

**MOTIVATION TO BUY HEALTHY SNACKS**



**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE GRADUATE SCHOOL  
STAMFORD INTERNATIONAL UNIVERSITY  
MASTER OF BUSINESS ADMINISTRATION  
ACADEMIC YEAR 2015**

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**The Research has been approved by  
Stamford International University  
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### Abstract

The objective of this paper is to identify the purchasing motivation of consumers in Vienna for healthy snacks and the product attributes that drive consumer motivation to buy healthy snacks. Previous research mainly focuses on healthy and organic food but makes no or little differentiation to healthy snacks.

The research methodology used for this study includes the collection of primary data with a web-based questionnaire. A Factor analysis was conducted with the purpose of grouping attributes that motivate customers to buy healthy snacks into different factors to explain different motivations. Moreover, a regression analysis was conducted to explore the impact of those factors on the buying motivation.

The results of the factor analysis present two different factors. The first factors can be titled “health conscious” and consists of four parameters. The second factor is “organic conscious” and includes three parameters. The result of the regression analysis shows that “organic consciousness” has a higher influence than “health consciousness” on the motivation to buy healthy snacks.

**Keywords:** motivation to buy, factor analysis, regression, snack, health, purchasing behavior.

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Lukas Pöchlauer

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# CHAPTER 1

## INTRODUCTION

Society is becoming more and more aware of the long-term dangers that can derive from an unhealthy lifestyle. The rise in obesity and diseases forces companies to implement healthy alternatives to their product portfolio and pressures companies in the food and beverage sector to change to a healthier image in order to reduce the risk of suffering from declining revenues (Chaudhary, 2013). Excessive consumption of high calorie foods is related with excess weight gain. The number of snacking occasions per day and the energy density of snacks have been increasing substantially over the last decades. Food can be considered as healthy if it has nutritional components that are low in fat, low in salt, high in dietary fibres, or high in vitamins (Krystallis & Chrysochou, 2012).

Snack food makes for many customers a significant contribution to the daily fibre and nutrition intake (Miller et al, 2013). The majority of new products or product lines in sweet and savoury snacks are promoted as low in fat and appropriate for weight management in order to target the market of health aware customers. The combination of nutritional value and convenience for a reasonable price is a key success factor in the snack food industry (Szalai, 2013).

Snack bar market sales have been growing to \$6 billion USD, which is more than double the size that 10 years ago whereas outpacing chips and pretzel sales have only grown by 3.5 percent during the same time period (Roberts, 2013). Sales in the USA of natural and organic foods and beverages rose to almost 40 billion in 2010, which is an increase of 9 percent to 2009. The Organic food industry will remain growing and is projected to exceed annual sales of 78 billion USD in 2015, which implies a growth rate of more than 100 percent (Ilkay, 2013). Organic food is nutritious food of good quality. Sustainable production and humane animal treatment are important attributes of the organic food industry (Shoki et al., 2014).

Previous research has shown that minimal artificial chemical residues, high nutritional value, high quality such as taste are important attributes that are related to organic food production. Moreover, consumers prefer products that have been

environmentally friendly produced (Pearson, 2002). Recent studies assume that customers link local production and organic food closely (Koutsimanis et al, 2012 ).

The awareness of health issues changed consumption and buying behaviour significantly. The red meat consumption in the USA declined from 79 per cent of total meat consumption in 1970 to almost 50 per cent in 2007 whereas the poultry share increased in the same period from 21 to nearly 40 per cent (Daniel et al., 2011) (Regmi, 2001).

### **1.1 Statement of the Problems**

The existing literature mainly focuses on healthy and organic food but makes no or little differentiation to healthy snacks. Most of the studies targeting healthy food and the snack industry were conducted in the USA and there is a lack of research targeting the European market and in particular the market in Austria. What is more, the lack in scientific literature determining how product attributes like calorie amount or sugar content influence the buyer decision process. Even though the literature as resumed in the literature review talks about trends in the snack industry, there is no research targeting customers' product attribute preferences. There is a need for studies that analyze the importance of various product attributes and how they influence customers when buying healthy snacks.

### **1.2 Objectives**

This paper aims to explore the purchasing motivation of consumers for healthy snacks and which product attributes drive consumer motivation when buying healthy snacks. The purpose of this study is to define which product features are the most important factors regarding the preferences of customers.

### **1.3 Significance of the Study**

Motivation is the processes that cause people to behave as they do. In marketing research, the study of motivation is the examination of principles that help to understand why people choose particular products and take specific actions (Shcheglova, 2009). It is essential for companies to know how consumers evaluate the

quality of food products during the purchasing decision process and which factors are crucial for their decision-making. Sellers have to be flexible and meet customer needs, as attitudes toward a certain product are important in the purchasing decision process. (Nguyen, 2011).

It is important for product developers and companies to know what attributes consumers like about products and what attributes they don't like in order to increase the acceptability of a certain product (Popper, Rosenstock, Schraidt, & Kroll, 2004). Consumers' value attributes because they function as the foundation for evaluating a product. Consumers seek for benefits when they purchase a product and attributes serve those benefits. Moreover, consumers compare different products based on attributes. Therefore, product attributes are very important for the product choice and can be used by companies to position their product and influence the consumer decision-making process by understanding what consumers assess in specific products (Akpoyomare et al., 2012).

