ABSTRACT

During the last few decades the interest and demand for both healthy food and different beverages has increased the interest for healthy food and it is expected to continue increasing in the future. A strong reason for this is the desire among more and more people to live healthy and long lives. Because of this, the recent industry of functional foods has become increasingly popular as marketers aim to sell food products that can benefit a consumer’s health beyond a healthy or organic food products ability. “A functional food is, or appears similar to, a conventional food. It is part of a standard diet and is consumed on a regular basis, in normal quantities. It has proven health benefits…beyond its basic nutritional functions.” (Doyon and Labrecque 2008 pp.1147) In order for marketers to make the right marketing actions, a better understanding of consumer behaviour and attitudes towards functional food is needed. Without this information marketers will not be able to create effective marketing campaigns for functional food products. Consumer attitudes towards functional foods were looked at in four different factors/dimensions, reward, necessity, confidence and safety, and then each factors impact on consumer willingness to consume was measured.

Purpose - The purpose of the study was to investigate consumer’s attitudes on functional foods and their willingness to consume functional foods.

Method/Approach - A questionnaire was developed from a previous study (Lähteenmäki and Urala 2007) on consumer attitudes and their willingness to consume functional foods, using a combination of convenience sampling and judgment sampling.

Findings - The data confirmed the results from previous studies that consumer attitudes play a role in impacting consumer willingness to consume functional foods, but also that the results cannot be generalized on all functional food groups or types.

Conclusions – Each functional food category should be approached in a different way, from a marketing or advertising point of view and when marketing each functional food product. Different aspects e.g. Reward, necessity, confidence and safety should be highlighted for each individual food category in the packaging or advertisement to give the marketing strategy an advantage to increase consumer willingness to use that product. The study was found to collaborate with the previous studies conducted by Lähteenmäki and Urala (2007).

Key Words – Attitudes, Consumer attitudes, Functional foods, Consumer behaviour
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This study was carried out and conducted as part of our bachelor thesis during the spring of 2013. The entire process has been a great opportunity to learn and gain a deeper and more valuable experience into marketing and how to best gather large amounts of information and compiling it into a proper survey investigation. By choosing to do a quantitative study we had the opportunity to get practical experience of how to manage and process large amounts of information from several different sources. The project has also given us valuable experience in managing larger projects within a specific time frame and in a team environment. The project could not have been accomplished without the help of the following people; our tutor for the duration of the project, Michaela Sandell who has helped us and pointed us in the right direction, giving us the necessary feedback when needed throughout the semester. Also thanks to our examiner Satayesh Sattari for your valuable feedback and comments. We would also like to thank all the students who have given us thoughts and feedback during the thesis. Finally we would like to thank all the respondents who have been kind enough to give us some of their time to answer the questionnaire.

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Appendices

Appendix I: Questionnaire
1. Introduction

This chapter in short explains what functional food is. It goes on to discuss how there is a need for marketers to understand consumer attitudes and the factors that shape these attitudes. It also identifies and presents the research gap leading up to the purpose for the research project. The chapter ends with the delimitations being presented and the presentation of the outline of the paper.

1.1 Background

Hippocrates said “Let food be your medicine” Howlett (2008 pp.1)

During the last few decades the interest and demand for both healthy food and different beverages has increased (Ozen et al. 2012). A strong reason for this is the desire among more and more people to live healthy and long lives (Ibid). Consuming the right food and nutrients has been shown to contribute to a healthy and active lifestyle (Chen 2011).

According to Foddai et al. (2012), functional food is the synergy created when health and diet is combined together. So the combination of health and food (diet) is referred to as functional food. The definition for functional food varies between different regions and the existence of more than one regulatory body, or system, adds to the confusion of what functional food is (Agriculture and Agri-Food Canada 2009).
Doyon and Labrecque (2008 pp.1147) gives a broad definition to functional food: “A functional food is, or appears similar to, a conventional food. It is part of a standard diet and is consumed on a regular basis, in normal quantities. It has proven health benefits that reduce the risk of specific chronic diseases or beneficially affect target functions beyond its basic nutritional functions.”

According to Spence (2006) there are four different types of functional food products: Enriched products: products where the content of existing nutrients have been increased. Altered food: products were the nutrients that would normally not be found in the food have been introduced. Enhanced products: products were existing nutrients have been replaced with another nutrient. Fortified products: food products where the raw commodities in the product have been changed in order to give a new nutritional composition.

Since the concept of functional food started to take shape in Japan during the later half the 1980’s (Weststrate et al. 2002), the market for functional food has grown considerably and is now worth in excess of 24 billion dollars worldwide (Nutritionaloutlook 2011). The industry growth is expected to continue increasing in the range of 8-14% annually (Agriculture and Agri-Food Canada 2009).

1.2 Problem discussion

As the functional food market’s value has increased over the last decades (Nutritionaloutlook 2011) so too has the interest for healthy food during the last decade and it is expected to continue increasing in the future (Childs et al. 2011). In order for marketers to make the right marketing actions, a better understanding of consumer behaviour and attitudes towards functional food is needed (Chen 2011).

Understanding consumer attitudes, according to Tuorila (1997), is important as it strongly impacts how consumer’s food consumption patterns take shape and can be used to explain consumer’s food preferences. An attitude can be defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour” (Lähteenmäki and Urala 2004 pp.794). It is therefore beneficial for marketers working with functional food to have a good insight into consumer’s attitudes towards functional food (Chen
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2011). Schuntza et al. (2011) states that without this information marketers will not be able to create effective marketing campaigns for functional food products.

A problem with functional food is that attitudes differ from region to region, so studies can show different results depending on the geographical region it is conducted in (Carrillo et al. 2013; Schutz 2011). For example, a study made by Schutza (2011) showed the general awareness level among consumers, on functional food benefits, to be low. Whereas Ozen et al. (2011) states that it is commonly known among Swedish consumers what functional food is. Another study showed that even though consumers know what functional food is, they have trouble identifying the different types of functional foods and most consumers can not tell the difference between fortified products, enriched products, enhanced products and altered products, all variations of functional food (Spence 2006). Consumers do not think of functional foods as a homogeneous product group, this makes the attitudes that consumers hold differ greatly depending on what functional food product you ask about (Lähteenmäki and Urala 2007; Branderhorst et al. 2003). More studies are therefore needed for specific regions in order to get a better understanding of each regional market so that marketing efforts can be carried out with higher efficiency (Batterham 2008).

The confusion among consumers about functional food is not made easier by the fact that information in and around functional food has been hard to understand for consumers as it has been coming from multiple sources. Due to this, research and case development from previous studies made in Taiwan (Chen 2011) and Finland (Lähteenmäki and Urala 2007) have been used to show that in addition to demographic data, consumers attitudes on functional foods are also affected by the consumers lifestyles and that their lifestyles affects their willingness to use functional food products. In these studies, four areas of consumer willingness to consume functional foods are highlighted; Reward, Necessity, Confidence and Safety are considered (Chen 2011). It is these four areas that this study will focus on to achieve the most accurate levels of consumer’s willingness to consume functional foods.

Based on this previous research into attitudes towards functional food and the differentiation in consumer behaviour from region to region (Carrillo et al 2013; Schutza 2011) a research gap was found, allowing for the following purpose to be defined.
1.3 Purpose

To investigate consumer attitudes on functional food and their willingness to consume functional foods.

1.4 Outline of Thesis

The study is divided into six main chapters with the following overall disposition:

1. Chapter 1
   Background explaining the topic and problem discussion, concluding with the research purpose for the paper connecting to the hypothesis.

2. Chapter 2:
   A presentation and review on the existing literature relating to functional food. This chapter also includes a further and deeper explanation of the research gap that is the centre of the study.

3. Chapter 3:
   Consists of a presentation of the proposed research design and research questions that are being used for the papers investigatory purposes.

4. Chapter 4:
   Consists of a presentation and a justification for the methodology choices made and used throughout the study.

5. Chapter 5:
   An analysis of the gathered material is made as well as comparative discussion with regards to the material presented in the literature review.

6. Chapter 6:
   The conclusion of the study is presented by answering the research questions. Possible theoretical, managerial implications, limitations found in the study are also presented together with suggestions for further research.
1.5 Delimitations

The quantitative survey being used in this study is non-probability sampling, convenience sampling in combination with judgment sampling, so there are a few delimitations to mention. This study is intended to focus on a younger demographic around the ages of 18 – 29. The study has also allowed for some ages 30 – 39, with other age groups being excluded from the research. Further the study will be restricted geographically to Swedish consumers, available to the researchers in the town of Växjö. The study will also be restricted and conducted within the same frame as the study made by Lähteenmäki and Urala (2007).
2. Literature Review

In this chapter a review of the attitudes and attitudes in relation to functional food is made, with special focus given to reward from using functional food, the necessity of functional foods, the confidence in functional foods, the safety of functional foods and consumer willingness to consume functional foods.

2.2 Consumer behaviour

Consumer behavior is the process consumers go through in different stages of the consumer purchasing a product or service (Blythe 2008). Understanding consumer behaviour is important to marketers in order to develop successful marketing strategies regarding the pricing, product placement, design, positioning and promotion of the product (Askegaard et al 2006; Blythe 2008). Examining attitudes is a good way to get a better understanding of consumer’s behaviour in regards to a product, idea or service (Ajzen and Fishbein 2005).

2.3 Attitudes

An attitude is "a relatively enduring organization of beliefs, feelings, and behavioural tendencies towards socially significant objects, groups, events or symbols" (Hogg and Vaughan 2005 pp.150). An attitude can be defined as “a psychological tendency that is expressed by
evaluating a particular entity with some degree of favour or disfavour” (Lähteenmäki and Urala 2004).

