Dissertation

Can an ‘organic’ label influence the consumers’ perceptions towards a vice food product?

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Abstract

In contemporary society, food safety and increasing obesity rates have driven consumers to search for “healthier” and less processed foods (Droon and Verhoef, 2011), contributing to an increase in the consumption of organic foods (Hughner et. al., 2007). It has been suggested that the term “organic” on a products label affects the consumers’ attitudes towards the product (Magnusson et. al., 2003) and package labeling information is able to influence the consumers’ evaluations regarding the taste, quality and healthiness of the product in relation to other foods (see a review by Bublitz, Peracchio and Block, 2010). In this research, the case of organic vice food is examined. Vice food being a type of food which provides an immediate pleasurable experience but is potentially harmful for the consumers’ health (Doorn and Verhoef, 2011). Drawing on the “halo effect” theory, consumers’ evaluations and attitudes towards organic vice products are presented, indicating how consumers differentiate between organic and non-organic vice foods in terms of quality, taste and healthiness. To this end, two questionnaires, using the same constructs, the same brand and identical product stimuli, but with the organic label added onto the image in the second questionnaire, were distributed to a sample of 216 people. The product-application, which is buttermilk biscuits, belongs in the vice category of food since it is an energy-laden product which contains high levels of sugar and saturated fats. The results of these two questionnaires were analyzed using quantitative, statistical methods (SPSS) and indicate that in the vice food category, the organic claim on a products label is associated with better health but lower taste expectations. Moreover, no statistical differences are observable in consumer evaluations concerning the two types of products in terms of quality and nutritional value. Finally, females seem to hold a more positive attitude towards the organic vice products compared to men.

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Chapter 1. Introduction

1.1. Introduction

Drawing on the halo effect theory\(^1\), this study aims to examine whether the term “organic” may influence how Greek consumers perceive a food product, thus transforming an energy-laden product (vice)\(^2\) into a healthier option (virtue). Moreover, how such consumers differentiate between products that carry the value-laden tag “organic” compared to non-organic foods, and whether they rate them more highly, is analyzed. Finally, whether organic production enhances the consumers’ attitude towards the product, is discussed. The product-application, which is buttermilk biscuits, belongs in the vice category of food since it is an energy-laden product which contains high levels of sugar and saturated fats.

1.1.1. The organic food market

"Mom, look! Organic gummy bears!
Yes, I see. No more sweets.
Mom, but they’re organic."

- Overheard by one of the authors in the checkout lane of a natural foods store.

Schuldt and Schwarz, (2010).

During the last decade, the field of organic food has become increasingly available to consumers, while at the same time there has been a trend towards healthier eating and as a result, marketers have been able to take advantage of this trend (Hughner et. al., 2007). There are many definitions for what constitutes organic food. According to the existing scientific literature, the meaning of the term “organic” is not uniformly clarified (Wels, 2014). Chinnici et. al. (2002, p.188), suggests that organic products are: “Products which have less impact on the environment

\(^1\) The “halo effect” occurs when an individual’s evaluation of one attribute of an entity strongly influences or biases his or her perceptions of other attributes of that entity (Lee et. al., 2013).

\(^2\) Vices or "wants" (chocolates, biscuits, confectionary) are those products that provide an immediate pleasurable experience but are energy-laden and thus potentially harmful for one’s health (Doorn and Verhoef, 2011).
than comparable products”. Kavaliaske and Ubartaite (2014: p. 2), argue that: "Organic food is perceived by its composition (no harmful, modified ingredients are used), method of production (food is grown only in natural conditions with minimal impact to the environment), represented values (safe and healthy) and even social class (upper and medium)". While, Fotopoulos and Krystallis (2002, p.731), define organic food in accordance with the consumers’ profile: “Organic products are eco-products, suitable for consumers’ conscious of the ecology and the environment, who are health conscious.”

Previous findings regarding the organic food market, have revealed that it is quite difficult to state with confidence the actual size of the global organic market, but it can be said with certainty that it is growing remarkably and is considered to be one of the biggest growth markets in the food consumption industry (Hughner et. al., 2007). In developing economies all over the world, and especially in the European Union, the organic food market is one of the sectors that continually grows at such a quick pace (Chen 2007). To be more specific, financial information shows that this market has grown from 10 billion euros in sales in 2004 to reach 18.1 billion euros in 2010 (Schaack et al. 2012), 21.5 billion euros in 2011 and 22.8 billion euros in 2012 (Schaack et al. 2014). Thus, undeniably this market continues to grow as in the past decade sales have more than doubled.

However, according to Biomonitors (2009) research, although organic food constitutes a trend, its actual market shares remain small - in the European Market the aforementioned shares constitute for approximately 1.5% of the market- suggesting that while consumers theoretically seem to prefer organic food, in practice they are not willing to pay the price premium in order to obtain it (Bhattacharya and Sen, 2004; Verhoef, 2005).

Organic products can be organized into virtues or "shoulds" (milk, yogurt, and bread) that are in general good for one’s health and vices or "wants" (chocolates, biscuits, confectionary) that provide an immediate pleasurable experience but are energy-laden and thus potentially harmful for one’s health (Doorn and Verhoef, 2011).
Drawing on the halo effect theory, this study aims to examine whether the term “organic” may transform an energy-laden product containing sugar and saturated fats (vice) into a healthier option (virtue). Vice products or "wants" or even "sins", such as chocolates, biscuits, ice creams, confectionery and so on, provide an immediate pleasurable experience but are often bad for one’s health and high in calories (Doorn and Verhoef, 2011). As a result, vice products are usually associated with short-term goals for immediate satisfaction (e.g., eating a chocolate or chips) but are often incompatible with long-term goals (e.g., losing weight).

According to Baumeister (1998), consumers of vice products are characterized with having limited self-control and they attempt to find the direct benefits of delicious indulgences to be more important than long-term negative consequences (O’Donoghue and Rabin 2000).