Customer value can be viewed as the attributes of a product that a customer believes he or she perceives value from. Consequently, customers derive value from the attributes of a product. (Woodruff, 1997). Understanding how consumers choose products can be a competitive advantage. Companies use information about consumer behaviour in order to offer the right product with the right attributes and increase their sales. Factor analysis is important is an important to for marketing a product because it shows what attributes are key attributes for the customer. Factor analysis can be used to create the ideal product for customers and increase the sales of the product (Kotler & Keller 2011).

#### **1.4 Scope and the limitation of the study**

The study is confined to examine the product attributes of healthy snacks that customers rate as most important for selecting a particular product when purchasing healthy snacks. Due to the size of the sample selected for the study the findings represent only a small segment of the population. The locational restraint further contributes limitation of generalization to the whole population. The exploratory research design of this study bears several limitations. Exploratory research is conducted to make ambiguous situations clearer. Exploratory research can be seen as a

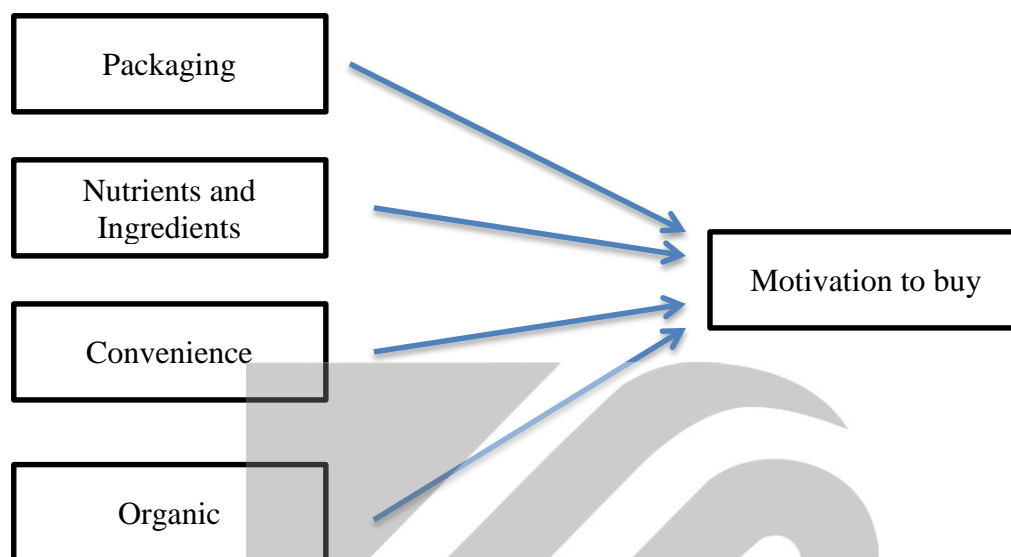
first step as it does not provide conclusive evidence. Therefore, additional research will be needed to provide more conclusive evidence (Zikmund et al., 2009).

### **1.5 Construct**

The construct used for this study is based on secondary data. It consists of several product attributes that influence the motivation of customers to buy healthy snacks. Product related attributes include convenience, packaging, organic and nutrition and ingredients related attributes. Product attributes are a reason to believe a certain health claim related to product quality attributes like naturalness. Product characteristics like ingredients or calories are a strong predictor of purchase intention (Bornkessel et al., 2011).

Demographic variables include gender, age, educational level and city of origin. Psychographic variables are related to health orientation. Due to the inclusion of psychographics that examine the level of health orientation a distinction between high-level and low-level health orientated customers and their perception of important attributes of healthy snacks can be evaluated. The conceptual framework in Figure 1.1 shows a construct to group different product attributes.

The product related convenience attribute is composed of the preparation time to make the snack eatable and the products shelf life. Many attributes can't be assessed before the customer opens and tastes the product. Therefore, packaging as a very important product attribute. The packaging includes clean labeling, ingredients list, easy to carry, easy to open, re-closable and the nutrition facts label. The organic variable lists attributes like additives, local ingredients and sustainable production of the food.



**Figure 1.1** Construct of motivation to buy

**Packaging:** nutrient fact label, easiness to carry the snack, easiness to open the snack, ability to re close the package, ingredient fact label.

**Nutrients and ingredients:** amount of calories, amount of protein, amount of cholesterol, amount of antioxidants, amount of mineral, amount of sugar, amount of salt, amount of sodium, amount of vitamin, nutritional value.

**Convenience:** shelf life, preparation time.

**Organic:** local ingredients, environmentally friendly production, genetically modification.

Overall, 20 variables were identified during the literature review. A factor analysis was conducted with the purpose of grouping those variables into different factors to explain different motivations to buy healthy snacks. The research methodology used in this study involves 2 different stages. A literature review was carried out in order to identify variables that influence the purchase decision of healthy products and snacks and show a trend to growing awareness towards healthy food. What attributes do customer value most about snacks and how this preferences are changing to due the trend towards healthy products. The literature serves as a basis for the conceptual framework and the quantitative questionnaire conducted in the third part of this research.

## **CHAPTER 2**

### **LITERATURE REVIEWS**

This chapter reviews the existing literature that is related to healthy snacks and the healthy snack market. It carries out how snacks and healthy food is defined by the existing literature. Those findings were combined to conclude the definition of healthy snacks by combining snack food and healthy food. The market situation of the snack market in general and the market for healthy snack is reviewed in this chapter. The last part of the literature review speaks about health orientation of snack consumers, their reasons to buy healthy snacks and product attributes of healthy snacks

#### **2.1 Definition of snack food**

The terms snacking and snacks are commonly used in the literature but there is no general definition for those terms (Chapelot, 2010). However, most of the literature defines snacks as food consumed in the time between main meals. As a result, snack food became a major contributor to calorie and saturated fat intake (Gregori & Maffei, 2007). Due to the lack of definition and the blurred line between snacks and meals, consumers have to self-define snacks and snacking.