Attitudes can be divided into four different functions. According to Askegaard et al. (2006) these are utilitarian, value-expressed, ego-defensive and a knowledge function, knowing which of these functions that affects consumers behaviour can be beneficial as this allows the marketer to enhance benefits connected to a specific type of attitude, while shaping the marketing communication strategy for a product. It is however possible for consumers to hold more than one type of attitude function but one is usually dominant (Askegaard et al. 2006; Argyriou and Melewar 2011).

Attitudes as explained previously can be used to understand consumer’s behaviour but can also be used to predict and understand how consumers will behave both now and in the future (Askegaard et al. 2006; Assael 1992). Measuring attitudes can be made with single items scales or multiple-item batteries; the most commonly used multi-items scale is the Fishbein model (Askegaard et al 2006; Sheth and Tuncalp 1975).

However, a number of problems can influence the use of attitudes in order to predict consumer behaviour, these include a model not perfectly adapted for the situation, factors might be outside of consumers ability or control, linking the measured attitudes to an actual behaviour and measuring outside of the correct content (Askegaard et al. 2006).

### 2.3.1 Attitudes Demographics

There are many different things that affect or have influence over attitudes.

### 2.3.2 Gender

Male and female respondents are usually found to have a statistical difference between their results, however the differences in the scale means between the two genders were found to be quite small (Lähteenmäki and Urala 2004). This will also be considered in the data analysis but the differences are expected to have a minimal effect on the study.
2.3.3 Age

Due to the respondents of this study being limited between the ages of 18 – 29, and in some cases 30 – 39, it is important to note the differences in how these demographics will perceive functional foods compared to other ages groups. According to Lähteenmäki and Urala (2004 pp.801) “Younger consumers seem to get less reward from using functional foods…they could also repair an unhealthy diet by using functional foods…and were also more positive towards adding medicine-like health effects in food products.” From this, it is expected that this will show through in the collected data for this research paper and will play a part in the data analysis and interpretation.

2.3.4 Attitudes and culture

Armstrong and Kotler (2011) define culture as the most basic thing shaping and forming a consumer’s wants and behaviour. Culture is, to a large degree, a set of rules that are learned and different cultures put emphasis on different rules and behaviors being obeyed and followed (Armstrong and Kotler 2011). Separating areas into geographical regions is one way of segmenting attitudes, as there can be differences between how different countries perceive and act towards a product, idea or service (Askegaard et al. 2006). Food is one of those things that are traditionally strongly linked to the geographical conditions in specific areas (Ibid). This is relevant to this study as there is a lack of functional food studies from different regions in Sweden.

2.3.5 Attitudes and functional foods

A consumer’s attitude towards functional foods can have a large effect on their decision to purchase, or not purchase, certain goods. According to Lähteenmäki and Urala (2007), when consumers make a food choice, it can be divided into three central factors: the food, the consumers, and environmental and economic issues.
The study conducted by Lähteenmäki and Urala (2007) did not show any big differences in attitudes towards functional foods between different age groups or genders. There have however been studies conducted in the past that has showed a significant difference in attitudes between male, females and different age groups (Carrillo et al. 2013; Niva 2007). Younger consumers might however have a more open mind to functional food making them a more interesting group, as they are more susceptible and likely to adopt new behaviour (Carrillo et al. 2013).

2.4 What is Functional food

Functional food:
As stated previously, Doyon and Labrecque (2008) say that “a functional food is, or appears similar to, a conventional food. It is part of a standard diet and is consumed on a regular basis, in normal quantities. It has proven health benefits that reduce the risk of specific chronic diseases or beneficially affect target functions beyond its basic nutritional functions.” It is also interesting to note that after further research it was found, according to Chen (2011), a functional food is a food that “affect[s] beneficially one or more target functions of the body, beyond adequate nutritional effects, in a way that is relevant to either an improved state of health and well-being and/or reduction of risk of disease.”

To give an example of some different types of functional foods, Lähteenmäki and Urala (2007) used a sample spread of different functional food groups in order to see if consumers recognized the different functional foods groups. These included blood pressure lowering milk drink, probiotic/stomach friendly yoghurt, juice with added calcium, oatmeal with added beta-glucan, snack bar with added fiber, sweets and chewing gums with xylitol and energy drinks. The results of the previous study showed that consumer’s recognition of the different product groups was between 73 - 97 percent depending on the product group.

It was also interesting to note that functional foods are not perceived as a homogeneous food group by consumers, instead consumers perceive it as several diverse food types and groups (Lähteenmäki and Urala 2007). According to Spence (2006) functional foods can be divided into four main categories fortified products, enriched products, enhanced products and altered products, all variations of functional food.
2.4.1 Factors influencing consumption of functional foods

There are differences in what affects consumer willingness to consume functional foods between different consumers (Kastenholz et al. 2008). Previous studies made in Taiwan (Chen 2011) and Finland (Lähteenmäki and Urala 2007) have shown that in addition to demographic data, consumers attitudes on functional foods are also affected by the consumers lifestyle and that their lifestyles affect their willingness to use functional food products. A model for measuring consumer willingness to buy functional food was developed by Lähteenmäki and Urala (2007). This model provided the researcher with a scale, high in reliability and validity in regards to consumer attitudes towards functional food (Chen 2011). The scale looks at four areas of consumer willingness to consume functional food (Ibid) Reward, Necessity, Confidence and Safety. Reward from using functional foods focuses primarily on health, mood and the general wellbeing that comes from using functional foods, the beneficial rewards must be linked to an individual that eats functional food as a way of taking better care of oneself. Necessity for functional foods revolves around consumers attitudes and how they perceive the need for functional food as something with medical properties. Confidence in functional foods provides a picture of how much confidence the consumers have in functional foods and whether or not they perceive functional foods as something that is safe and healthy to consume. Safety of functional foods focuses on determining the possible nutritional risks the consumers experience if, and when, they would consume functional food (Lähteenmäki and Urala 2007; Chen 2011).

2.4.2 Perceived reward from using functional foods

Reward from functional foods revolves around the idea that functional foods gives consumers an easier way to live a healthy lifestyle, focusing on the benefits that can be derived from consuming functional foods (Lähteenmäki and Urala 2007). Perceived reward from consuming functional food has the strongest influence on consumer willingness to consume functional food products (Chen 2011) and consumers are more inclined to buy functional food if they understand the products health benefits and rewards (Carrillo et al. 2013).
2.4.3 Experiment Necessity from using functional foods

Necessity from functional foods is about how consumers perceive the need for functional foods as a medicine (Chen 2011). Necessity for functional food is mainly concerned about if consumers feel that functional food is necessary for society (Lähteenmäki and Urala 2007).

2.4.4 Confidence in functional foods

Consumers that have a high degree of confidence in functional foods are more willing to consume them (Chen 2011). Confidence in functional food is about whether consumers think that functional foods can be used in order to promote their health, the level of confidence consumers have in functional foods and whether or not they perceive functional foods as something that is safe and healthy to consume (Lähteenmäki and Urala 2007). Having the information regarding a product come from more than one source, describing the product as good for you, affects consumers’ confidence that the product offers and/or delivers the benefits stated (Boecker et al. 2009).

2.4.5 Perceived safety from functional food

Consumers who believe that functional food is safe are more willing to consume functional foods (Chen 2011). Safety of functional foods is concerned with how consumers perceive the possible risks associated with consumption of functional foods (Lähteenmäki and Urala 2007).

Chapter summary

In this chapter the importance of understanding consumer behaviour was explained, the importance and the role of consumer attitudes, functional foods and how attitudes and functional foods connect were explained. Ending with a description of the four factors that are influencing consumer attitudes on consumer behaviour.
3. Research Model and Hypotheses

The literature presented in the previous chapters concerning attitudes towards functional foods, presented the four different areas of attitudes influencing consumers’ willingness to consume functional foods developed by Lähteenmäki and Urala (2007). In this chapter a presentation of the proposed research models hypotheses that serves as a basis for this investigation is presented.

3.1 Proposed Research Model

The purpose of this study is to gain a better understanding of consumer attitudes in the areas of reward, necessity, confidence and safety in relation to how functional food affects consumers’ willingness to consume functional foods. The connection between these different attitude areas was discussed in the previous chapter. Figure 1 below illustrates the proposed research model.

The model illustrates the four different attitude categories, reward, necessity, confidence and safety and how they influence consumers’ willingness to consume functional foods.
3.2 Hypothesis

Created in order to answer the research purpose for the study and developed during the process of the literature review, the following research hypotheses were formulated. The overall purpose of this study is to investigate how the four different attitude areas affect consumers’ willingness to consume functional foods. One hypothesis was formulated for each attitude area; reward, necessity, confidence and safety also showed in figure 1 proposed research model.

**Hypothesis ONE:**
Consumers that experience a high degree of reward from functional foods are more willing to consume functional food.

**Hypothesis TWO:**
Consumers that see a higher necessity for functional foods have a higher willingness to consume functional foods.

**Hypothesis THREE:**
Consumers with a high degree of confidence is going to present a higher willingness to consume functional foods.
Hypothesis FOUR:
Consumers that experience more safety with functional foods are more willing to consume functional foods.

3.3 Chapter summary
In this chapter a research model created from the literature review in chapter two was presented. From the research model four hypotheses were developed to be used in order to allow for the purpose of the study to be met.
4. Methodology

In this chapter justification argumentation choices and methodology approaches conducted in
the study are mentioned. Short argumentation on deductive vs. inductive and reasons why the
choice was made to use a quantitative approach are discussed. Following that, the data
collection methods and description of the sample and the methods used for analysing the
collected data are described.