1.1.2. Contributing factors that lead consumers to purchase organic food

Nowadays, noteworthy progress in the organic food market is observable. According to a survey conducted by the Organic Trade Association in 2006, non-organic foods’ sales remain at lower levels than sales of organic foods. The consumers’ interest in health, wellbeing and environmental concern, have greatly contributed to organic foods consumption globally (Kavaliauske and Ubartaite, 2014). Medias’ information about food safety, health concerns and environmental effects of pesticides, drove consumers and marketers to react, showing great interest in organic foods consumption (Hughner et. al., 2007). The dramatically increasing obesity rates along with problems in food safety drove consumers to search for healthier and less processed products (Food MarketWatch, 2008). Moreover, environmental problems, threat to animals and ethical lifestyle consist motives for consumers to search for organic products in order to ensure safety in food production. (Auger et al., 2008; Brom, 2000; Carrigan et al., 2004; Dawes, Honkanen et al., 2006; 1980; Williams and Hammitt, 2000; Laroche et al., 2001; McEachern and McClean, 2002; Magnusson et al., 2003). Yeung and Morris (2006), argue that the aforementioned motives lead consumers to be increasingly aware of food security, introducing new life styles, consumption orientations and values.
Doorn and Verhoef (2011) separated the motives that urge consumers to buy organic food into two groups. The first group is: "egoistic motives", and the consumers of this category can be known as: "unashamingly selfish" (Institute of Grocery Distribution, 2002; Vermeir and Verbeke, 2004), because they focus on the benefits that an individual will probably gain after the consumption of organic food. Consumers in this category consider that health, quality, nutrition and taste are the most important characteristics to consider when choosing to consume organic food (Table 1 summarizes the results of similar findings). The second group is: "altruistic motives", and in this category consumers consider that the protection of the environment and animal welfare are the most important characteristics (a review of studies is presented in Table 1). According to Pearson et. al. (2011), “egoistic motives” for purchasing organic products, are ranked highly when compared to altruistic ones. All these motives, along with a product’s particular characteristic such as organic, can influence the consumers’ willingness to buy organic food (Doorn and Verhoef, 2011).

<table>
<thead>
<tr>
<th>Egoistic Motives</th>
<th>Altruistic Motives</th>
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<tr>
<td><strong>Health</strong></td>
<td><strong>Protection of the environment</strong></td>
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<td>(Gil et. al., 2000; Squires et. al., 2001; Sanchez et. al., 2001; Magnusson et. al., 2001; Lockie et. al., 2002; Zanoli and Naspeti, 2002; Harper and Matkoumi, 2002; Makatouni, 2002; Verdurme et. al., 2002; Magnusson et. al., 2003; Chryssochoidis and Krystallis, 2005; Radman, 2005; Padel and Foster, 2005; Schmid et. al., 2007; Aguirre, 2007; Chen, 2007; Tsakiridou et. al., 2008; Hamzaoui and Zahaf, 2008; Chen, 2009; Haghir et. al., 2009; Bisirir and Gheblawi, 2012; Kriwy and Mecking, 2012; Oliveira et. al., 2012; Aygen, 2012; Justin and Jyoti, 2012)</td>
<td>(Davies et. al., 1995; Sanchez et. al., 1997; Zotos et. al., 1999; Sanchez et. al., 2001; Squires et. al., 2001; Makatouni, 2002; Arcas et. al., 2002; Padel and Foster, 2005; Lea and Worsley, 2005; Durham and Andrade, 2005; Honkanen et. al., 2006; Schmid et. al., 2007; Tsakiridou et. al., 2008; Chamorro et. al., 2009; Kriwy and Mecking, 2012; Pino et. al., 2012; Oliveira et. al., 2012; Padilla et. al., 2013)</td>
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<td><strong>Quality and Nutrition</strong></td>
<td><strong>Animal Welfare</strong></td>
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<td>(Sanchez et. al., 1997; Lubieniechi, 2002; Radman, 2005; Rodriguez, 2006; Chen, 2007; Magistris and Gracia, 2008; Bisirir and Gheblawi, 2012)</td>
<td>(Makatouni, 2002; Padel and Foster, 2005; Honkanen et. al., 2006; Stobbeelaar et. al., 2007; Schmid et. al., 2007).</td>
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<td><strong>Taste</strong></td>
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<td>(Zotos et. al., 1999; Verdurme et. al., 2002; Millock et. al., 2004; Chryssochoidis and Krystallis, 2005; Radman, 2005; Lea and Worsley, 2005; Rodriguez, 2006; Schmid et. al., 2007; Roitner-Schobesberger et. al., 2008; Chamorro et. al., 2009).</td>
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1.1.3. The influence of the “halo effect” on the consumers’ perceptions

There is evidence that the term "organic" on a product's label is able to significantly affect (favorably or not), the consumers’ purchases. For instance, the majority of consumers, associate the term "organic" with the term "healthy", considering that organic food is healthier than non-organic food (Magnusson et. al., 2003). Therefore, it is important to investigate how labels can influence consumers' purchasing behavior and whether they are truly favorable for helping consumers to identify a healthy diet.

Previous research indicates that package labeling information are able to influence consumers' evaluations towards healthiness of a product, playing a significant role on how much they are willing to consume that product (Bublitz, Peracchio, and Block, 2010, for a review). Nowadays, consumers evaluate a product not only based on traditional quality aspects, such as taste and appearance, but they are increasingly interested in information referring to a product's nutritional value, to the absence of residues and even in the process that has been followed during the stage of production (Torjusen, Lieblein, Wandel, and Francis, 2001; Wilkins and Hillers, 1994).

The degree to which a consumer is interested in a product’s labeling information, shows his/her involvement with the product. Based on the results of previous research (Park, Iyer, and Smith, 1989), consumers that tend to buy a product on a regular basis, have low-involvement in the search of the product's information and brand (Beharrell and Denison, 1995; Brucks, Mitchell, and Staelin, 1984; Silayoi and Speece, 2004).