#### **2.2 Definition of healthy food**

There are many different aspects and definitions of the healthiness of food. Food that provides the body with essential carbohydrates, fats, proteins, vitamins and minerals to enable the body to produce energy that is essential for life can be seen as healthy if it does not harm the body. Therefore, food safety can be seen as the minimum requirement for food to be seen as healthy (Chadwick, 2000) (Margetts, Martinez, Saba, Holm & Kearney, 1997). Moreover, consumers tend to identify natural food as healthy. Many customers think that natural food is healthy and non natural food is considered unhealthy due to artificial ingredients like food colouring (Rozin, 2005).

### **2.3 Snack and healthy food market situation and trends**

Eating habits have changed over the last decades from eating two or three large meals a day to eating smaller meals more frequently. Therefore, snacks contribute substantially to the overall food intake (Gatenby, 1997). Combining a healthy lifestyle and this pattern of eating behaviour makes it necessary to eat healthy snacks. In the US, the number of people that consume healthy snacks has grown from 29 million to 41 million, which is an increase from 14% to 18% of the population (“Consumers continue seek healthy snack options“, 2014).

The strong growth of non-sugary snacks reflects the change of consumer’s attitudes towards a health-focused lifestyle. Even though conventional snacks are still the number one in terms of sales in Europe and worldwide, innovation in the health snacking product development is necessary to adjust to the changes in consumer’s mind-sets (“Snack Attack“, 2014). According to a study by Innova Market Insights, 18% of global meat snacks launches were marketed on as healthy snacks. The numbers in Europe and the United States are with 40% and 75% even higher. This shows a higher tendency towards healthy snacks in more developed markets. Producers answer customer claims towards naturalness and the absence of artificial additives and preservatives. 12% of global launches and 58% of the launches in the United States are marketed as natural and without additives or preservatives (“Health Concerns Driving Global Meat Snack Market“, 2012).

Protein Bar sales for example increased more than 15 per cent to 461 million USD (Harbor Communications, 2014). Almost 60 per cent of Americans trying to consume packaged foods with protein for several reasons like build muscle strength (56%) maintain energy (62%) and the most common reason with 76 per cent having a balanced diet. Protein bars combine nutritional value, convenience and a value for money positioning successfully, which is a great growth opportunity for products and companies. Protein is one of the most important nutritional components for 62 per cent of health aware snack consumers. This tendency is supported by the increasing popularity of the protein concentrated Paleo diet trend. High-protein shakes, yoghurts, peanut butter or snack bars are a serious competition for traditional protein sources like chicken and other types of meat (“The All Natural Food & Drink Market“, 2013).

The mixture of health trends and snacking is expected to result in growth of the snack industry over the short to medium term. Companies will have to focus on expansion of snack products that meet requirements for a variety of health trends including weight management, immune system support and brain health. The priority for many snack consumers' are health aspects. 65% of American consumers are engaged to eat healthy snacks while 30% see snacking as part of their diet (Szalai, 2013).

Major Snack producers worldwide have been addressing the health trend by sodium reduction in their production process and have added healthier options like baked or air popped potato chips with zero per cent trans fats to their product portfolio (Goldbogen Harlan, 2012). Competition for the snack industries comes in form of fresh fruits. The healthy trend has increased popularity of fruits as a substitute for conventional snacks (Roberts, 2013). Several major trends in the snacking industry change the industries product portfolio, production process and appearance. One of the main game changers is the trend to "all-natural" which means that artificial ingredients are getting replaced by natural ingredients. The trend in terms of package design is clean labelling in order to reflect the products healthy features and natural ingredients ("The All Natural Food & Drink Market", 2013).

Food labels are important to display sustainability factors, product attributes and health/nutrition information to consumers that is otherwise intangible, that is, the production method or origin of the product. Previous research showed that fat and calories facts on nutrition labels are more important for customers than other nutrients. One reason for this finding might be that customers have a better understanding of the correlation of fat or calorie consumption and obesity. Customers mainly use nutrition fact labels for weight management rather than other health related reasons (Zepeda et al., 2013).

Brand loyal customers are less likely to study and consider nutrition labels for their purchase decision. According to a research by Cornell University, customers are willing to pay more and would be more likely to buy products if a food label includes phrases like "free of food dye" and if it also includes negative information about the ingredients. This study shows how labels and packaging influences consumers in their purchasing decision. More information makes customers more confident about their

decision and therefore more likely to buy a particular product (“Food Label Details Could Have Big Influence On Consumer Purchasing“, 2013,). Nutritional labelling is a key aspect of consumers’ food purchase decisions. Health aware buyers in particular are likely to look for nutrition information labels (Gabriels & Lambert, 2013).

What is more, the snacking industry attracts health conscious consumers by reducing the package size. This results in less amount of sugar per portion (“Consumers continue seek healthy snack options“, 2014). The growing demand for clean label products can be explained by the trend towards healthy food and the increasing awareness and media coverage of the drawbacks of unhealthy food (The All Natural Food & Drink Market 2014-2024: Clean Label Trends , 2014). Another reason for the clean label trend is that customers want to go “back to basics” with ingredients that do not differ from the ingredients they have in their own kitchens (Clean Label: The Art of Omission, 2013). There is no definition for clean label but generally a clean label is an easy to understand ingredient statement associated with natural, not over processed organic food without any harmful additives (Osborn, 2015).