4.1 Research approach

4.1.1 Deductive vs. Inductive

Inductive and deductive are the two most common research approaches in the field of research
methodology (Bryman and Bell 2005). An inductive approach uses the data collected by the
researcher as a baseline for formulating new theoretical theories (Ibid). Deductive approaches
use already existing theories as a starting point, and then test these theories and the hypostases
formulated around them on empirical data (Ibid). Deductive theory is used to examine the
connections and relationships between theory and the studied field (Esaiasson et al. 2010).

The purpose in this study is to test previously conducted research, the result being that this
study is using a deductive research approach to test and collaborate, or disapprove, the results
from previous studies.
4.1.2 Quantitative vs. Qualitative

The main difference between quantitative and qualitative research is the procedure used to collect it (Ghauri and Gronhaug 2005). Normally, quantitative research is used as a form of controlled measurement, using statistical data collected from a sample pool to develop hypotheses (Ibid). Qualitative research takes a more philosophical approach, asking questions such as why or how to develop a better understanding of people’s perspectives (Ibid).

Quantitative research is considered to be a more traditional way of conducting research and measuring data. The data is collected from a random sample pool and is then dissected to shape, and show, what the data and variables have found (Tewksbury 2009). Qualitative research techniques offer more insight into the importance of understanding; providing consumers with a complete vision of certain situations, and a greater understanding to accept different concepts (Ibid). This is usually not done by collecting data in the form of numbers and creating graphs, instead phrases and words are used to describe specific situations showing the correlation and differences between concepts and problems (Huberman and Miles 1994).

The purpose of quantitative studies is to increase the understanding of fundamental reasons and motivations, to offer an understanding into the situation of a problem, generating thoughts and/or hypotheses for later quantitative research to expose prevalent drifts in thought and opinion (Huberman and Miles 1994).

The reason why a quantitative method has been chosen for this study is because the use of numerical data is the best way to represent and support the hypotheses developed in the research, conducted in this paper. It is also the best way of obtaining reliable data from a random sample pool. As the subject of functional food can be confusing to a first-time reader, the use of quick questions followed by a numerical opinion is the safest way to ensure the data collected is as accurate as possible. The use of a qualitative study has been deemed unnecessary to support the research in this paper due to the large sample pool being used (100 +).
4.2 Research Design

The research design is the essential link that helps connect the empirical data in a study to the research questions and the conclusion (Yin 2003). A good research design helps the researcher to avoid a situation where the collected material does not answer the initial research question(s) (Ibid). Yin (2003) mentions three different types of purposes that a study can be divided into descriptive, exploratory and explanatory.

Descriptive research designs are used to help develop general overviews into a study-field of interest (Bryman and Bell 2005). It is important that descriptive research designs be clear about what is being studied and measured and which population the study is focused around (Ibid). Results and conclusions from descriptive studies are subject to questioning and to different interpretations (Ibid).

Exploratory research design is focused around observing already existing states and creating a deeper understanding and insight about the research problem or the process (Yin 2003). To conduct exploratory research a good ability to observe and being flexible in and around different types of situations is often required (Phopalia 2010).

Explanatory research design is centered on, answering the question why this often involves seeing connections and correlations between fixed variables in the study (Yin 2003). Explanatory studies examine the correlation between different variables in order to investigate how the variable is dependent on the other variables (Esaiasson et al 2010).

For the purpose of this study an explanatory research approach was chosen. As the aim of the study is to get a better understanding of the attitudes consumers have on functional foods by using a model developed by Lähteenmäki and Urala (2007) to collected the data, the results from their study in Finland is also used to formulate four different hypotheses.

4.3 Data sources

Explorations of methods refer to logical, intensive and methodical gathering of data for the tenacity of gaining information from them, to either try to solve or answer a specific research problem or question (Ghauri and Grønhaug 2005). Data can originate from two different types
of sources and are referred to as primary and secondary data (Christensen 2001; Kumar 1996). Primary data is collected specifically for the study at hand (Esaiasson et al. 2010). Secondary data is data collected by other sources e.g. researchers, organizations and area specialists (Halvorsen 1989; Bryman and Bell 2005). Secondary data is more difficult and complicated to use as the data has not been custom generated for a specific study (Esaiasson et al 2010). According to Esaiasson et al. (2010) the only time that secondary data can be used to it fullest potential is in a follow-up study.

For the purpose of this study primary data will be collected as previously collected data cannot describe the current situation and attitudes among Swedish consumers in relation to functional food. Secondary data from other studies will however be used to formulate the hypotheses investigated in the study but cannot be used to describe the current attitudes among Swedish consumers.

4.4 Research strategy

A research strategy that is well constructed helps the researcher to focus their efforts and answer the research questions in a more effective and precise way. As focus and direction of the research is put into the right areas (Yin 2003). Yin (2006) brings up three different conditions factors and five types of different methods to be used when the researcher chooses research strategy. The conditions; ONE, form of research question, TWO, requires control of behavioural events, THREE, focus on contemporary events the five different research strategies that connects to these are experiment, survey, archival analysis, history and case study, see table 1.
Table 1: Strategy situation table (Adapted from Yin 2003 pp.5)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of research question?</th>
<th>Requires control of behavioral events?</th>
<th>Focus on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>how, why?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>Who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History</td>
<td>how, why?</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case study</td>
<td>how, why?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

By reading the table the researcher can determine which type of strategy is best suited for the purpose of the study. For example a study that is focusing on the questions how and why, requires no control over behavioural events and is focused around a contemporary event is best suited to using a case study strategy (Yin 2003).

The purpose of this study is to find out what consumers attitudes are towards functional food, this gives us the choice of using either survey or archival analysis, but as the research is focused towards current attitudes it is difficult to use previously done research to answer the purpose. Survey was deemed a more suitable choice of strategy.

Surveys are often based on deductive and exploratory approaches, these types of research approaches are good when the researcher is trying to measure or look at large quantities of data in larger sample pools (Bryman and Bell 2005). The arguments above are used as the justification for the choice of survey as a strategy.

4.5 Data collection methods

There are several different methods that can be used in order to collect data. The most commonly used methods are interviews, focus groups, surveys, observations (Bryman and Bell...
2005; Ghauri and Grønhaug 2005) and content analysis (Bryman and Bell 2005). When conducting qualitative research participating in observations, focus groups and in-depth interviews are the most commonly used forms of data collection (Ibid). In quantitative studies the more commonly used data collection methods are surveys, structured interviews, structured observation and content analysis (Ibid). As a result of the previous discussions and argumentations for a quantitative research approach, only the quantitative methods will be described and argued in the following section (Ibid).

The advantages of surveys are they can be handed out to a large number of individuals in a short period of time, saving researchers time and money (Leed and Ormrod 2001). Also, people are more honest when answering the questions without worrying about the contentious problem because their answers are unidentified (Ibid). They can also have disadvantages; it is common for people that are handed questionnaires to not return them back, making those that do the first selected sample (Ibid).

Sometimes questionnaires are structured into a checklists or rating scales. In this way it can help shorten and measure an individual’s actions and attitudes (Leed and Ormrod 2001). A checklist is a list of actions, features, or other specific individuals the researcher is looking for such as a certain demographic or physical feature (Ibid). A rating scale is when an action needs to be kept in a constant evaluation, which is also known as a Likert scale (Ibid).

In a designed interview, a researcher asks a set of questions and nothing more (Leed and Ormrod 2001). Face-to-face interviews have a different advantage of allowing the researcher to create rapport with possible members, which can increase their willingness to participate. Interviewing produces a high response rate in study research and can also give an advantage to highlight unclear answers for follow-up information (Leed and Ormrod 2001).

Observation method is most likely to be used in special studies related to behavioural sciences. In a way everyone detects what is around us, but in this case, this kind of observation is not a scientific observation (Kothari 2004). The way that an observation becomes a scientific tool, and the method to use it as data collection for a research, is when it gives a formulation research purpose, then it is scientifically planned and noted as valid and reliable (Ibid).
Content-analysis is “based on analysing the contents of documentary materials such as books, magazines, newspapers and contents of all other verbal materials which can be either spoken or printed” (Kothari 2004 pp.110)

For the purpose of this study the choice was made to conduct surveys/develop a questionnaire. This was due to the need for large amounts of primary data being essential with none of the other data collection methods giving the possibility to look at the attitudes of such a large group. Another crucial factor for choosing surveys was that previous studies also examining consumer’s attitudes towards functional foods used surveys/questionnaires.

4.6 Data collection method/procedure

The data collection process was conducted by the researchers themselves going out to public areas and personally asking would be respondents, within the sample frame, if they could consider filling out a survey form. While collecting the data, the researchers monitored the male and female ratio to ensure that there was an even distribution between the sexes to make sure the data was non-bias. A decision was also made by the researchers to provide minimal, additional verbal information about functional food to the respondent to ensure all the respondents got the same information and answered the questions under the same conditions. The questionnaires were checked after each respondent completed them to make sure that no questions were skipped or filled out incorrectly.