“The halo effect occurs when an individual’s evaluation of one attribute of an entity strongly influences or biases his or her perceptions of other attributes of that entity” (Lee et. al., 2013). This phenomenon, significantly influences the consumers' evaluations of health claims on products' packages, meaning that a health claim on a product's label could lead people to perceive the product as healthier and be more willing to buy it (Roe, Levy, and Derby, 1999).
1.2. Importance of the study and the research gap

Drawing on the “halo effect”, the present research contributes to the research stream of food's labeling on consumption by attempting to answer the question of whether the term organic, may transform an energy-laden product (vice) into a healthier option (virtue) in the mind of the consumer. The findings of the research should reveal how quality, taste and healthiness of a vice food could be affected by the presence of an “organic” tag. This examination will also include the interplay of customers’ attitudes and the role of demographics.

Previous studies in the field of organic foods consumption have focused on understanding the differences between virtue and vice organic foods and the consumers’ willingness to pay for them (Doorn and Verhoef, 2011) and the role of health consciousness, food safety concerns and ethical identity on attitudes and intentions towards organic food (Michaelidou and Hassan, 2010). Due to this, there is limited evidence on the masking role of “organic” value on the consumers’ health perceptions and willingness to buy a value-laden product (i.e., organic buttermilk biscuits). Most previous research has principally investigated the individual or combined effect of factors on the consumers’ attitude and/or preference for mainly organic foods (e.g. Chen, 2007; Gifford and Bernard, 2006; Lockie et al., 2002) leaving the role of other factors, such as the influence of the “halo effect” on the customers’ evaluations, unexplored.

Past research has examined how organic labels bias taste expectations (Lee, Shimizu, Kniffin and Wansink, 2013) and investigated how “health halos” result from social ethics claims (Schuldt and Hannahan, 2012).

To the best of the researcher’s knowledge, there is no similar study examining whether the “halo effect” phenomenon influences the consumers’ attitude towards organic and non-organic food (i.e., buttermilk biscuits).

1.3. Research objectives

Operatively, the objectives were to obtain empirical evidence about (1) whether organic vice products were seen as superior to non-organic ones in terms of quality, taste and healthiness
and (2) whether consumers hold a more positive attitude towards them, as result of their “perceived” superiority. To address the objectives of the study, two questionnaires with identical questions but a differently labeled product (namely organic buttermilk biscuits versus non-organic buttermilk biscuits), keeping the same brand and same product image, were distributed to a sample of 216 people (resulting in 112 fully completed questionnaires for the buttermilk biscuits and 104 for the organic buttermilk biscuits). The product-application, belongs in the vice category of food since it is an energy-laden product. The product in the distributed image refers to a fictional brand named “Arty” (see Figure 1).

![Figure 1: Images of the Arty (non-organic and organic) Buttermilk biscuits](image)

By doing this, comparisons between the differences in consumers’ evaluations on important variables, such as quality, taste and healthiness between the two products and an examination of the consumers’ attitude towards these products will be possible.

### 1.4. Overview

The introduction in Chapter 1 presents the importance of the study, analyzes the major factors that this study focuses on and provides some initial information about the topic. The literature review in Chapter 2 provides an analysis of the literature drawing on the influence of the “halo effect” theory on consumers’ possible attitudes towards quality, taste and health perceptions in the category of vice food and gives an insight to how consumers differentiate products that carry
claims such as “organically produced”, examining their willingness to buy and their attitude towards the product. Additionally, the development of the hypotheses are presented in this chapter. Chapter 3 analyzes the methodology used to conduct the study, while Chapter 4 presents the findings of the research after the statistical analysis. Finally Chapters 5 and 6, are dedicated to the “Discussion and conclusions” of the study and the “Managerial implications, limitations and suggestions for further research”, respectively.
2.1. Introduction

This chapter reviews the extent to which the “halo effect” phenomenon influences taste, quality and health perceptions in the category of vice food. Specifically, this chapter offers empirical findings of whether the existence of an organic claim in a product’s label may transform an energy-laden product (vice) into a healthier option (virtue). Moreover five hypotheses are developed and analyzed.

2.2. The effect of the “halo effect” phenomenon on how consumers judge food

Product claims on food packaging, such as the use of the term “organic”, can promote both positive and negative impressions on the consumers’ perceptions of the product (Schuldt and Hannahan, 2012). The term "organic" on a product’s label, includes a strong ethical claim, able to bias experiences and taste expectations and this was pointed out by Wolfson and Oshinsky back in 1966.

Roe et al. (1999) report, that health claims on the front label of the product favor the generation of a “halo effect”. Health “halo effects” have been found to happen when consumers evaluate the product in accordance with the health claims that exist on the food packages (Schuldt and Hannahan, 2012). In practice that means that due to the fact that consumers are influenced by the existing health claim (e.g. organic) they will not search for further information regarding the product (such as nutritional value, calories and so on) and they will focus their attention only on the information of the front label. Hence, consumers automatically assess the product as healthier than it truly is and do not engage substantially with the product’s characteristics. Take for example, Andrews, Burton and Netemeyer’s (2000) research findings, which shown that the term “organic” or the term “no cholesterol” on food packages, promote the misconception that those products are “low in calories” or “low in fat” respectively.
Moreover, Provencher et al. (2009), suggested that when a snack is considered as healthier (due to its labeled information), consumers are willing to consume it on a more regular basis. Moving on, it has been proved that health claims of food may bias estimations of its caloric content (Carels et al., 2006; 2007). In other words, consumers tend to believe that a healthier product is lower in calories and an unhealthy product is higher in calories (Carels et al., 2006; 2007).