#### **2.4 Health orientation**

Health orientation explains how people feel about their health and how much effort they pay and how motivated they are to stay or become healthy. Moreover, the concept of health orientation describes to with extant individuals are eager to take responsibility for their health related goals. Therefore, high health orientated persons are more motivated to research health information (Dutta et al., 2008).

#### **2.5 Motivation to buy healthy snacks**

Customers look for snacks that provide them with long lasting energy rather than products that give a quick boost of energy and significantly increase blood sugar levels. Weight management and an increasing obesity rate both in the WHO European Region and worldwide is an important topic in the food industry. Providing products with less or even no sugar and fat is an opportunity for snack manufacturers to increase their sales.

A good combination of natural fibre and fibre-enriched food is necessary to reach the recommended level of nutritional fibre consumption. This consumer need offers another great opportunity for snack producers to offer quick and easy solutions ("The All Natural Food & Drink Market", 2013). Moreover, research has shown that consumers are willing to pay a premium for snacks that are perceived as healthy. The opportunity to increase profit margins due to higher prices, the trend towards healthy food and the more frequently consumption of smaller portions energizes producers to come up with a new generation of snacks made of healthy ingredients (Moloughney, 2014).

Another driver for the snack market growth is the consumer desire for convenience and their limitation on time to spend on meals. Consumers do not differentiate between meals and snacks as firm as they used to, the line between meals and snacks is rapidly disappearing. The healthy lifestyle trend and the steady growth of the snack market outline the importance of healthy snacks. The consumer motivation to buy healthy snacks does not only depend on health features but many other aspects including convenience, price, availability and many more ("The All Natural Food & Drink Market", 2013).

The aim of this study is to explore factors influencing the motivation of consumers to buy healthy snacks. Taste is still the main reason people buy snacks. According to a food focused survey conducted by the Food Information Council Foundation, 87 per cent of the respondents said that taste is the number one reason to buy specific food ("The All Natural Food & Drink Market", 2013). This paper aims to examine the different factors that drive consumers motivation about purchasing healthy snacks. A survey is carried out to explore consumer behaviour with focus on understanding reasons why consumers buy particular healthy snacks. Previous studies have shown that a better understanding of the consumers perception of healthy food and determinates, is necessary to successfully market products in this category (Azzurra & Paola, 2009).

According to the literature there are many different aspects that customers factor into their purchasing decision-making. Key factors that encourage customers to buy healthy snacks are the desire to reduce the risk of weight gain, diabetes, heartburn and bloating. Moreover, values, beliefs and norms influence shoppers' motivation to

buy organic food (Crofton et al., 2013). According to a study recent study about snack habits, 86% of people who see themselves as "healthy snackers" use healthy snacks to help them lose or maintain their weight. Rated as very important by the participants of this study in choosing healthy snacks are the following three: taste, low in sugar and high in protein. Factors that keep customers from buying healthy snacks include perceived taste, quantity, lack of convenient options to purchase nutritional snacks, accessibility and uncertainty over the reliability of healthy snacks and their health benefits. (Crofton et al., 2013).

The food and health survey conducted by ific found out that improving the hart health is the major motivation for consumers to buy healthy food. In order to stay healthy and prevent future hart diseases, around 65 per cent of Americans try to avoid the intake of sodium. 6 out of ten Americans consider the amount of sodium in packaged food as they think it's a major factor influencing overall health. The majority of Americans try to limit or completely avoid sugar when consuming packaged food. The main reasons for this the avoidance of sugar are weight management and overall health concerns. Food additives play an important role in purchase decision-making. 90 per cent of Americans believe that unnatural additives have not the same properties as natural. Customers in Europe are willing to pay more for products they perceive as natural and organic. According to a recent study, 72 per cent of all Europeans are willing to pay a premium for natural food (International Food Information Council Foundation, 2013).

Motivation to buy is the result between the link of product information and self- knowledge and memory. These links are responsible for the parts of the cognitive network that the consumer increases in his mind when presented with product attributes. Therefor, consumers connect product attributes with personal consequences. These consequences can be perceived as positive or negative. In conclusion, product attributes are linked to consumer needs and the motivation to buy a certain product (Gutman,1982).

## **2.6 Product attributes**

Product attributes are an important factor for companies in order to market their products. Product attributes offer an opportunity to set a brand apart from

competition. Product attributes are the basis for the evaluation of a product by consumers as they provide the benefits consumers search for. Attributes are either concrete or abstract (Peter & Olsen, 1996). Concrete attributes are tangible characteristics of a product and can be objectively assessed. Abstract attributes cannot be measured as easy as concrete as they represent intangible and subjective product characteristics. An attribute is important if it offers an important benefit to satisfy particular consumer needs (Aaker & Myers, 1975). Attributes play a major role in the purchase decision-making since the outcome of this decision is determined by product attributes. Products are evaluated on basis of attributes that are seen as important by consumers (Blackwell & Miniard, 2006).

Therefore, this study is intended to explore a possible underlying structure of the different product attributes that drive motivation buy in order to ensure effective marketing of healthy snacks.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

An exploratory research design was used to gain insight into the consumer's preference when it comes to healthy snacks and how to group customers according to their preferences. The research methodology used in this study involves 2 different stages. A literature review was carried out in order to identify variables that influence the purchase decision of healthy products and snacks and explore the trend of growing awareness towards healthy food. The literature review serves as a basis for the conceptual framework and the quantitative questionnaire conducted in this part of the research.