4.7 Sampling

Sampling is done to find information about a whole population by inspecting only a part of it (Kothari 2004). There are two main methods of doing sampling; non-probability and probability sampling (Ghauri and Grønhaug 2005). Non-probability sampling can, according to Ghauri and Grønhaug (2005), be conducted either by a convenience sample, a judgment sample or a quota sample. Because of the requirements that need to be met in order to do a probability sampling; giving all the units in the population the same chance of being looked at (Ghauri and Grønhaug 2005; Bryman and Bell 2005). Probability sampling has not been selected as a method because the level of resources available does not allow for a study of this size, within the timeframe, to be conducted.
Among the different types of non-probability sampling, convenience sampling in combination with judgment sampling are the best suited for the purpose of this study as it gives the researchers the possibility to try and shape the tested units so that they make up a good representation of the studied population (Ghauri and Grønhaug 2005). Ghauri and Grønhaug (2005 pp.148) say that a problem with using non-probability sampling is “not valid for statistical testing of hypotheses or drawing inference of larger populations”.

4.7.1 Sample frame

It is important to have a sample frame that is representative of the population that the research is focusing on (Ghauri and Grønhaug 2005). The sample frame are the units in the population from where the sample is being selected for testing (Bryman and Bell 2005; Ghauri and Grønhaug 2005; Kothari 2004) Samples frames should be created in order to work well together with the purpose, delimitations, theoretical material, as well the research questions in the study (Huberman and Miles 1994). The sample was derived from the part of the populations that was available to the researchers conducting this study and as such people between the ages of 18-29, and in some cases 30-39 were selected. The sample frame clearly emerged while reviewing the different hypotheses stated in the study in combination with the delimitations.

4.7.2 Sample selection

Quantitative research usually has a big sample size but varies depending on whether it is a national or regional covering study as different sizes are needed to get a good representation of the population (Ghauri and Grønhaug 2005). There is a direct correlation between the size of the sample and the accuracy of the results, the bigger the sample is the more accurate the results are and the smaller the sampling error (Bryman & Bell 2005). Around 1000 respondents increases the surveys precision and the sample errors decline, but having a 1000 respondents takes time and costs more money (Ibid).

With the intention of being able to conduct a good analysis and put the collected data in a good context, the target number of collected questionnaires from the respondents was set to at least
150. Getting 150 respondents was seen as a feasible number of questionnaires to be able to gather by the researchers, with the resources available to them.

The chosen sample for the intended research was males and females between the ages of 18-29, and in some cases 30-39, as they were the most easily accessible to the researchers in the geographical vicinity of Växjö, Sweden.

**4.8 Data collection Instrument**

For the purpose of measuring consumer’s attitudes towards functional foods a self-completion questionnaire was used. This gave the respondents the opportunity to anonymously post their responses to the statements in the questionnaire. Self-completion questionnaires are according to (Bryman and Bell 2005; Ghauri and Gronhaug 2005) an effective tool to collect information on attitudes, opinions and cause and effect relationships.

Negatives with using a self-completion questionnaire can be a low response rate and not filled out completely (Bryman and Bell 2005). This was addressed and countered by reviewing the questionnaires directly after the respondent had filled it out. The questionnaire used for the purpose of this study was developed and presented in a study made by Lähteenmäki and Urala (2007) which in turn were developed in a process by Arvola et.al (2003); Lähteenmäki and Urala (2003); Lähteenmäki and Urala (2004). The questions in the questionnaire used from Lähteenmäki and Urala (2007) were used with no revisions or alterations in order to be assured that the results could be compared as best as possible.

**4.8.1 Operationalization and measurable variables**

Operationalization is the way the researcher codes theoretical concepts into more easily understandable and measurable concepts (Esaiasson et al. 2010). Operationalization is based on the theoretical framework used in the study that is needed to answer the research questions and the purpose (Ibid). Translated concepts are then used in the construction of the interview guides or survey guides (Ibid). A good validity between the theoretical and operational definitions is necessary in order to avoid misunderstandings and the collection of the wrong data (Ibid).
Esaiasson (2010) says that three things are needed in order to have a good operationalization process; relevant questions in the questionnaire for the research questions/purpose so that they measure what is intended to be measured, what is measured must be connected and encompassed in the research question and be relevant for the purpose of the study, there must also be a coherent overall cohesion between the measured variables in the study so that all the variables work together and cover the entirety of the research question/s.

The constructs used were found in the literature review, and has served as dividers for the different variables measured. The research done by Lähteenmäki and Urala (2007) has served as a base for the operationalization process. Statements used in the questionnaire for the purpose of this study also come from Lähteenmäki and Urala (2007) the outcome being that the overall structure scheme for this study has been operationalized with help of Lähteenmäki and Urala (2007) study. Some adaptations of the language has been made in some places in order improve the respondents understanding of the statement.

The construct tables below were developed in order to better illustrate the connections between the different statements used in the questionnaire and the literature review.

**Construct**

R = Question with a negative statement (the data collected were reversed before the data were analysed)

**Reward from using functional foods**

<table>
<thead>
<tr>
<th>Question No (Code)</th>
<th>Measures</th>
<th>Theoretical construct from question</th>
</tr>
</thead>
<tbody>
<tr>
<td>REW Q1</td>
<td>Reward</td>
<td>(Lähteenmäki and Urala 2007)</td>
</tr>
<tr>
<td>REW Q2</td>
<td>Reward</td>
<td>Ibid</td>
</tr>
<tr>
<td>REW Q3</td>
<td>Reward</td>
<td>Ibid</td>
</tr>
<tr>
<td>REW Q4</td>
<td>Confidence</td>
<td>Ibid</td>
</tr>
<tr>
<td>REW Q5</td>
<td>Reward</td>
<td>Ibid</td>
</tr>
<tr>
<td>REW Q6</td>
<td>Reward</td>
<td>Ibid</td>
</tr>
<tr>
<td>REW Q7</td>
<td>Reward</td>
<td>Ibid</td>
</tr>
<tr>
<td>REW Q8</td>
<td>Reward</td>
<td>Ibid</td>
</tr>
<tr>
<td>REW Q9</td>
<td>Reward</td>
<td>Ibid</td>
</tr>
<tr>
<td>REW Q10</td>
<td>Necessity</td>
<td>Ibid</td>
</tr>
</tbody>
</table>
### Necessity for functional foods

<table>
<thead>
<tr>
<th>Question No (Code)</th>
<th>Measures</th>
<th>Theoretical construct from question</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEC Q1 R</td>
<td>Necessity</td>
<td>(Lähteenmäki and Urala 2007)</td>
</tr>
<tr>
<td>NEC Q2 R</td>
<td>Necessity</td>
<td>Ibid</td>
</tr>
<tr>
<td>NEC Q3 R</td>
<td>Necessity</td>
<td>Ibid</td>
</tr>
<tr>
<td>NEC Q4 R</td>
<td>Necessity</td>
<td>Ibid</td>
</tr>
<tr>
<td>NEC Q5 R</td>
<td>Necessity</td>
<td>Ibid</td>
</tr>
<tr>
<td>NEC Q6 R</td>
<td>Necessity</td>
<td>Ibid</td>
</tr>
<tr>
<td>NEC Q7 R</td>
<td>Necessity</td>
<td>Ibid</td>
</tr>
<tr>
<td>NEC Q8 R</td>
<td>Safety</td>
<td>Ibid</td>
</tr>
<tr>
<td>NEC Q9 R</td>
<td>Necessity</td>
<td>Ibid</td>
</tr>
</tbody>
</table>

### Confidence in functional foods / Safety of functional foods

<table>
<thead>
<tr>
<th>Question No (Code)</th>
<th>Measures</th>
<th>Theoretical construct from question</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON Q1</td>
<td>Confidence</td>
<td>(Lähteenmäki and Urala 2007)</td>
</tr>
<tr>
<td>CON Q2</td>
<td>Safety</td>
<td>Ibid</td>
</tr>
<tr>
<td>CON Q3</td>
<td>Confidence</td>
<td>Ibid</td>
</tr>
<tr>
<td>CON Q4</td>
<td>Confidence</td>
<td>Ibid</td>
</tr>
<tr>
<td>CON Q5 R</td>
<td>Safety</td>
<td>Ibid</td>
</tr>
<tr>
<td>CON Q6 R</td>
<td>Safety</td>
<td>Ibid</td>
</tr>
<tr>
<td>CON Q7 R</td>
<td>Safety</td>
<td>Ibid</td>
</tr>
</tbody>
</table>
### Willingness to use functional foods

FF = Functional food  
PH = Product with positive health image (=reference product)

<table>
<thead>
<tr>
<th>Question No</th>
<th>Type of Food</th>
<th>Measures</th>
<th>Theoretical construct from question</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIL Q1</td>
<td>FF</td>
<td>Willingness</td>
<td>(Lähteenmäki and Urala 2007)</td>
</tr>
<tr>
<td>WIL Q2</td>
<td>FF</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
<tr>
<td>WIL Q3</td>
<td>FF</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
<tr>
<td>WIL Q4</td>
<td>FF</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
<tr>
<td>WIL Q5</td>
<td>FF</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
<tr>
<td>WIL Q6</td>
<td>FF</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
<tr>
<td>WIL Q7</td>
<td>FF</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
<tr>
<td>WIL Q8</td>
<td>FF</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
<tr>
<td>WIL Q9</td>
<td>PH</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
<tr>
<td>WIL Q10</td>
<td>PH</td>
<td>Willingness</td>
<td>Ibid</td>
</tr>
</tbody>
</table>

### Recognizability

FF = Functional food  
PH = Product with positive health image (=reference product)

<table>
<thead>
<tr>
<th>Question No</th>
<th>Type of Food</th>
<th>Measures</th>
<th>Theoretical construct from question</th>
</tr>
</thead>
<tbody>
<tr>
<td>REC Q1</td>
<td>FF</td>
<td>Recognize</td>
<td>(Lähteenmäki and Urala 2007)</td>
</tr>
<tr>
<td>REC Q2</td>
<td>FF</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
<tr>
<td>REC Q3</td>
<td>FF</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
<tr>
<td>REC Q4</td>
<td>FF</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
<tr>
<td>REC Q5</td>
<td>FF</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
<tr>
<td>REC Q6</td>
<td>FF</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
<tr>
<td>REC Q7</td>
<td>FF</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
<tr>
<td>REC Q8</td>
<td>FF</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
<tr>
<td>REC Q9</td>
<td>PH</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
<tr>
<td>REC Q10</td>
<td>PH</td>
<td>Recognize</td>
<td>Ibid</td>
</tr>
</tbody>
</table>
4.8.2 Questionnaire design

The survey that has been used comprises of five sections, which includes a total of 46 questions. The first section includes a brief introduction to functional foods, using the definition mentioned earlier in the report, followed by three questions asking the respondent for general information about their sex, age and education level. This has been done to help categorise the results after that data has been collected.