Furthermore, it has been demonstrated that consumers believe that organically-labeled products, in addition to being lower in calories and fat, are higher in nutrition and fiber (Lee et al., 2013). This reveals that the health “halo effect” has an impact upon not only the caloric content but also the fiber content.

It is noteworthy to mention, however, that the existence of an organic claim does not always drive individuals to rate a product positively (Lee et al., 2013). Food labels can also strongly influence taste expectations and experiences (Wolfson and Oshinsky, 1966). Schuldt and Hannahan (2013) found that although organic products were considered healthier to their conventional counterparts, they were assessed as less tasty (Westcombe and Wardle, 1997). Thus, while products classified as “organic”, carry strong healthy indications, they are often negatively rated in terms of taste (Tuorila, Cardello, and Lesher, 1994).

2.3. Determinants for organic vice foods consumption

2.3.1. Quality and taste in foods consumption

"Quality consists of a product's utility-generating benefits, such as taste, maintainability, freshness, and product appearance" (Steenkamp and Van Trijp, 1996). Previous research has shown that taste and quality are among the main incentives for consumers to determine whether they will buy organic food (Bourn and Prescott, 2002; Haglund, Johansson, Berglund, and Dahlstedt, 1998; McEachern and McClean, 2002).
Vice food is inextricably connected with pleasure and fun (Khan and Dhar, 2006; Okada, 2005). Due to this inseparable connection, value-laden tags such as “organically produced” will have a negative effect on the product since the amount of enjoyment and pleasure that its consumption offers will be diminished (Khan and Dhar, 2006; Okada, 2005). Doorn and Verhoef (2011) found, that in peoples’ minds, claims, such as “organic”, mean that a product becomes healthy, so it might reduce the satisfaction, which is associated with vice consumption. Moreover it is suggested that a nourishment assumption drives to negative quality conclusions for regular vice products (Khan and Dhar, 2006; Okada, 2005). On the other hand, the organically-labeled products are rated as more nutritious than the non-organic ones, driving consumers to hold positive quality perceptions for this category of food (Lee et al., 2013).

Certain claims on a products packaging, such as the organic label may bias taste expectations, since the term “organic” holds strong health indications (Harris Interactive, 2007; Wansink and Chandon, 2006) and the product may be considered as less tasty when compared with products that do not carry the organic claim. Regarding taste, Tuorila et al. (1994) argue that individuals seem to evaluate healthy products as less tasty. Moreover, according to Bourn and Prescott (2002), empirical evidence suggests that the unconvincing taste of organic vice products, is one of the main reasons why consumers prefer not to buy them. Schuldt and Hannahan’s (2013) recent findings are in line with the aforementioned suggestion, proving that organic food is perceived as less tasty compared to regular food. In other words, when other elements such as “organic” are added the taste perceptions of customers may be diminished. However, the organic claim may increase health perceptions towards this type of vice products in comparison to those that are on sale solely as vice (Tregear et al., 1994; Magnusson et al., 2001; Baker et al., 2004; Lockie et al., 2004; Lea and Worsley, 2005; Padel and Foster, 2005). For example, Lee’s et al., (2013) findings, revealed that simple cookies are not perceived as healthy products. Additionally, it is mentioned that, value-laden tags such as “organically produced” would definitely make cookies a healthier but less tasty choice. Finally, Schuldt and Hannahan’s (2013) findings revealed, that products that carry claims such as “organic” were perceived as healthier than their counterparts but they were rated as less tasty (Westcombe and Wardle, 1997).
2.3.2. The role healthiness plays in the consumers food choice

"Vice-lovers" are those consumers who aim to meet a taste goal from the consumption of an unhealthy product and ignore any assorted negative side effects (i.e., weight gain and so on) (Glanz et al. 1998; Stewart et al. 2006). In other words, “vice-lovers” believe that unhealthy equals tasty nutrition (Raghunathan et al. 2006), so they tend to prioritize taste over health goals once those goals cannot be addressed at the same time (Dhar and Simonson 1999, Stewart et al. 1996). "Therefore, the ability to meet a health goal decreases at a rate proportionate to the relative proportion of vice in an option" (Hsee and Rottenstreich 2004; Peggy J. Liu, Kelly L. Haws 2014). Although, there is a point at which the increasing concave tastiness and the decreasing linear healthiness function meet each other. This point is called the "taste-health balance point" (Liu and Haws, 2014). At this point consumers will try to address taste and health goals simultaneously, reaching the "taste-health balance point". Here is the point at which we can introduce value-laden tags such as “organic”, in the category of vice food. An organic claim of vice food, will probably result in a larger difference for the health understanding due to the fact that it is already perceived as unhealthy (Wansink, Van Ittersum, and Painter, 2004). According to Harris Interactive findings (2007), the appearance of value-laden tags, such as the term "organic", on packages of vice products (such as chocolates, ice creams, biscuits, chips and so on) generates morality concerns, once this term includes strong connotations of healthiness and may mislead the consumers. Health reasons and health consciousness play an important role in the willingness that consumers show towards obtaining organic vice products (Hutchins and Greenhalgh, 1997; Schifferstein and Oude Ophuis, 1998; Verhoef, 2005). According to Magnusson's research (2003), health seemed to be the strongest motive for purchasing organic products. The fact that organic products are more nutritious (Tregear et al., 1994; Magnusson et al., 2001; Baker et al., 2004; Lockie et al., 2004; Lea and Worsley, 2005; Padel and Foster, 2005) make consumers believe that in this way their personal prosperity will be increased (Williams and Hammit, 2001). Organic food is considered to be healthier than conventional food due to the lower level of pesticides and fertilizers that are used during the stage of production (Hutchins and Greenhalgh, 1997; Schifferstein and Oude Ophuis, 1998). As a result consumers consider an
organic option as a healthier choice to conventional food (Tregear et al., 1994; Magnusson et al., 2001; Baker et al., 2004; Lockie et al., 2004; Lea and Worsley, 2005; Padel and Foster, 2005). Previous studies support the aforementioned conclusion, indicating that organic vice food is considered to be healthier than conventional vice food. This explains the positive effect of organic assertion on health benefits (Hutchins and Greenhalgh, 1997; McEachern and McClean, 2002; Schifferstein and Oude Ophuis, 1998).