The survey for this study was distributed via online link using both, Facebook and e-mail. A copy of the survey is included in the appendix. 121 questionnaires were collected. The data analysis was conducted with 109 data sets. Participants consist of both, male and female. For purpose of screening, participants were asked if they have ever consumed healthy snack and if so how often. Only questionnaires completed by participants that live in Vienna and have consumed a healthy snack during the last 4 weeks were evaluated. The questions about health orientation, which represents the psychographic section of the research, were taken from a questionnaire design invented by Dutta-Bergman (Dutta-Bergman, 2005). The questionnaire includes the following four indicators of health orientation: 1) health consciousness 2) health information orientation 3) health oriented beliefs, and 4) healthy activities. The survey also includes questions about demographic information such as age, education level, gender and place of residence.

The specific part of the questionnaire asks participants about preferences of different product related attributes of healthy snacks. After collecting, the raw data was captured in a Microsoft excel database. The spreadsheet was then imported into SPSS in order to conduct a factor analysis to explore the various determinates that have an impact on consumer purchase decision of healthy snacks. A copy of the spreadsheet is included in the appendix.

### **3.1 Population and sample size**

The populations of interest for this study are people living in Vienna, both male and female that have consumed a healthy snack in the last 4 weeks. According to data from Statistik Austria, approximately 1,7 million people live in Vienna. Even though non probability sampling results in an unknown probability of any particular member of the population being chosen as units of the sample are selected on basis of personal judgment and convenience, this method has been chosen for this study as it is pragmatic and suitable for market research especially if the research has exploratory characteristics. Convenience and the low cost advantage of non-probability sampling outweighed the disadvantage that inferring from the sample to the general population is not possible (Zikmund et al., 2009).

In order to conduct an adequate factor analysis at least 100 cases have to be collected (MacCallum et al., 1999). During this study, 121 questionnaires have been collected. A screening question was included in the questionnaire in order to filter out people that have not consumed a healthy snack during the last 4 weeks. Only questionnaires completed by participants that live in Vienna and have consumed a healthy snack during the last 4 weeks were evaluated.

### **3.2 Data Collecting Procedure**

In order to achieve the goals of this study primary data from customers in Vienna had to be gathered. A questionnaire survey was chosen, as it is the most cost effective tool to collect primary information about behaviours and attitudes (Gravetter & Forzano, 2006). Therefore, data was collected with a web-based questionnaire covering 51 questions. The questionnaire includes 3 screening questions, 7 general questions, 5 demographic questions, 35 specific questions and one questions that asks about intention to buy. The specific questions cover questions about packaging preferences, health related product preferences, organic related preferences and preferences related to convenience factors. The respondents attitudes regarding the specific questions were measured by using a four point likert scale ranging from strongly agree to strongly disagree. By using a four-point scale, participants are forced to either agree or disagree since the absence of neutral point in the measurement tool. (Zikmund et al., 2009).

Previous research states that there is no difference in reliability for scales formats from 2 to 19 response options, particularly after four or five scale points (Aiken, 1983).

Google Forms was used to create the online questionnaire. The hyperlink that is connected to the questionnaire was then distributed among my personal e-mail contact list and my Facebook friends list. In order to reach a wider audience, snowball sampling technique has been used. Participants have been asked to share the questionnaire among their own personal contacts, both Facebook and e-mail (Zikmund et al., 2009)

### **3.3 Quantitative Data Analysis**

Motivation to buy is a latent and therefore not directly measurable. It is necessary to explain this latent variable from other variables (Field, 2005). This study explains the motivation to buy with 20 variables explained in the conceptual framework section. Those 20 variables that can be directly measured were grouped into the following four sections: packaging, nutrients and ingredients, organic and convenience and were analysed by using exploratory factor analysis. Factor analysis is a data reduction technique but can be also used for the construction of measurement scales. Exploratory Factor Analysis and Confirmatory Factor Analysis. Confirmatory Factor Analysis attempts to confirm hypotheses, whereas Exploratory Factor Analysis tries to explore patterns. (Child, 2006).

Therefore, Confirmatory Factor Analysis does not include hypotheses. It is widely used to analysis unobserved construct. The latent variable is dependent and the observed variables the independent. In this research, motivation to buy is the dependent variable that relates to the construct of the independent variables like convenience, health, organic and packaging (Lozeron & Victoria-Feser, 2010).

Factor analysis is a multivariate analysis technique and is used in this study to identify the common underlying factors among the different variables that have been classified in the conceptual framework.

## CHAPTER 4

### RESEARCH FINDING

This chapter will present the analysis of the conducted survey and the multivariate analysis of the gathered data.

#### 4.1 Demographic Data of Respondents

Personal data of the respondents obtained from questionnaires was analysed and presented in this section by using frequency and percentage distribution.

**Table 4.1** Demographic characteristics of correspondents following by Gender

Gender	Frequency	Percentage
Male	40	37
Female	69	63
<b>Total</b>	<b>109</b>	<b>100</b>

Findings from Table 4.1 discovered that the majority of respondents in terms of gender were female (63.0 %), followed by 40.0% of male respondents.

**Table 4.2** Demographic characteristic of correspondents following by Age

Age	Frequency	Percentage
20 years or younger	1	1
21 years – 30 years	62	57
31 years – 40 years	34	31
41 years – 50 years	5	5
50 years or older	7	6
<b>Total</b>	<b>109</b>	<b>100</b>

Table 4.2 shows that the majority of respondents, 62 people or 57% from the total of 109 were in the range of 21 -30 years. The second majority of respondents were 34 people or 31% in the age range of 31-40 years. 5 people or 5% of the respondents were in the age range of 41-50 years and 7 people or 6% of the respondents were 51 years or older. 1 person or 1% of the 109 respondents was 20 years old or younger.