The next four sections of the questionnaire focus on the important consumer attitude factor/dimensions: Reward, Necessity, Confidence and Safety as well as Willingness to purchase functional foods and consumers Recognition of function products.

As previously mentioned, the questionnaire used for the purpose of this study has been developed and presented using a study made by Lähteenmäki and Urala (2007). In this survey the use of a Likert Scale (1-7) was done. This is helpful for the research in this report, as it makes sure “there is a middle point on the scale to allow for a neutral response” (Bryman and Bell 2005). The use of a numerical value to the respondents answer also ensures there is an even spread of data to present. The Likert Scale of 1-7 was used for every section with the exception of Recognition which uses a Likert scale of 1-5. This was done to mimic the previous study made by Lähteenmäki and Urala (2007). It is also important to note that some of the questions have a negative approach for the respondents and to consolidate these questions the results will be reversed to match up with the positive questions; see section 4.8.1 construct for the list of negative associated questions.

4.8.3 Pretesting

According to Yin (2003), Ghauri and Grønhaug (2005) and Bryman (2012) pre testing is preferable to do in preparation for the data collection. By doing a pretesting of the questions/questionnaire problems with the questions can be identified by the researcher, problems could be, difficulties in understanding the questions, if enough information has been provided to the respondent to allow them to answer the questions and if the information is too sensitive (Ghauri and Grønhaug 2005; Bryman 2012). Doing a pre testing of the
questions/questionnaire can help improve the quality making the questionnaire more coherent and flow better than it would without the pretesting (Bryman 2012).

For the purpose of improving and refining the questionnaire a pre-test was carried out on a small sample of respondents within the sample frame. This allowed the researchers to get feedback on the language used, if the questions could be understood. The questionnaire was also discussed and showed to our tutor in order to make sure the operationalization of the theoretical concepts had been made in a comprehensive way. No adaptation was deemed necessary after the pretesting and the survey was used in its original form.

**4.9 Data Analysis**

Quantitative research usually requires the use of computing tools in order to compile the collected data in a meaningful way and to put it all into a context that relates back to the research (Bryman and Bell 2005). For the purpose of this study this is going to be done by using the program SPSS. The measurements that are used and looked at in this study are the same that were used in the study conducted by (Lähteenmäki and Urala 2007). For the purpose of that study Lähteenmäki and Urala (2007) used mean, statistical deviation, factor loading, variance, Cronbach’s alpha and Pearson product-moment correlation coefficient to analyse the collected data.

Mean is the combined value of all the values divided with the total number of values, the average value of all numbers (Bryman and Bell 2005). Statistical deviation is a measurement of how much the data deviates from the mean or the expected. Low values indicates that the numbers are close to the calculated mean, high values indicates a large spread from the mean and more dispersed values (Ibid).

Cronbach’s alpha was used to test the internal reliability of the results from the survey (Bryman and Bell 2005). Cronbach’s alpha is a way to measure the internal reliability in multi-option scales employed in surveys and questionnaires by summarizing the results from a group of questions that measures a specific field (Ibid). Cronbach’s alpha coefficients range from 0 to 1, 1 being a perfect score indicating a perfect internal reliability and 0 indicating no internal reliability at all (Ibid). Numbers above 0.8 are considered to indicate a good internal reliability (Bryman and Bell 2005). However Yusoff (2012) consider alpha levels ranging between 0.5
and 0.7 to be at an acceptable level of internal consistency and levels above 0.7 to be good. For the purpose of this study alpha numbers as low as 0.5 will be accepted.

Pearson’s correlation measures the correlation between two variables; values could vary between +1 and -1, minus one indicating that no conclusive correlation between the two variables could be found.

Regression analysis is a method of measuring how one independent variable or dimension impacts/affects a dependent variable/dimension (Cohen et al. 2011). Regression analysis is computed in order to get the R squared value, the Beta value and the significant level values (Ibid). The Beta value explains how much the independent variable influence the dependent variable that is being studied, a higher Beta value means that the independent variable/dimension has a higher degree of impact on the dependent variable (Ibid).

Significance (p) is a measurement of how well the data could be generalized for the population outside the sample that has been tested. Significance (p) levels above 0.1 is not considered high enough and do not support the hypotheses (Bryman and Bell 2005). Significant scores between 0.1 and 0.05 are significant to 90% and support a hypothesis, scores between 0.05 and 0.01 is significant to 95% and supports a hypothesis and significant scores lower than 0.01 is significant to 99% and supports a hypothesis (Cohen et al. 2011).

Factor analysis is a method of measuring how well indicators cluster together and how well they measure the same factor/dimension, it is used in order to reduce the number of variables the researcher have to work with. The technique is often employed in cases where Likert scales have been used (Bryman 2012). The factors developed by Lähteenmäki and Urala (2007) were used for the purpose of this study, so the same cut-off points that they used 0.3 for each factor was used in this study in order to keep the developed factor targeted towards reward, necessity, confidence and safety.

4.10 Quality/ Reliability and validity

When conducting research it is important to take measures in order to ensure the quality and trustworthiness of the research and that it is based on good and reliable material (Yin 2003). Quality in research is measured with the help of two different concepts, validity and reliability (Ibid). Validity is an overall measurement of; to what degree a study measures what the
METHODOLOGY

purpose of the study aims to investigate. Reliability is a measurement of the stability and trustworthiness of a concept (Ibid). Conducted research needs to both have a high validity as well as high reliability in order to be regarded as trustworthy (Ghauri and Grønhaug 2005). To ensure the quality of the research conducted, content validity, construct validity, external validity and reliability were employed and used for the purpose of this study.

4.10.1 Content validity

Content validity, also sometimes referred to as face validity, refers to how well the study measures what is intended to be measured in the study (Ghauri and Grønhaug 2005). Content validity easily could be addressed by letting a person with a good understanding of the research field to review the questionnaire (Ibid).

In order make sure that the content validity is high in our research, the operationalization scheme and the questionnaire were sent out to an authority on attitudes. The received feedback helped to improve the quality of the questionnaire and the overall content validity of our research.

4.10.2 Construct validity

Having good construct validity is an important aspect as it is about making sure that the conducted research is adequately concerned with and measures the intended research area as well as being understood and interpreted by the respondents in the way intended (Ghauri and Grønhaug 2005).

In order to satisfy the need for high construct validity the survey questions and the overall outline of the questionnaire have been pre-tested. The questionnaire has been reviewed by other students and our supervisor at Linnaeus University. A pre-testing of the questionnaire has also been done on a small sample of respondents with in the sample frame.
4.10.3 External validity

External validity is about to which degree a conducted study can be generalized to different contexts, situations, settings and time, either within the population or outside (Ghauri and Gronhaug 2005). A high external validity means that the result can easily be generalised too many different contexts; in contrast a low external validity means that the result is restricted to a specific situation (Neuman 2003). In quantitative studies it is important to be able to generalise the results to groups outside the selected tested sample. The results from a quantitative survey should also be the same if it is repeated in the same sample frame (Ghauri and Gronhaug 2005).

In order to have as high external validity as possible the respondents in the study have been chosen by a random convenience selection, making the results from the study generalisable as possible.

4.10.4 Reliability

Reliability is concerned about the repeatability of the research conducted. High reliability means the conducted research can be repeated by another researcher over and over with the same result (Ghauri and Gronhaug 2005). The purpose of reliability is to make sure that the false and skew answers are as few as possible (Ibid). For a study to have a high reliability all the procedures and actions taken need to be thoroughly documented in order to enable other researchers to replicate the study (Yin 2003).

To give the research as high reliability as possible all the different actions taken during the research process have been described thoroughly and argued for in the methodology chapter and the different subchapters.
4.11 Chapter summary

In this chapter different choices regarding methodology have been made. The reasons for doing so have also been motivated. In the table below an overview of the entire chapter is presented.

Table 2: Methodology summary

<table>
<thead>
<tr>
<th>Research Methodology</th>
<th>Deductive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research approach</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Research Design</td>
<td>Explanatory</td>
</tr>
<tr>
<td>Data Sources</td>
<td>Primary</td>
</tr>
<tr>
<td>Research Strategy</td>
<td>Surveys</td>
</tr>
<tr>
<td>Data Collection Method</td>
<td>Questionnaires</td>
</tr>
<tr>
<td>Instrument Sampling</td>
<td>Non-probability sampling, convenience sampling in combination with judgment sampling</td>
</tr>
<tr>
<td>Data Analysis Method</td>
<td>Cronbach’s alpha, factor analysis, Pearson’s correlation, Statistical deviation and regression analysis</td>
</tr>
<tr>
<td>Quality Criteria</td>
<td>Validity and Reliability</td>
</tr>
</tbody>
</table>
5.0 Data analysis

In this chapter the primary data collected from the surveys are presented and analysed, tables are used to present the gathered data. The data is interpreted by using the theories presented in previous chapters.