2.3.3. The role of demographics in a products evaluation

The purchase of organic food is usually affected by demographic variables (Davies et al., 1995; Thompson, 1998), which define the organic consumer's profile (Padel and Foster, 2005; Stobelaar et al., 2006). Previous research claims that, consumers’ attitude towards organic vice food, as well as their intention to buy these products (Wier et al., 2008), varies according to specific demographic factors. Some of these factors are income, gender, age and level of education (e.g. Batte et al., 2007; Hughner et al., 2007; Wier et al., 2008). In general, consumers who purchase organic products more frequently are usually highly educated and of higher socio-economic class (Padel and Foster, 2005; Stobelaar et al, 2006). In fact, evidence indicates that highly educated consumers are usually more willing to buy organic products (Maloney, Ward and Braucht, 1975). Consumers of middle and upper class are more willing to pay higher amounts to purchase organic food (Wier's et. al., 2008). That means that although young people usually seem to behave in a more sustainable way, older people are those than can afford it and do so, due to the privileged financial position in which they are in (Dunlap and Van Liere, 1978; Scott and Willits, 1994). Mintel (2000) argues that young people place a low emphasis on health and diet, so they seem to be unwilling to pay the price premium in order to consume an organic vice product. Previous research shows that willingness to buy organic food is intrinsically connected with age and income (Padel and Foster, 2005; Roitner-Schobesberger et al., 2008). Yet, on the contrary, Lockie et. al. (2004) claims that income and age have little effect on purchase intention. Furthermore, Winterich, Mittal and Ross (2009), found that women, opposed to men, are willing to pay more in order to obtain organic products, because they are more concerned with communal goals.
Likewise, Knight and Warland (2004) support this claim about women, explaining that, compared to men, they are more willing to pay for the organic claim of food, as in this way they ensure the safety in food for their family members. Moreover, Yiridoe et. al. (2005), added that women have a higher health consciousness and usually shape the eating habits of a family (Fagerli and Wandel, 1999).

2.4. Conceptual model and development of hypotheses

"A consumer's choice for or against organic food, can be framed as a social dilemma, in which he or she must weigh individual motives, such as quality and healthiness considerations, against collective or social interests, such as a better environment" (Doorn and Verhoef, 2011, p: 168).

This study aims to examine consumers’ attitudes towards vice products that, carry value-laden tags such as “organically produced”, compared to conventional vice ones. Various factors that influence the consumers' intention to buy organically produced food or not will be examined, along with the extent to which this intention is affected by the “halo effect”.

The following conceptual model supposes that value-laden claims affects the evaluation of a product significantly. An organic claim may act as an additional product attitude for which consumers are willing or unwilling to pay the price premium. The term "organic" plays a key role in the consumers' mind and has become a highly evocative word. Consumers often consider that "organic" equals "better", because the consumption of organic products offers more benefits and it is linked with superiority over conventional food (Magnusson et. al., 2003). This connection creates a favorable attitude towards organic products (Parras-Rosa, Murgado-Armenteros and Torres-Ruiz, 2013). However, negative evaluations have been observed due to a product’s organic claim (Lee et. al., 2013).

Key factors included in the model are: the importance of the “halo effect” phenomenon on the two different products’ (organic and non-organic buttermilk biscuits) quality, taste, healthiness
and nutritional expectations, and the extent to which demographic factors influence attitudes towards vice foods consumption.

Figure 2- Proposed Model

Using the existing literature review, the hypotheses will be justified.

Five hypotheses have been formed in order to determine how consumers differentiate organic vice products to non-organic ones.

The level of quality plays a fundamental role in food choice (Bourn and Prescott, 2002). As already mentioned, a product’s quality, includes characteristics such as taste, freshness and appearance (Steenkamp and Van Trijp, 1996). Given findings from previous research, it is proposed that, consumers consider quality as one of the most important characteristics when assessing food. In the case of vice food, consumers seem to rate the quality of products, which labels include claims such as “organic” more highly compared to non-organically labeled products. Moreover, the existence of the term “organic” in the label, can mislead the consumers’ perception of the product (halo effect) and make them unwilling to search for further information regarding the product's nutritional value and its method of production. Moving on, Schuldt and Hannahan’s (2013) recent findings, reveal that products that carry claims such as “organic” were
rated as less tasty compared to conventional ones (Bourn and Prescott, 2002). As such it could be hypothesized that:

**H1: The quality of organic buttermilk biscuits is better than that of non-organic buttermilk biscuits.**

**H2: The non-organic buttermilk biscuits are rated as tastier than the organic ones.**

Furthermore, health concerns may influence a consumer’s decision whether to purchase organic vice food or not (Schifferstein and Ophuis, 1998; Steptoe, Pollard, and Wardle, 1995). It is noteworthy to mention that the food’s healthiness, is considered to be one of the most significant individual-oriented motives for consumers (Oliveira et. al., 2012; Aygen, 2012; Justin and Jyoti, 2012). There is evidence that consumers consider an organic option as a healthier choice when compared to conventional food (Tregear et al., 1994; Magnusson et al., 2001). The health “halo effect”, could not be omitted from that conceptualization. Health “halo effects” have been found to occur when consumers evaluate the product in accordance with the health claims (e.g. organic) that exist on the food packages (Schuldt and Hannahan, 2012). As such it could be hypothesized that:

**H3: The non-organic buttermilk biscuits are perceived as unhealthier than the organic ones.**

**H4: The organic buttermilk biscuits label yields more positive nutritional expectations (e.g., lower in fat, higher in nutrition and fiber) from consumers than the non-organically labeled biscuit.**