**Table 4.3** Occupation characteristics of correspondents following by employment

<b>Employment Status</b>	<b>Frequency</b>	<b>Percentage</b>
Employed of wages	59	54
Self-employed	21	19
Out of work	2	2
Student	25	23
Other	2	2
<b>Total</b>	<b>109</b>	<b>100</b>

The result of Table 4.3 shows that the largest group of respondents were employed of wages (59 people or 54%), the second largest group were students (25 people or 23%) followed by respondents that were self-employed (21 people or 19%). The smallest group consist of both, participants that are out of work (2 people or 2%) and respondents that are in an employment status that was not listed in the survey (2 people or 2%).

**Table 4.4** Education characteristics of correspondents following by type of education

<b>Education</b>	<b>Frequency</b>	<b>Percentage</b>
Secondary modern school qualification	6	5
High school graduate	16	15
College undergraduate	15	14
College graduate	72	66
<b>Total</b>	<b>109</b>	<b>100</b>

Table 4.4 shows that the majority of respondents are college graduates (72 people or 66%), the second largest group are high school graduates (15 people or 14%). 15 people or 14% of the respondents were college undergraduates. The smallest group consist of participants that have as their highest degree a secondary modern school qualification (6 people or 5%).

## 4.2 Factor analysis

Factor analysis has been used to explore the possible underlying structure of the variables without any predetermined structure of the outcome. (Child, 2006).

Principal components analysis was conducted to analyse interrelations among the different variables used in this study in order to explain these variables in terms of their common underlying factors.

In order to find out if the gathered data is appropriate to be used in a factor analysis, the Kaiser-Meyer-Olkin measure of sampling adequacy was used. The KMO measure of sampling adequacy has to be between 0.5 and 1 to qualify the sample as suitable for factor analysis. The KMO of the first factor analysis conducted in this study was 0.755 (Table 4.5). A KMO measure of 0.709 (Table 4.6) in the final factor analysis of this study qualifies the data as appropriate for factor analysis. The Bartlett's Test of Sphericity should be significant ( $p < .05$ ) for factor analysis to be suitable. Table 4.5 shows a significance value of 0.0. Therefore, the test was significant (Hair, 1998).

**Table 4.5** KMO and Bartlett's Test first Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0,755
Bartlett's Test of Sphericity	963,66
df	300
Sig.	0

**Table 4.6** KMO and Bartlett's Test final Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0,709
Bartlett's Test of Sphericity	178,765
df	21
Sig.	0

The outcome of the first principal component analysis displayed in table 4.7 lists the eigenvalues associated with each linear factor or component. Before extraction, 17 factors were listed. The table also shows the eigenvalue in terms of variance. Factor 8 for example explains 4,4145 per cent of the total variance. After extraction, 8 components with a total eigenvalue greater than one were retained (Ladesma, 2007).



The remaining variables with factor loading greater than 0,4 were further examined observing cross loading, meaning and representation. In the next steps variable 11 (Q11), variable 12 (Q12), variable 22 (Q22), variable 15 (Q15), variable 14 (Q14), variable 25 (Q25) variable 6 (Q6), variable 16 (Q16), variable 17 (Q17), variable 2 (Q2) was eliminated due to cross loading. Variable 21 (Q21) was eliminated because it was the only representation of a particular factor. Variable 23, variable 26 and variable 5 were eliminated because they did not assimilate well to the other variables with the same assigned factor in terms of their meaning.

**Table 4.9** Total Variance Explained

Component	Percentage of Variance	Cumulative Percentage
1	36,003	36,003
2	24,893	60,926
3	11,219	72,146
4	8,619	80,765
5	7,523	88,288
6	6,547	94,834
7	5,166	100

Table 4.9 shows the total variance explained of the final principal component analysis conducted in this study. The table lists the eigenvalues associated with each linear factor or component. The table also shows the eigenvalue in terms of variance. After the final extraction, 2 components with a total eigenvalue greater than one were retained (Ladesma, 2007).

**Table 4.10** Rotated Component Matrix

Variable	Component 1	Component 2
Q10	0,841	
Q13	0,807	
Q3	0,8	
Q9	0,489	
Q19		0,81
Q24		0,782
Q18		0,767

Table 4.10 shows the outcome of the final variable reduction and the detected structure of relationships between the variables. Factor one (Q54) is determined by variable Q10, Q13, Q3 and Q9. Factor 2 (Q55) is determined by variable Q19, Q24 and Q18.

### 4.3 Regression

The regression analysis was run to predict dependent variable Q39 from the independent variables Q54 and Q55. The outcome of the analysis states that the independent variables Q54 statistically significantly predict the dependent variable Q39.

**Table 4.11** Reliability Statistics Q54

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Items
0,739	0,736	4

Cronbach's Alpha was used to determine the internal consistency and measure the reliability of factor 1 (Q54) displayed in table 4.10 and factor 2 (Q55) displayed in table 4.11. Factor Q54 has a Cronbach's Alpha of 0.739 and factor Q55 has a Cronbach's Alpha of 0.71. A Cronbach's Alpha of 0.7 is considered as the cut-off value for being acceptable.

**Table 4.12** Reliability Statistics Q55

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Items
0,71	0,712	3

Table 4.11 displays the R,  $R^2$ , adjusted  $R^2$ , and the standard error of the estimate. A  $R^2$  value of 0.157 indicates that Q54 and Q55 explain 15.7% of the variability of Q39.

