of the sample should be done with caution. Third, when testing the understanding of the logo, the conceptual understanding of the respondents was tested. This means that it was tested whether the general meaning of the Seal of Approval was understood. From this data we could not derive if the respondents correctly understood and interpreted the Seals of Approval. This may have biased the results. Fourth, in this research the Schijf van vijf logo was introduced as a possible Seal of Approval. The underlying idea was that this logo could be displayed on the same products as on which the Choices logo could be displayed. However, respondents may have interpreted the application of this logo on products in a different way.

Some strong aspects of the research were following. First, 299 respondents filled in the survey. This increases the generalisability of the sample. Second, 46.8% of the respondents indicated that they were not familiar with the discussion concerning the Choices logo. Therefore, the sample consists of a diverse group of respondents. This is desirable because respondents that were not familiar with the discussion, are likely to be less biased by the attention that the media paid to the discussion. Furthermore, the mean age of the respondents was 40 years (standard deviation=19). This increases the generalisability of the sample.

Recently the Minister of Health, Welfare and Sport decided to eliminate the Choices logo. As an alternative an app that provides information on the composition and nutritional value of a food product is introduced. The advantage of the app is that it is able to provide personalised and detailed information. However, a disadvantage is that people must scan the food product with their phone to gain information. Therefore, this method requires some effort. The Consumentenbond (2016) states that this makes it harder for consumers to make a healthy decision. This research proposes another alternative for the Choices logo: the Schijf van vijf. Advantages of Seals of Approval are that they are less affected by time pressure, influence consumer behaviour and do not limit the consumer from paying attention to other on-pack information (Van Herpen and Trijp, 2011). Furthermore, the logo may unconsciously serve as a cue to guide healthy decision making.

Conclusion

The main conclusions of this research are that the perceived need and credibility of the Schijf van vijf are higher compared to the Choices logo. However, the differences between the Choices logo and the Schijf van vijf on these aspects were small. Also, respondents indicated that the Schijf van vijf was a little easier to understand. However, this difference in understanding was not significant. Overall, the findings indicate that a Front-of-Pack system based on the Schijf van vijf seems to be a promising alternative for the Choices logo.

The Schijf van vijf is developed by the Voedingscentrum. Endorsement of a health logo by the Voedingscentrum makes harmonization with national nutrition advice easier. Furthermore, the Voedingscentrum is considered the most credible endorser of a health logo. Another advantage of the Schijf van vijf is that it is not yet used as a health logo. In contradiction, the Choices logo has been in use for ten years and multiple campaigns have been set in to increase understanding of this logo. However, these campaigns did not pay off. Because the Schijf van vijf is currently used for food education, it is expected that people associate the logo with healthy food. Based on the results of this research, it is expected that using the Schijf van vijf as a Seal of Approval is a promising alternative to the Choices logo.

Another important finding of this research was that respondents indicated that they do not use Seals of Approval. Furthermore, they showed little perceived need for either the Schijf van vijf or the Choices logo. This creates questions on the necessity and public reach of a new Seal of Approval. Further research on the use of Seals of approval is necessary before a new logo is implemented. Furthermore, additional research is needed on the functioning of the Schijf van vijf as a Seal of Approval.

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Appendix A. Survey

Gezondheidslogo's

Beste deelnemer, Fijn dat u mee wilt werken aan dit onderzoek! Deze vragenlijst zal gaan over de gezondheidslogo's en zal ongeveer 5 minuten duren. Geef eerlijk antwoord op de vragen, foute antwoorden bestaan niet. De resultaten worden anoniem verwerkt en zullen enkel gebruikt worden om meer inzicht te krijgen in uw beeld van gezondheidslogo's. Deelname is eenmalig en geheel vrijwillig. Voor eventuele vragen kunt u mailen naar michelle.vanboheemen@wur.nl. Alvast ontzettend bedankt voor uw deelname!

- Ja, ik ga akkoord met deelname aan dit onderzoek



Het Vinkje wijst op de betere keuze binnen een productgroep. Het Vinkje met de groene cirkel is terug te vinden op gezondere basisproducten. Deze bevatten belangrijke voedingsstoffen die je dagelijks nodig hebt.