5.1 Demographics

For the purpose of this study the researchers set a sample size of at least 150 respondents. The respondents were acquired through face-to-face delivery, which resulted in a 100% response rate and a total of 156 respondents. The sample was divided with 53.8% male and 46.2% female respondents. 92.9% of the respondent’s ages were 18-29; the remaining 7.1% of the respondents were between the age of 30 and 39 years old. A high degree of the respondents (94.3%) reported that they had some university education with the remaining 5.7% of the sample reporting they had a high school education and none of the respondents reporting that they only had a Basic 9 year’s education. A summary of the demographic numbers are presented in table 3.

Table 3: Demographics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>53.8</td>
</tr>
<tr>
<td>Female</td>
<td>46.2</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>92.9</td>
</tr>
<tr>
<td>30-39</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>5.7</td>
</tr>
<tr>
<td>University</td>
<td>94.3</td>
</tr>
</tbody>
</table>
5.2 Factor Analysis

A factor analysis was conducted on the gathered material in order to make sure the variables that make up the four different factors/dimensions were connected to the other variables inside that factor. Variables corresponding to a lesser degree than 0.3 (Lähteenmäki and Urala 2007) have been excluded from the data analysis. In the reward factor/dimension all statements came in above the cut-off point, in the necessity factor/dimension statement NECQ5 showed 0.2, a lower value than 0.3 and was therefore excluded from the factor and not used any further in the data analysis, see table 4. The confidence factor/dimension had one statement within the factor that showed a lower value than 0.3 with REWQ4 showing 0.26. In the safety factor/dimension CONQ6 loaded 0.12 and was also excluded from the data analysis, see table 4.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>St. dev.</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>REWQ3 Functional foods help to improve my mood</td>
<td>4.5</td>
<td>1.6</td>
<td>0.831</td>
</tr>
<tr>
<td>REWQ2 My performance improves when I eat functional food</td>
<td>4.7</td>
<td>1.6</td>
<td>0.807</td>
</tr>
<tr>
<td>REWQ1 The idea that I can take care of my health by eating functional foods gives me pleasure</td>
<td>4.9</td>
<td>1.6</td>
<td>0.787</td>
</tr>
<tr>
<td>REWQ6 I can prevent disease by eating functional foods regularly</td>
<td>4.4</td>
<td>1.7</td>
<td>0.757</td>
</tr>
<tr>
<td>REWQ8 Functional foods make it easier to follow a healthy lifestyle</td>
<td>4.6</td>
<td>1.7</td>
<td>0.678</td>
</tr>
<tr>
<td>REWQ5 Functional foods can repair the damage caused by an unhealthy diet</td>
<td>4.3</td>
<td>1.8</td>
<td>0.671</td>
</tr>
<tr>
<td>REWQ7 I am prepared to compromise on the taste of a food if the product is functional</td>
<td>3.7</td>
<td>1.7</td>
<td>0.578</td>
</tr>
<tr>
<td>REWQ9 I actively seek out information about functional foods</td>
<td>3.0</td>
<td>1.9</td>
<td>0.556</td>
</tr>
<tr>
<td>NECQ4 For a healthy person it is worthless to use functional foods</td>
<td>4.8</td>
<td>1.9</td>
<td>0.758</td>
</tr>
<tr>
<td>NECQ3 Functional foods are a total sham</td>
<td>5.4</td>
<td>1.4</td>
<td>0.754</td>
</tr>
<tr>
<td>NECQ1 Functional foods are completely unnecessary</td>
<td>5.5</td>
<td>1.5</td>
<td>0.703</td>
</tr>
<tr>
<td>NECQ2 The growing number of functional foods on the market is a bad trend for the future</td>
<td>5.0</td>
<td>1.5</td>
<td>0.580</td>
</tr>
<tr>
<td>NECQ9 It is pointless to add health effects to otherwise unhealthy foods</td>
<td>4.0</td>
<td>1.9</td>
<td>0.458</td>
</tr>
<tr>
<td>NECQ7 Functional foods are consumed mostly by people who have no need for them</td>
<td>4.4</td>
<td>1.7</td>
<td>0.430</td>
</tr>
<tr>
<td>REWQ10 It is great that modern technology allows the development of functional foods</td>
<td>4.8</td>
<td>1.6</td>
<td>0.427</td>
</tr>
<tr>
<td>NECQ6 Health effects are not appropriate in delicacies</td>
<td>4.6</td>
<td>1.5</td>
<td>0.388</td>
</tr>
<tr>
<td>NECQ5 I only want to eat foods that do not have any medicine-like effects</td>
<td>4.3</td>
<td>1.8</td>
<td>0.213</td>
</tr>
<tr>
<td>CONQ4 Functional foods are science-based top products</td>
<td>3.4</td>
<td>1.3</td>
<td>0.844</td>
</tr>
<tr>
<td>CONQ3 I believe that functional foods fulfill their promises</td>
<td>3.5</td>
<td>1.4</td>
<td>0.770</td>
</tr>
<tr>
<td>CONQ1 The safety of functional foods has been very thoroughly studied</td>
<td>3.7</td>
<td>1.3</td>
<td>0.649</td>
</tr>
<tr>
<td>REWQ4 Functional foods promote my well-being</td>
<td>4.9</td>
<td>1.7</td>
<td>0.264</td>
</tr>
<tr>
<td>SAF NECQ8 In some cases functional foods may be harmful for healthy people</td>
<td>4.6</td>
<td>1.7</td>
<td>0.746</td>
</tr>
<tr>
<td>CONQ7 If used in excess, functional foods can be harmful to health</td>
<td>3.7</td>
<td>1.6</td>
<td>0.598</td>
</tr>
<tr>
<td>CONQ5 The new properties of functional foods carry unforeseen risks</td>
<td>3.9</td>
<td>1.2</td>
<td>0.479</td>
</tr>
<tr>
<td>CONQ2 Using functional foods is completely safe</td>
<td>3.7</td>
<td>1.4</td>
<td>0.351</td>
</tr>
<tr>
<td>CONQ6 Exaggerated information is given about health effects</td>
<td>3.7</td>
<td>1.5</td>
<td>0.119</td>
</tr>
</tbody>
</table>

(a) not included into the data analysis because of poor loading.
5.3 Reliability testing

In order to control the reliability levels for the four attitude dimensions affecting consumer’s willingness, Cronbach’s alpha was computed for each of the four dimensions. The cut-off point for acceptable levels was set at \( \alpha < 0.5 \) (Yusoff 2012), as explained in the methodology chapter. The reliability for the dimensions were also calculated/controlled, if each item in the dimension was deleted, but since all dimension were calculated and found to be above the cut-off point the dimensions were kept intact, in order to stay true to the model developed by Lähteenmäki and Urala in (2007).

The \((\alpha)\) for the four dimensions reward, necessity, confidence and safety are as follows: Safety showed the lowest \(\alpha\) levels at 0.62, an acceptable level according to (Yusoff 2012). The \((\alpha)\) for confidence was calculated to 0.78 and necessity \((\alpha)\) to 0.78 both equal to or above 0.7 the cut-off point for \((\alpha)\) categorized in (Ibid). The \((\alpha)\) for the reward dimension was calculated to 0.89 above the cut-off point set by (Bryman & Bell 2005) for good \((\alpha)\) values. A summary of the calculated Cronbach’s alpha values are presented below in table 5.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Scale Mean</th>
<th>Scale St. dev</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>REW</td>
<td>4.25</td>
<td>1.27</td>
<td>0.89</td>
</tr>
<tr>
<td>NEC</td>
<td>4.8</td>
<td>1.04</td>
<td>0.78</td>
</tr>
<tr>
<td>CON</td>
<td>3.53</td>
<td>1.14</td>
<td>0.78</td>
</tr>
<tr>
<td>SAF</td>
<td>3.99</td>
<td>1.01</td>
<td>0.62</td>
</tr>
<tr>
<td>WILL</td>
<td>4.14</td>
<td>1.14</td>
<td></td>
</tr>
</tbody>
</table>

5.4 Recognizability and willingness

The recognisability and willingness to use different functional food categories were measured with the help of eight different functional foods: cholesterol lowering spreads, blood pressure lowering milk drink, probiotic/stomach friendly yoghurt, juice with added calcium, oatmeal with added beta-glucan, snack bar with added fibre, sweets and chewing gums with xylitol, energy drinks as well as two organic product categories in low-fat cheese and organic bread.
How well consumers recognized these different food categories was measured on a five point scale, 1 being I do not recognize this product (or this kind of product), 2 being I recognize this product, but I have not tasted it, 3 being I have tasted this product, but I do not use it, 4 being I use this product occasionally, and 5 being I use this product frequently (Lähteenmäki and Urala 2007). The scale allows for evaluation of each consumers level of familiarity with the different product categories and to what degree the different categories are being consumed (Ibid).

This was used to calculate the percentage of different categories, with the following numbers representing the respondents that first recognized the products, then used the product: cholesterol lowering spreads 71.2% and 14.8%. Blood pressure lowering milk drinks 32.1%, 5.2%. Probiotic/stomach friendly yoghurt 96.2%, 36.6%. Juice with added calcium 80.1%, 22.4%. Oatmeal with added beta-glucan 42.9%, 8.9%. Snack bar with added fibre 91.7%, 31.5%. Sweets and chewing gums with xylitol 85.9%, 59% and energy drinks by 97.4%, 46.1% of consumers. See table 6.