Socio-demographic factors, affect the consumers’ decision for or against organic foods consumption (Wier et. al., 2008). Income, gender, age and educational level are factors which may affect consumers’ opinions and attitudes towards organic foods consumption (Batte et al., 2007; Hughner et al., 2007; Wier et al., 2008). Based on previous research (Padel and Foster, 2005; Stobbelaar et. al., 2006; Knight and Warland, 2004; Yiridoe et. al., 2005), it could be hypothesized that:

**H5a: The (1) highly educated, (2) females and those coming from (3) higher socio-economic status (SES) will hold positive attitudes to the organic buttermilk biscuits.**

**H5b: The (1) highly educated, (2) females and those coming from (3) higher socio-economic status (SES) will hold negative attitudes to the non-organic buttermilk biscuits.**
Chapter 3. Research methodology

3.1. Introduction

This study aims to examine consumers’ attitudes towards vice products that carry value-laden tags, such as “organically produced”, compared to vice conventional ones. To this end, two specially designed questionnaires - using constructs from previous studies (Doorn and Verhoef, 2011; Provencer, Polivy and Herman, 2009; Chandon and Wansink, 2007; Michaelidou and Hassan, 2010) - in the Greek language were electronically distributed in Thessaloniki, to 216 volunteers, aged 18 to 60 years old. An age limit was not set at the outskirts of this research. However, it turns out that there were no respondents above 60 years of age and perhaps this is due to the fact that less members of the older generation have email and Facebook accounts. Likewise, there were no younger respondents under 18 years of age, probably due to the subject matter. SPSS was used for the analysis of the data. This chapter discusses methodological research issues, including questionnaire and data collection procedures.

3.2. Methodology

Since this dissertation is based on empirical study, appropriate quantitative research techniques were developed. This approach was determined on the basis of similar previous studies that used the same method (Doorn and Verhoef, 2011; Provencer, Polivy and Herman, 2009; Chandon and Wansink, 2007; Michaelidou and Hassan, 2010) when examining respective research questions. This dissertation aims to create a more focused research and come up with more conclusive results, compared to qualitative approaches.

In order to test the five research hypotheses set in the previous section, two specially designed questionnaires were utilized. The questionnaires (constructs and scales) are in accordance with previous research of similar subjects, which examined the role that the term “organic” plays in a consumer’s attitudes and in food consumption (Doorn and Verhoef, 2011; Provencer, Polivy and Herman, 2009; Doorn and Verhoef, 2011 as adopted by Moorman, 1990; Chandon and Wansink, 2007). Since this research took place in Thessaloniki, Greece, all questionnaires were translated
into the Greek language to ensure that respondents could fully comprehend the questions thus providing more reliable responses.

3.3. Questionnaire

Two identical questionnaires, with the same product image and fictional brand, but with the additional “organic” term on the second questionnaire’s stimuli, were distributed to a sample of 216 people in total. From them, 112 people answered the questionnaire for the non-organic buttermilk biscuits and 104 for the organic buttermilk ones. The product-application, which is buttermilk biscuits, belongs in the vice category of food. Each questionnaire consisted of five separate sections.

Section A aimed to examine the respondents’ perceptions towards the quality of the product shown in the picture. Respondents were asked to rate the shown snack from 1 to 10 (similar to Van Doorn and Verhoef, 2011).

Section B focused on the consumers’ perceptions about the healthiness of the snack shown. Respondents were asked to rate how healthy they believed the snack to be, choosing on a seven point scale: from 1=very unhealthy to 7=very healthy, and whether this snack could be included in a healthy menu, choosing on a seven point scale: from 1=very inappropriate to 7=very appropriate. Moreover, the effect that the consumption of this snack could have on their weight was asked, choosing on a seven point scale: from 1=weight loss to 7=weight gain. All constructs in this section were in accordance with Provencer, Polivy and Herman, (2009).

Section C was dedicated to the respondents’ health consciousness, in accordance with Doorn and Verhoef, 2011 as adopted by Moorman, (1990). Section D and E, as adopted by Chandon and Wansink, (2007), examined the consumers’ nutritional involvement and the role of eating healthily, respectively. In these sections, respondents were asked to answer the questions, choosing on a seven point scale: from 1=strongly disagree to 7=strongly agree.
Afterwards, Section F examined the consumers’ attitudes towards the product and their taste expectations. Respondents were asked to rate those factors choosing on a seven point scale: from 1=bad to 7=good, from 1=unpleasant to 7=pleasant and from 1=dislike to 7=like.

Finally, section G consisted of demographical questions, regarding gender, age, education and income (See Appendix 1, for full survey questionnaire).

3.4. Sampling and data collection

Data were collected from a sample of 216 consumers aged 18 to 60 years old, in Thessaloniki. The questionnaires were distributed electronically and they were available at:

https://docs.google.com/forms/d/19gbLS3c9SUR-JX_3LuJYywFwAlcK4bUVdTQsSwap6Dk/viewform
https://docs.google.com/forms/d/1uj7n8GsR1lq7D3fyKw6PilqSkMoCnt19XjbY7xa-IOc/viewform

“Snowball sampling”\(^3\) was used for the distribution of the questionnaires. This was achieved by contacting acquaintances, who met the participation criteria of the study, in that they were Greek, lived in Thessaloniki and were in the target age group, via email or Facebook messages. In an effort to increase the sample size, the participants were kindly asked to forward the questionnaires to their friends or acquaintances, as long as they met the criteria.

Questionnaires were electronically distributed during November 2014. A significant advantage of the questionnaires’ online completion, is that they could not be submitted if they were not fully completed. That ensures the absence of unanswered questions. However, the main disadvantage of this method is that there is no immediate way of assessing how many candidates chose not to complete the questionnaire. This obliterates the potential of identifying whether there is a non-response bias and its size. In this research, 216 fully completed questionnaires were collected. This number is sufficient especially considering the time limitation encountered.