De stellingen hieronder gaan over het bovenstaande gezondheidslogo. Geef aan in hoeverre u het eens bent met de volgende stellingen.

| | Helemaal mee oneens (1) | Mee oneens (2) | Een beetje mee oneens (3) | Niet mee eens/ niet mee oneens (4) | Een beetje mee eens (5) | Mee eens (6) | Helemaal mee eens (7) |
|--|-------------------------------|-----------------------|---------------------------------|---|-------------------------------|-----------------------|-----------------------------|
| Ik waardeer bovenstaand gezondheidslogo op gezonder eten en drinken. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik heb dit gezondheidslogo nodig om een gezonde product keuze te maken. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dit gezondheidslogo zou ik gebruiken om een gezondere keuze te maken in de supermarkt. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind dit logo makkelijk te begrijpen. (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik weet wat dit logo betekent. (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dit logo helpt me om gezond en ongezond eten en drinken van elkaar te onderscheiden. (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dit logo is geloofwaardig. (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik heb vertrouwen in dit logo. (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Het is duidelijk wanneer een product dit logo mag dragen. (9) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



De Schijf van Vijf wordt gebruikt om voorlichting te geven over een gezond dieet. Dit logo zou ook gebruikt kunnen worden als gezondheidslogo op gezondere producten. Houd dit in gedachten bij het beantwoorden van de volgende stellingen.

De stellingen hieronder gaan over het bovenstaande gezondheidslogo. Geef aan in hoeverre u het eens bent met de volgende stellingen.

| | Helemaal mee oneens (1) | Mee oneens (2) | Een beetje mee oneens (3) | Niet mee eens/ niet mee oneens (4) | Een beetje mee eens (5) | Mee eens (6) | Helemaal mee eens (7) |
|--|-------------------------------|-----------------------|---------------------------------|---|-------------------------------|-----------------------|-----------------------------|
| Ik waardeer bovenstaand gezondheidslogo op gezonder eten en drinken. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik heb dit gezondheidslogo nodig om een gezonde product keuze te maken. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dit gezondheidslogo zou ik gebruiken om een gezondere keuze te maken in de supermarkt. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Ik vind dit logo makkelijk te begrijpen. (4) | <input type="radio"/> |
| Ik weet wat dit logo betekent. (5) | <input type="radio"/> |
| Dit logo helpt me om gezond en ongezond eten en drinken van elkaar te onderscheiden. (6) | <input type="radio"/> |
| Dit logo is geloofwaardig. (7) | <input type="radio"/> |
| Ik heb vertrouwen in dit logo. (8) | <input type="radio"/> |
| Het is duidelijk wanneer een product dit logo mag dragen. (9) | <input type="radio"/> |

Welke afzender is het meest geloofwaardig voor een gezondheidslogo?

- Het Voedingscentrum (1)
- Wereld Gezondheids Organisatie (WHO) (2)
- Europese Unie (3)
- Ik Kies Bewust Stichting (4)
- Hart stichting (5)
- Consumentenbond (6)
- Anders, namelijk (7) _____

Gebruikt u een gezondheidslogo of voedingstabel wanneer u een product keuze maakt?

| | nooit (1) | soms (2) | altijd (3) |
|---------------------|-----------------------|-----------------------|-----------------------|
| Voedings tabel (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Gezondheidslogo (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Ik ben bekend met het Vinkje

- Helemaal mee oneens (1)
- Mee oneens (2)
- Een beetje mee oneens (3)
- Niet mee eens/ niet mee oneens (4)
- Een beetje mee eens (5)
- Mee eens (6)
- Helemaal mee eens (7)

Ik ben bekend met de Schijf van Vijf

- Helemaal mee oneens (1)
- Mee oneens (2)
- Een beetje mee oneens (3)
- Niet mee eens/ niet mee oneens (4)
- Een beetje mee eens (5)
- Mee eens (6)
- Helemaal mee eens (7)

De afgelopen maanden heeft Het Vinkje veel aandacht gehad in de media. Zo begon bijvoorbeeld de consumentenbond met de campagne 'Weg met het Vinkje'. Arjen Lubach sprak ook kritisch over het Vinkje in zijn programma.