The ten different food categories were also used to measure consumer’s willingness to consume functional foods on a 7-point Likert scale with 1 being not at all willing and 7 being extremely willing. The arithmetic mean and standard deviation for the different product categories were calculated and are presented in table 6.

A calculation for all the arithmetic mean and standard deviation for all the food categories, minus the organic categories, was also calculated to a mean of 3.3 and standard deviation of 1.8, see table 5.

The scale mean is later used to measure how the four dimensions reward, necessity, confidence and safety each affect consumer’s willingness to consume functional food overall.
Table 6: Product categories descriptions

<table>
<thead>
<tr>
<th></th>
<th>Willingness to use</th>
<th>At least recognized(^b)</th>
<th>Users(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>St.dev.</td>
<td>% respondents</td>
</tr>
<tr>
<td><strong>FF</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholesterol lowering spreads</td>
<td>3.69</td>
<td>1.714</td>
<td>71.2</td>
</tr>
<tr>
<td>Blood pressure lowering milk drink</td>
<td>3.26</td>
<td>1.796</td>
<td>32.1</td>
</tr>
<tr>
<td>Probiotic/stomach friendly yoghurt</td>
<td>4.83</td>
<td>1.786</td>
<td>96.2</td>
</tr>
<tr>
<td>Juice with added calcium</td>
<td>4.59</td>
<td>1.77</td>
<td>80.1</td>
</tr>
<tr>
<td>Oatmeal with added beta-glucan</td>
<td>3.65</td>
<td>1.781</td>
<td>42.9</td>
</tr>
<tr>
<td>Snack bar with added fiber</td>
<td>4.40</td>
<td>1.81</td>
<td>91.7</td>
</tr>
<tr>
<td>Sweets and chewing gums with xylitol</td>
<td>4.78</td>
<td>1.844</td>
<td>85.9</td>
</tr>
<tr>
<td>Energy drinks</td>
<td>3.76</td>
<td>2.004</td>
<td>97.4</td>
</tr>
<tr>
<td><strong>PH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-fat cheese</td>
<td>3.81</td>
<td>1.897</td>
<td>92.9</td>
</tr>
<tr>
<td>Organic bread</td>
<td>4.59</td>
<td>1.977</td>
<td>86.5</td>
</tr>
</tbody>
</table>

FF = functional food, PH = Organic food
\(^a\) measured on a 7-point scale (1 = not at all willing, 7 = extremely willing)
\(^b\) 1 = I do not recognize this product (or this kind of product), 2 = I recognize this product, but I have not tasted it, 3 = I have tasted this product, but I do not use it, 4 = I use this product occasionally, 5 = I use this product frequently. At least recognized = 2 and ; Users = 4 and 5.

5.5 Pearson

A Pearson test was also carried out to see how well the different factor/dimensions interrelated. This was done to follow the previous studies conducted by Lähteenmäki and Urala (2007) in Finland that showed the functional food factors/dimensions to be strongly interrelated between 0.58 - 0.64 in 2002 and 0.42 - 0.66 in 2004. In this study the interrelation was not as high, instead it varied between 0.29 and 0.57, see table 7. It was deemed relevant to this study as the researchers thought it helped show how closely related each of the factor/dimensions are, which is discussed in the paper.

Table 7: Pearson correlation (between the four different attitude groups)

<table>
<thead>
<tr>
<th></th>
<th>REW</th>
<th>NEC</th>
<th>CON</th>
<th>SAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>REW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEC</td>
<td>0.570**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CON</td>
<td>0.471**</td>
<td>0.305**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAF</td>
<td>0.410**</td>
<td>0.484**</td>
<td>0.288**</td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed)
5.6 Willingness to consume functional foods

The scale mean and standard deviation for each factor was calculated and used as independent variables to measure the different dependent variable (functional food) categories. Then a regression analysis was conducted using these values to show what level the factor/dimensions impacted consumer’s willingness to consume each functional food category.

The reward factor/dimension impacted consumer’s willingness to consume functional foods on four of the different functional foods category groups, using p<0.01 and below; blood pressure lowering milk showed a Beta value of 0.56 and oatmeal, with added beta glucan, a value of 0.43. With a p<0.05; cholesterol lowering spreads had a Beta value of 0.34 and sweets and chewing gums with xylitol a Beta value of 0.28. See table 8.

The Necessity factor/dimensions also impacted consumers’ willingness to consume functional foods on four of the different functional foods category groups, with a p<0.01 and below; juice with added calcium showed a Beta value 0.38 and snack bar with added fiber a Beta value of 0.59. With a p<0.05; stomach friendly yoghurt Beta value of 0.39 and energy drinks Beta value of 0.54. See table 8.

The confidence factor/dimensions impacted consumers’ willingness to consume functional foods on five of the different functional foods category groups; with a p<0.01 and below cholesterol lowering spreads showed a Beta value of 0.33. With a p<0.05; juice with added calcium 0.21, oatmeal with added beta glucan Beta value of 0.23, snack bar with added fibre a Beta value of 0.25 and energy drinks a Beta value of 0.29. See table 8.

The Safety factor/dimensions impacted consumers’ willingness to consume functional foods in one of the different functional foods category groups; sweets and chewing gums with xylitol showed a Beta value of 0.40 with a p<0.01 or below. See table 8.
Table 8: The effect (Standardized parameter estimate: Beta)

<table>
<thead>
<tr>
<th>Cholesterol lowering spreads</th>
<th>Blood pressure lowering milk drink</th>
<th>Probiotic/stomach friendly yoghurt</th>
<th>Juice with added calcium</th>
<th>Oatmeal with added beta-glucan</th>
</tr>
</thead>
<tbody>
<tr>
<td>β</td>
<td>β</td>
<td>β</td>
<td>β</td>
<td>β</td>
</tr>
<tr>
<td>REW</td>
<td>.338**</td>
<td>.558*</td>
<td>.218</td>
<td>.231</td>
</tr>
<tr>
<td>NEC</td>
<td>.218</td>
<td>.202</td>
<td>.388**</td>
<td>.375*</td>
</tr>
<tr>
<td>CON</td>
<td>.331*</td>
<td>.186</td>
<td>.147</td>
<td>.211**</td>
</tr>
<tr>
<td>SAF</td>
<td>.056</td>
<td>-.026</td>
<td>.197</td>
<td>.140</td>
</tr>
<tr>
<td>Snack bar with added fiber</td>
<td>β</td>
<td>β</td>
<td>β</td>
<td>β</td>
</tr>
<tr>
<td>REW</td>
<td>.114</td>
<td>.282**</td>
<td>.210</td>
<td>.217</td>
</tr>
<tr>
<td>NEC</td>
<td>.588*</td>
<td>.226</td>
<td>.542**</td>
<td>.493*</td>
</tr>
<tr>
<td>CON</td>
<td>.250**</td>
<td>.031</td>
<td>.288**</td>
<td>.068</td>
</tr>
<tr>
<td>SAF</td>
<td>-.010</td>
<td>.402*</td>
<td>-.153</td>
<td>.136</td>
</tr>
</tbody>
</table>

*. significant at the 0.01 level **. significant at the 0.05 level

FF = functional food, PH = Organic food
a) measured on a 7-point scale (1 = not at all willing, 7 = extremely willing)
b) 1 = I do not recognize this product (or this kind of product), 2 = I recognize this product, but I have not tasted it, 3 = I have tasted this product, but I do not use it, 4 = I use this product occasionally, 5 = I use this product frequently. At least recognized = 2 and ; Users = 4 and 5.

5.7 Analysis

When controlling and making sure that the different factors loaded well, almost all statements loaded well into the intended factor with one exception found in each of the factors necessity (NECQ5), confidence (REWQ4) and safety (CONQ6) these statements were all excluded from any further analysis in order to avoid skew results and to migrate causing misfits further into the analysis.

Using the data compiled, followed by an empirical investigation and analysis of the data, the reward factor/dimension was found to have a positive correlation with consumers willingness to consume functional food, which has led the researchers to confirming hypothesis 1. Although it was not found to be true in all reward cases, it was particularly true for the food products; blood pressure lowering milk drink and oatmeal with added beta-glucan.
The Necessity factor/dimension was also found to have a positive correlation with consumer’s willingness to consume functional food, which has led the researchers to confirming hypothesis 2. Again, although it was not found to be true in all the necessity cases, it was particularly prevalent for food products; juice with added calcium and snack bars with added fibre.

In the confidence factor/dimension it was also found to have a positive correlation with consumer’s willingness to consume functional food, which has led the researchers to confirming hypothesis 3. Although it wasn’t found to be true in all the confidence cases, it was particularly true for cholesterol lowering spreads.

The Safety factor/dimension was also found to have a positive correlation with consumer’s willingness to consume functional food, which has led the researchers to confirming hypothesis 4. Again, although it wasn’t found to be true in all the safety cases, it was particularly prevalent for sweets and chewing gums with xylitol.

5.8 Chapter Summary

In this chapter the compiled collected empirical data from the surveys was presented and analysed. The main findings from this chapter have been used in order to confirm or reject the formulated hypothesis. The hypothesis’ that have been developed were then confirmed after analysing the data.
6. Conclusions

In this chapter the main findings from the empirical data and the data analysis is discussed and presented. Managerial implication and theoretical contributions from the study is presented as well as a discussion around the limitations of this research.

6.1 Focus of the study

This study has been focused on investigating how attitudes impact consumers’ willingness to consume functional foods. The purpose of this study was to gain a better understanding of consumer attitudes in the areas of reward, necessity, confidence and safety in relation to functional foods effects on consumers’ willingness to consume functional foods.