\(^3\) “A sampling procedure may be defined as snowball sampling when the researcher accesses informants through contact information that is provided by other informants (Noy, 2008)”.
3.5. Tools for statistical analysis

Data collected from the questionnaires were analyzed using SPSS, a statistical software package. Firstly, outcomes regarding basic descriptive statistics were exported, such as mean and standard deviation. Continuously, indicators such as Cronbach alpha\(^4\), were used, in an attempt to assess the constructs. The following chapter presents, in detail, all the tools that were used in the statistical analysis.

3.6. Conclusion

In this chapter, all the necessary information, regarding research methodology and data collection that is required for testing the hypotheses presented in chapter 2 has been reported. The results of the aforementioned analysis are presented in the following chapter.

\(^4\) Cronbach alpha is an index of reliability (Cronbach, 1951) that aims to measure the level of consistency that exists between used items and the related constructs (Cronback, 1951; Tavakol and Dennick, 2011). Construct is the hypothetical variable that is being measured (Hatcher, 1994).
Chapter 4. Findings

4.1. Introduction

This chapter presents the findings of the study. Analytically, at first, the demographic composition of the sample (age, gender, education and socio-economic status) is presented, followed by the correlation matrix. Last but not least, the analysis of the hypotheses testing is stated.

4.2. Demographic composition

The sample population consisted of 216 participants, of which 112 answered the buttermilk biscuits questionnaire and 104 answered the organic buttermilk biscuits questionnaire.

Figure 3 indicates that the majority of the respondents are younger than 30 years old (93 individuals - 83% for the buttermilk biscuits questionnaire and 89 individuals - 85% for the of organic buttermilk biscuits). The immediate following age group, is that of people between 31 and 40 years old, with 13 individuals (12%) answering the questionnaire for buttermilk biscuits and 10 individuals (10%) answering that for organic buttermilk biscuits. The minority of answers came from older people aged from 41 to 50 years old - that constitutes a percentage of 5% and 3% for non-organic and organic biscuits questionnaire respectively, and from people older than 50 years old - 0% and 2% respectively.

Figure 3 - Age composition of the sample
Figure 4 presents the proportion of men and women that answered the two questionnaires. The first questionnaire (buttermilk biscuits) was answered by 78 women (70%) and 34 men (30%), while the second questionnaire (organic buttermilk biscuits) was answered by 66 women (67%) and 38 men (33%). In total, 144 women and 72 men participated in the completion of the two questionnaires. It can be observed that a higher percentage, 66.7%, of women participated compared to 33.3% of men in the total sample.

Figure 4 - Gender composition of the sample

Figure 5 presents the educational composition of the sample. It can be observed that the majority of answers came from people that hold a university degree. For the first questionnaire, those people were 59 (53%) and for the second questionnaire 50 (48%). Thereafter, people that hold a master degree were 36 (32%) and 29 (28%) in the buttermilk and organic buttermilk biscuits questionnaire respectively. Individuals that completed postgraduate education were 4 (3%) for the first questionnaire and again 4 (4%) for the second questionnaire. Finally, people that only completed elementary education were 1 (1%) for the first questionnaire and 0 (0%) for the second.
The scale used to measure the socio-economic status revealed that the majority of the participants belong in low economic classes with a yearly income lower than €14.000 (80.36% for the buttermilk biscuits questionnaire and 75% for the organic buttermilk biscuits questionnaire). It could be assumed that the present Greek economic recession, may account for individuals’ lower economic status.

The present unstable global and domestic economic situation is changing socio-demographic factors at a rapid pace. As a result, the topic matter will need to be re-examined as the
aforementioned factors influence consumers' attitudes and perceptions towards organic foods consumption.

4.3. Cronbach’s alpha

Cronbach’s alpha is an index of reliability (Cronbach, 1951) that aims to measure the level of consistency that exists between used items and the related constructs (Cronbach, 1951; Tavakol and Dennick, 2011). "Construct is the hypothetical variable that is being measured" (Hatcher, 1994). Cronbach alpha is expressed as a number between 0 and 1 (Tavakol and Dennick, 2011), with higher values indicating better reliability (Cronbach, 1951).

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Cronbach alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthiness of the product</td>
<td>0.701</td>
</tr>
<tr>
<td>Taste of the product</td>
<td>0.902</td>
</tr>
<tr>
<td>Eating healthily</td>
<td>0.750</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.890</td>
</tr>
</tbody>
</table>

Table 2 - Cronbach alpha values for all constructs

The results indicate that all question sets were reliable. As all constructs have a Cronbach value above 0.7, they can be considered of high reliability, thus are suitable for further analysis (Nunnaly, 1978).

4.4. Descriptive statistics

Table 2 presents some basic features of the data, such as mean and standard deviation of each construct. Mean being the mathematical average of a set of two or more and standard deviation is a measure of the dispersion of set of data from its mean. The more spread apart the data, the higher the deviation. It can be noted in the following table that all the data are around 1.00 point from the mean, a fact that indicates that there is no high dispersion of data in any construct.
<table>
<thead>
<tr>
<th>Constructs</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – buttermilk biscuits</td>
<td>216</td>
<td>0.4815</td>
<td>0.50082</td>
</tr>
<tr>
<td>1 – organic b. biscuits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>216</td>
<td>4.7176</td>
<td>1.09496</td>
</tr>
<tr>
<td>Healthiness</td>
<td>216</td>
<td>5.2130</td>
<td>1.10011</td>
</tr>
<tr>
<td>Eating healthily</td>
<td>216</td>
<td>4.7176</td>
<td>1.53376</td>
</tr>
<tr>
<td>Attitude</td>
<td>216</td>
<td>5.0139</td>
<td>1.06982</td>
</tr>
<tr>
<td>Taste</td>
<td>216</td>
<td>5.0648</td>
<td>1.19253</td>
</tr>
<tr>
<td>Income</td>
<td>216</td>
<td>1.3009</td>
<td>0.67321</td>
</tr>
<tr>
<td>Education</td>
<td>216</td>
<td>3.2130</td>
<td>0.76006</td>
</tr>
<tr>
<td>Age</td>
<td>216</td>
<td>1.2176</td>
<td>0.55729</td>
</tr>
<tr>
<td>1 – Male</td>
<td>216</td>
<td>1.6667</td>
<td>0.47250</td>
</tr>
<tr>
<td>2 - Female</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 3- Descriptive statistics**