**Table 4.13** MODEL Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,396a	0,157	0,141	0,81918

The F-ratio in table 4.12 tests if the data used is appropriate for the regression model. An F-ratio of 9.84 shows that the independent variables used in the regression analysis (Q54, Q55) predicts the dependent variable Q39 statistically significantly.

**Table 4.14** ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	13,217	2	6,608	9,848	,000b
Residual	71,132	106	0,671		
Total	84,349	108			

The unstandardized coefficients B values in table 4.14 are the values for the regression equation for predicting the dependent variable, Q 39 from the independent variables Q 54 and Q 55. The coefficient for Q 54 is .22. So for every unit increase in math, a 0.22 unit increase in Q 38, holding all other variables constant. The coefficient for Q 55 is .385. So for every unit increase in math, a 0.385 unit increase in Q 38, holding all other variables constant. The standardized coefficients are the Beta values in table 4.15. These coefficients would be obtained if all of the variables in the regression were standardized. Table 4.15 displays for Q55 a beta value of 0.328, which is twice as high as the beta value for Q54. Q55 with a significance level of 0.0 is significant. Q54 with a significance level of 0,065 is considered a p-value of less than 0.05 not significance.

**Table 4.15** Coefficients

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
Q54	0,22	0,118	0,169	1,867	0,065
Q55	0,385	0,107	0,328	3,61	0

## **CHAPTER 5**

### **SUMMARY, CONCLUSION & RECOMMENDATIONS**

#### **5.1 Summary**

The purpose of this study was to explore the possible underlying structure of the interrelations among different product attributes of healthy snacks drive motivation for customers to buy healthy snacks. Existing literature was examined to discover product attributes of healthy snacks and define snacks and healthy food. Reviewing the literature explained the importance of product attributes and how they satisfy customer needs and influence the buying decision of customers. The findings of the literature review were used to build the conceptual framework that explains the motivation to buy healthy snacks. A survey was conducted to gather primary data for a principal components factor analysis. This analysis has been used to explain the variables discovered in the literature review in terms of their common underlying factors. A regression analysis was conducted to examine the relationship between the motivation to buy and the factors that were determined due to the factor analysis.

#### **5.2 Conclusion**

The main purpose of the study was to find the underlying structure of interrelations among several product attributes. The choice of the different product attributes for this study is based on the literature. The end result shows two different factors. The first of the factors can be titled “health conscious” and consists of 4 parameters. 36,03 % of the total variance are explained by this factor which means that 36,06 % of the variability in all variables collected can be accounted by this factor. The second factor is “organic conscious” and includes three parameters. It is 24,9 % of the total variance and therefor this factor can account for 24,9 of the total variability. Factor one consists of the following three attributes: fat free, low in calories, low in cholesterol, and sugar free. The second factor consist of no artificial additives, environmental friendly production and no genetically modification. Based on those results, two different groups of motivation to buy can be qualified. Group one is motivated to buy snacks due to healthy characteristics and focuses on ingredients

and the nutritional value of the product whereas group two is more concerned and conscious about natural and organic traits of the product. Moreover, by conducting a regression analysis, the relations between the motivation to buy as the dependent variable and the factors “organic consciousness” and “health consciousness” as independent variables were examined. The result of the regression analysis shows that “organic consciousness” has a higher influence on the motivation to buy healthy snacks than “health consciousness”. What is more, even though “health consciousness” is not significant it was not removed, as it is nearly significant. The result of this study is important because it shows the product from a customer perspective and enables a healthy snack producer to focus on the product attributes that are important for customers.

### **5.3 Recommendations of the Study**

An in depth interview that investigates consumers perceptions of healthy snacks could further improve the conceptual framework, the questionnaire and the multivariate analysis by gathering more product attributes. The factor “health consciousness” turned out to be not significant and one could argue to remove this factor. This case should be investigated by further studies. The questionnaire contains question to measure health orientation. This model can be used to investigate relations between psychographics in terms of health orientation and the motivation to buy healthy snacks.

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**APPENDIX A**  
**SURVEY**

## Product attributes that drive consumers motivation when purchasing healthy snacks

I'm a graduate business student and as part of my final paper I would like to invite you to participate in a research study which aims at collecting data for product development of a new healthy coconut chip snack produced in Thailand that provides the body with essential nutrients and helps to improve overall health. Health aspects play a major role in the development of this product. Your privacy and confidentiality of the information you provide will be maintained in all published and written data analysis resulting from the study. This questionnaire will take about 10-15 minutes.

\*Required

### 1) Have you consumed a healthy snack in the last 4 weeks? \*

- Yes
- No

### 2) How often do you eat healthy snacks \*

- less than 1 time a week
- 1-2 times a week
- 3-4 times a week
- 5-6 times a week
- every day