Bent u bekend met deze discussie in de media?

- Nee (1)
- Ja (2)

Wat is uw hoogst behaalde opleiding? Of indien u nog studeert, welke opleiding volgt u op dit moment?

- Basisonderwijs (1)
- Lager / voorbereidend beroepsonderwijs (vmbo beroeps, lbo, lts, ito, leao, lhno, lave, huishoudschool, etc.) (2)
- Middelbaar algemeen voortgezet onderwijs (vmbo theoretisch, mavo, ulo, mulo, ivo, vglo, etc.) (3)
- Middelbaar beroepsonderwijs (mbo, mts, meao, mhno, inas, mis, etc.) (4)
- Hoger algemeen voortgezet onderwijs (havo) (5)
- Voorbereidend wetenschappelijk onderwijs (vwo, gymnasium, atheneum) (6)
- Hoger beroepsonderwijs (hbo, hts, heao, kandidaatsopleiding, bachelor) (7)
- Wetenschappelijk onderwijs (wo, doctoraal, master) (8)

Hoe belangrijk is gezondheid voor u als boodschappen doet?

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Helemaal niet belangrijk | <input type="radio"/> | Heel erg belangrijk |

Wat is uw geslacht?

- Man (1)
- Vrouw (2)

Wat is uw leeftijd in jaren?

_____ Leeftijd (1)

Als u nog opmerkingen heeft voor de onderzoekers, schrijf deze dan hieronder:

Heeft u interesse om vaker deel te nemen aan vragenlijsten zoals deze? Dan kunt u zich inschrijven voor het MCB universiteitspanel. Heeft u geen interesse, of bent u al ingeschreven bij deze panels? Dan kunt u deze vraag overslaan.

- MCB universiteitspanel Het MCB universiteitspanel is het panel gebruikt door de groep Marktkunde en Consumentengedrag van Wageningen Universiteit. Zowel onderzoekers als PhD en master studenten voeren wetenschappelijk onderzoek uit via dit panel (niet voor bedrijven). Deelnemers aan het MCB universiteitspanel worden via e-mail uitgenodigd om deel te nemen aan onderzoek. Dit onderzoek bestaat meestal uit een online vragenlijst die u thuis kunt invullen, en soms wordt u uitgenodigd om deel te nemen aan onderzoek op locatie. Voor een deel van de onderzoeken ontvangt u een beloning, en aan anderen kunt u op vrijwillige basis deelnemen. Dit is altijd duidelijk vantevoren aangegeven. U kunt zich inschrijven voor het MCB universiteitspanel als u 18 jaar of ouder bent. (1)

Schrijf hieronder uw e-mailadres als u zich wilt aanmelden:

Bedankt voor uw bijdrage aan het onderzoek! Klik op het pijltje naar rechts om de vragenlijst in te sturen.

Appendix B. Results Paired Samples T-Test

Comparison of the Choices logo and the Schijf van vijf.

| | Sig. (2-tailed) | Partial Eta Squared | 95% Confidence Interval of the Difference | | t | df |
|----------------|-----------------|---------------------|---|--------|--------|-----|
| | | | lower | upper | | |
| Perceived need | 0.047 (<0.05) | 0.013 | -0.314 | -0.002 | -1.997 | 298 |
| Understanding | 0.659 | 0.001 | -0.219 | 0.139 | -0.441 | 298 |
| Credibility | 0.000 (<0.05) | 0.072 | -0.657 | -0.275 | -4.798 | 298 |

Appendix C. Results Pearson Correlation

| | | Perceived need | understanding | credibility |
|----------------|---|------------------------|------------------------|-------------|
| Perceived need | Pearson correlation Sig. (2-tailed) N | 1 598 | | |
| Understanding | Pearson correlation Sig. (2-tailed) N | 0.634* 0.000 598 | 1 598 | |
| credibility | Pearson correlation Sig. (2-tailed) N | 0.659* 0.000 598 | 0.682* 0.000 598 | 1 598 |

*Correlation is significant at the 0.01 level (2-tailed).