Based on the research previously done on attitudes and functional foods the following purpose was developed;

To investigate consumer attitudes on functional foods and their willingness to use functional foods.
6.2 Discussion

As mentioned earlier in section 5.6, to help investigate consumer’s attitudes towards functional foods, the Recognizability and willingness to use different functional food categories was measured with the help of eight different functional foods as well as two organic product categories. How well consumers recognized these different food categories was measured on a five point Lickert scale and the ten different food categories were also used to measure consumer’s willingness to consume functional foods on a 7-point Likert scale (Lähteenmäki and Urala 2007). The results from both the 5 and 7 point scales helped support the purpose and hypotheses developed in the thesis.

It was found from this study that the different food categories that were selected can have an effect on a respondent's results, as each food category was found to have a different relevance level towards reward, necessity, confidence or safety. This supports the previous research idea that functional foods are perceived differently depending on the food type and that functional food is not seen as a homogenous group (Lähteenmäki and Urala 2007).

Our investigation into the purpose of this paper has helped support the previous research conducted by Lähteenmäki and Urala (2007). It was interesting to find the different relationships between each food category and the four factors/dimensions in reward, necessity, confidence and safety along with the consumer attitudes towards functional foods.

6.3 Managerial Implication

Using the research conducted in this paper it can be said that some implications arise from a managerial perspective. Firstly, it was found that each food category should be approached in a different way from a marketing or advertising point of view. This will increase the managerial costs of marketing functional foods as it will take more time to develop the desired marketing strategies. Secondly, when marketing each functional food product, different aspects e.g. reward, necessity, confidence and safety should be highlighted in the packaging or advertisement to give the marketing strategy an advantage to increase consumer willingness to use that product.
It is also important to note the different attitudes and willingness to consume functional foods between different regions. Even though the overall implications say that there are similarities it would be hard to determine by how much they differ or are similar. This would also add to the managerial costs and time consumption.

6.4 Theoretical contributions

This study has aimed to provide a better understanding of how, and if, attitudes on functional food impact consumers’ willingness to consume functional foods. The study utilized and adapted a model that was proposed by previous research, so the study can therefore be said to make a contribution by testing the model and theories in a new context and region.

Using the study used by Lähteenmäki and Urala (2007) as a base for this research has allowed the education and knowledge of consumers attitudes towards functional foods to stay as consistent as possible, in the hope that further studies can be made in different regions to help grasp a better understanding of consumers attitudes and willingness to consume functional foods in Sweden.

Perhaps the most important outcome of this study is that it confirms the previous research conducted by Lähteenmäki and Urala (2007) saying that, attitudes do affect consumer willingness to consume functional foods, further it proves that the model developed by Lähteenmäki and Urala (2007) can be used in different settings.

6.5 Limitations

The limitations of this study have been mostly related to time and resource limitations. The results from this research cannot be generalized beyond the scope of younger consumers as the sample size was mostly made up of younger respondents, with a high degree of university students. Cultural aspects also play a part in how people's attitudes are formulated and therefore the study can only be generalized inside of Sweden.

Further, the study is solely focused on the four factors/dimensions reward, necessity,
confidence and safety and how consumer’s attitudes in these areas impact consumer’s willingness to consume functional foods. It is possible that these do not provide a perfect measurement on consumer willingness which again encourages further research and education in the area of functional foods.

6.6 Suggestions for further research

- The same research could be carried out with a larger number of respondents, with more diversity in the sample pool in order to improve upon the accuracy and the generalizability of the findings in the study.
- Further we suggest that the research be carried out in different cultural settings in order to look into potential differences in attitudes between cultures.
- Another suggestion is to redo the entire study in the future, in order to see how the results hold up over time or if they are prone to change over time.
- Additional food categories could also be investigated in order to explore whether or not there is a correlation between other food categories and/or attitude factors/dimensions.

6.7 Chapter summary

In this chapter the research purpose that has been presented in the paper has been discussed and possible limitations have been taken into account. Further the managerial implications and theoretical contributions have been presented. Finally the suggestions for further research have been presented.
References List


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Appendix I: Questionnaire

Attitudes towards functional foods

This survey is being conducted by students from Linnaeus University to investigate consumer attitudes and their willingness to use functional foods. A functional food is similar to a conventional food. The difference is functional foods have proven health benefits that reduce the risk of diseases and are beneficial beyond their basic nutritional value. It will only take a few minutes to complete the survey. It is anonymous and your honesty and participation is greatly appreciated. Thank you for your time!

DEMQ1. Gender  Male ☐  Female ☐

DEMQ2. Age  18-29 ☐  29-39 ☐  40-49 ☐  50-59 ☐  60 < ☐

DEMQ3. Level of education  Basic 9 years education ☐  High school ☐  University ☐
I recognize the following type of functional food group.

1 = I do not recognize this product (or this kind of product)
2 = I recognize this product, but I have not tasted it
3 = I have tasted this product, but I do not use it
4 = I use this product occasionally
5 = I use this product frequently

*PLEASE MARK ‘X’*

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>RECQ1</td>
<td>Cholesterol lowering spreads</td>
</tr>
<tr>
<td>RECQ2</td>
<td>Blood pressure lowering milk drink</td>
</tr>
<tr>
<td>RECQ3</td>
<td>Probiotic/stomach friendly yoghurt</td>
</tr>
<tr>
<td>RECQ4</td>
<td>Juice with added calcium</td>
</tr>
<tr>
<td>RECQ5</td>
<td>Oatmeal with added beta-glucan</td>
</tr>
<tr>
<td>REC Q6</td>
<td>Snack bar with added fiber</td>
</tr>
<tr>
<td>REC Q7</td>
<td>Sweets and chewing gums with xylitol</td>
</tr>
<tr>
<td>REC Q8</td>
<td>Energy drinks</td>
</tr>
<tr>
<td>REC Q9</td>
<td>Low-fat cheese</td>
</tr>
<tr>
<td>REC Q10</td>
<td>Organic bread</td>
</tr>
</tbody>
</table>

I agree with the following statement 1 = completely disagree and 7 = completely agree

*PLEASE CIRCLE*

Question No Statement

REWQ1 The idea that I can take care of my health by eating functional foods gives me pleasure

completely disagree 1 2 3 4 5 6 7 completely agree

REWQ2 My performance improves when I eat functional food

completely disagree 1 2 3 4 5 6 7 completely agree

REWQ3 Functional foods help to improve my mood

completely disagree 1 2 3 4 5 6 7 completely agree

REWQ4 Functional foods promote my well-being

completely disagree 1 2 3 4 5 6 7 completely agree

REWQ5 Functional foods can repair the damage caused by an unhealthy diet

completely disagree 1 2 3 4 5 6 7 completely agree
REWQ6 I can prevent disease by eating functional foods regularly
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
REWQ7 I am prepared to compromise on the taste of a food if the product is functional
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
REWQ8 Functional foods make it easier to follow a healthy lifestyle
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
REWQ9 I actively seek out information about functional foods
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
REWQ10 It is great that modern technology allows the development of functional foods
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ1 Functional foods are completely unnecessary
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ2 The growing number of functional foods on the market is a bad trend for the future
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ3 Functional foods are a total sham
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ4 For a healthy person it is worthless to use functional foods
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ5 I only want to eat foods that do not have any medicine-like effects
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ6 Health effects are not appropriate in delicacies
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ7 Functional foods are consumed mostly by people who have no need for them
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ8 In some cases functional foods may be harmful for healthy people
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
NECQ9 It is pointless to add health effects to otherwise unhealthy foods
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
CONQ1 The safety of functional foods has been very thoroughly studied
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
CONQ2 Using functional foods is completely safe
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
CONQ3 I believe that functional foods fulfil their promises
   **completely disagree** 1 2 3 4 5 6 7  **completely agree**
CONQ4 Functional foods are science-based top products
completely disagree 1 2 3 4 5 6 7 completely agree

**CONQ5** The new properties of functional foods carry unforeseen risks

completely disagree 1 2 3 4 5 6 7 completely agree

**CONQ6** Exaggerated information is given about health effects

completely disagree 1 2 3 4 5 6 7 completely agree

**CONQ7** If used in excess, functional foods can be harmful to health

completely disagree 1 2 3 4 5 6 7 completely agree

**Willingness to use functional foods**

Willingness to use different functional foods categories on a 7-point scale (1 = not at all willing, 7 = extremely willing).

*PLEASE CIRCLE*

Question No Statement

**WILQ1** Cholesterol lowering spreads

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ2** Blood pressure lowering milk drink

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ3** Probiotic/stomach friendly yoghurt

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ4** Juice with added calcium

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ5** Oatmeal with added beta-glucan

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ6** Snack bar with added fiber

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ7** Sweets and chewing gums with xylitol

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ8** Energy drinks

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ9** Low-fat cheese

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

**WILQ10** Organic bread

*not at all willing* 1 2 3 4 5 6 7 *extremely willing*

Thanks again for your time!
Linnaeus University - a firm focus on quality and competence

On 1 January 2010 Växjö University and the University of Kalmar merged to form Linnaeus University. This new university is the product of a will to improve the quality, enhance the appeal and boost the development potential of teaching and research, at the same time as it plays a prominent role in working closely together with local society. Linnaeus University offers an attractive knowledge environment characterised by high quality and a competitive portfolio of skills.

Linnaeus University is a modern, international university with the emphasis on the desire for knowledge, creative thinking and practical innovations. For us, the focus is on proximity to our students, but also on the world around us and the future ahead.

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