### 3) How much do you spend on healthy snacks a week? \*

- 10 Euro or less
- 11-20 Euro
- 21-30 Euro
- 31 Euro or more

### 4) I mainly eat food that is low in fat \*

1    2    3    4

Strongly Disagree               Strongly Agree

### 5) I eat lots of fruits \*

1    2    3    4

Strongly Disagree     Strongly Agree

**6) I eat lots of grains \***

1 2 3 4

Strongly Disagree     Strongly Agree

**7) I eat lots of vegetables \***

1 2 3 4

Strongly Disagree     Strongly Agree

**8) How often do you exercise? \***

- daily
- weekly
- monthly
- less than monthly

**9) How often do you take mineral supplements? \***

- daily
- weekly
- monthly
- less than monthly

**10) How often do you take vitamin supplements? \***

- daily
- weekly
- monthly
- less than monthly

**11) When I buy a healthy snack I read the nutrition label on the package \***

1 2 3 4

Strongly Disagree     Strongly Agree

**12) I prefer sweet healthy snacks \***

1 2 3 4

Strongly Disagree     Strongly Agree

**13) I prefer healthy snacks that are low in calories \***

1 2 3 4

Strongly Disagree     Strongly Agree

**14) I prefer healthy snacks in packages that are easy to carry \***

1 2 3 4

Strongly Disagree     Strongly Agree

**15) I prefer healthy snacks in packages that are easy to open \***

1 2 3 4

Strongly Disagree     Strongly Agree

**16) I prefer healthy snacks that are re-closeable packages \***

1 2 3 4

Strongly Disagree     Strongly Agree

**17) I prefer healthy snacks made of local ingredients \***

1 2 3 4

Strongly Disagree     Strongly Agree

**18) I prefer healthy snacks that are high in protein \***

1 2 3 4

Strongly Disagree     Strongly Agree

**19) I prefer healthy snacks that are low in cholesterol \***

1 2 3 4

Strongly Disagree     Strongly Agree

**20) I prefer healthy snacks that are fat free \***

1 2 3 4

Strongly Disagree     Strongly Agree

**21) I prefer healthy snacks that are high in antioxidants \***

1 2 3 4

Strongly Disagree     Strongly Agree**22) I prefer healthy snacks that are high in minerals \***

1 2 3 4

Strongly Disagree     Strongly Agree**23) I prefer healthy snacks that are sugar free \***

1 2 3 4

Strongly Disagree     Strongly Agree**24) I prefer healthy snacks that are salt free \***

1 2 3 4

Strongly Disagree     Strongly Agree**25) I prefer healthy snacks that are low in sodium \***

1 2 3 4

Strongly Disagree     Strongly Agree**26) When I buy a snack I read the ingredients list on the package \***

1 2 3 4

Strongly Disagree     Strongly Agree**27) I prefer snacks in a clean-labeled package (clear and easy to understand labeling) \***

1 2 3 4

Strongly Disagree     Strongly Agree**28) I prefer healthy snacks that have been environmentally friendly produced \***

1 2 3 4

Strongly Disagree     Strongly Agree**29) I prefer healthy snacks without artificial additives (E.g. Flavor enhancers, Colorings....) \***

1 2 3 4

Strongly Disagree     Strongly Agree**30) I prefer healthy snacks with high nutritional value \***

1 2 3 4

Strongly Disagree     Strongly Agree**31) It is important for me that the healthy snack of my choice has a long shelf-life \***

1 2 3 4

Strongly Disagree     Strongly Agree**32) It is important for me that the healthy snack of my choice can be eaten without preparation \***

1 2 3 4

Strongly Disagree     Strongly Agree**33) When I buy healthy snacks I look at the best before date \***

1 2 3 4

Strongly Disagree     Strongly Agree**34) It is important that my choices of healthy snacks are not made of genetically modified ingredients \***

1 2 3 4

Strongly Disagree     Strongly Agree**35) I prefer salty healthy snacks \***

1 2 3 4

Strongly Disagree     Strongly Agree**36) I prefer healthy snacks that are high in vitamins \***

1 2 3 4

Strongly Disagree     Strongly Agree**37) Taking mineral supplements is important for my health \***

1 2 3 4

Strongly Disagree     Strongly Agree**38) Living life in the best possible health is very important to me \***

1 2 3 4

Strongly Disagree     Strongly Agree**39) I enjoy learning about health issues \***

1 2 3 4

Strongly Disagree     Strongly Agree**40) To stay healthy it's critical to be informed about health issues \***

1 2 3 4

Strongly Disagree     Strongly Agree**41) The amount of health information available today makes it easier for me to take care of my health \***

1 2 3 4

Strongly Disagree     Strongly Agree**42) It's important to me to be informed about health issues \***

1 2 3 4

Strongly Disagree     Strongly Agree**43) Eating lots of vegetables is important for my health \***

1 2 3 4

Strongly Disagree     Strongly Agree**44) Eating food that is low in fat is important for my health \***

1 2 3 4

Strongly Disagree     Strongly Agree

45) Eating lots of grains is important for my health \*

1 2 3 4

Strongly Disagree     Strongly Agree

46) Eating lots of fruits is important for my health \*

1 2 3 4

Strongly Disagree     Strongly Agree

47) Taking vitamin supplements is important for my health \*

1 2 3 4

Strongly Disagree     Strongly Agree

48) Exercising is important for my health \*

1 2 3 4

Strongly Disagree     Strongly Agree

49) Would you buy an all-natural coconut chip snack that provides your body with essential nutrients between normal meals and that is developed in accordance with your above mentioned preferences, if it will be launched next month? \*

1 2 3 4

Strongly Disagree     Strongly Agree

50) Please select your gender \*

- Female
- Male

51) Please select age range \*

- 20 years or younger
- 21 years - 30 years
- 31 years - 40 years

- 41 years- 50 years
- 51 years or older

**52) What is the highest level of education you have completed? \***

- secondary modern school qualification
- highschool graduate
- college undergraduate
- college graduate

**53) Employment Status: Are you currently...? \***

- Employed for wages
- Self-employed
- Out of work
- Student
- Other:

**54) Please select your favorite hobby \***

- working out
- reading books
- watching movies
- shopping
- arts / crafts
- running
- Other:

**55) Please enter your city of residence**

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