From the data shown in the table above, it can be observed that “quality” and “eating healthily” have a mean of 4.7176. This value indicates that respondents consider that the product is of high quality answering between *neither agree nor disagree* (4) and *probably agree* (5) as well as that eating healthily is important for them answering again between (4) and (5). The respondents’ attitude towards the product, healthiness and taste expectations have a mean of 5.0139, 5.2130 and 5.0648 respectively. These values indicate that answers for these variables range between *probably agree* (5) and *agree* (6), suggesting that consumers evaluate the product in terms of healthiness and taste highly and that they hold positive attitude towards the product. Moreover, the mean value of the age variable was around 35 years old (1.2176). Most respondents hold a university degree and belong to the low to middle socio-economic class.

**4.5. Correlation Matrix**
Correlation analysis measures the nature and the strength of the relationship between two variables only. Value 1, is only observed among the correlations of one variable with itself and represents the perfect positive correlation. A value of 0.00 represents a lack of correlation and that of -1, represents the perfect negative correlation, a value that does not exist in the matrix above. This absence of a perfect negative correlation (-1) happens because all values above 10%
(0.1) are considered as insignificant and thus rejected. In figure 7, some very strong correlations between certain variables are observed. The highest positive and significant correlation values can be observed between attitude and taste (0.469), between attitude and quality (0.324) as well as between quality and taste (0.228). Moving on, it can be observed that females are guided in their food preferences, more by quality, than men are (0.144). Furthermore, they place higher importance on health considerations (0.182). The highest negative correlation value can be found between the association of organic food and taste (-0.325), indicating that when the product carries the organic tag, perceptions over its taste diminish.

4.6. Hypotheses testing
The five hypotheses that are presented and analyzed in chapter 2, are tested in this chapter utilizing linear regression. A significance level of 0.05 was set and all models were either rejected or accepted by comparing the estimated p value with that level of significance. If an estimated value is under the threshold (0.05) that indicates that the relationship between the dependent and the independent variable(s) is statistically significant and the hypothesis is accepted. On the other hand, when a value is over 0.05, then the relationship between the dependent and the independent variable(s) is not statistically significant and the hypothesis is rejected. Moreover, these values are used to determine whether the coefficient of the variables is significantly different from zero (0). Values smaller than 0.05 suggest a statistically significant coefficient. Operatively, this comparison appears in the following hypotheses as:

- H1. The quality of organic buttermilk biscuits is better than that of non-organic buttermilk biscuits.

**QUALITY**

<table>
<thead>
<tr>
<th></th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.366</td>
<td>1</td>
<td>0.366</td>
<td>0.116</td>
<td>0.734</td>
</tr>
<tr>
<td>Within Groups</td>
<td>674.592</td>
<td>214</td>
<td>3.152</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>674.958</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 8 - Results of H1 test
It can be observed from the ANOVA table that the p value of the model is 0.734 (0.734>0.05), which indicates that the model is not statistically significant. These results suggest a positive but non-significant relationship between quality expectations and organic buttermilk biscuits. Hence, H1 is rejected.

- H2: *The non-organic buttermilk biscuits are rated as tastier than the organic ones.*

**TASTE**

---

### MODEL SUMMARY

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.325&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.106</td>
<td>0.102</td>
<td>2.61047</td>
</tr>
</tbody>
</table>

* a. Predictors: (Constant), 0- butter, 1- organic

### ANOVA

<table>
<thead>
<tr>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>172.443</td>
<td>1</td>
<td>172.443</td>
<td>25.305</td>
</tr>
<tr>
<td>Residual</td>
<td>1458.314</td>
<td>214</td>
<td>6.815</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1630.757</td>
<td>215</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* a. Dependent Variable: Tasteave
  * b. Predictors: (Constant), 0- butter, 1- organic

### COEFFICIENTS

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>12.670</td>
<td>0.247</td>
<td>0.355</td>
<td>51.364</td>
</tr>
<tr>
<td>0-butter, 1- organic</td>
<td>-1.788</td>
<td>0.355</td>
<td>-0.325</td>
<td>-5.030</td>
</tr>
</tbody>
</table>

* a. Dependent Variable: Tasteave

Figure 9 - Results of H2 test

From the ANOVA test it can be observed that the F statistic is equal to 172.443/6.815= 25.305.
This distribution $F(1, 214)$ and the probability of observing a value greater than or equal to $25.305$ is less than $0.001$, suggesting that $H2$ is supported. Moreover, the overall $p$ value of the model is $0.000$ ($0.00<0.05$), meaning that the model is statistically significant. The findings indicate a strongly positive relationship between simple buttermilk biscuits and taste. Last but not least, the positive value of the coefficient is one more indicator that reveals a proportional relationship between the two variables. Hence, $H2$ is accepted.

- **H3:** *The non-organic buttermilk biscuits are perceived as unhealthier than the organic ones.*

**HEALTHY**

<table>
<thead>
<tr>
<th>MODEL SUMMARY</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R</td>
<td>Adjusted R</td>
<td>Std. Error of the Estimate</td>
</tr>
<tr>
<td>1</td>
<td>0.212a</td>
<td>0.045</td>
<td>1.07754</td>
</tr>
</tbody>
</table>

- Predictors: (Constant), 0- butter, 1- organic

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>11.728</td>
<td>1</td>
<td>11.728</td>
<td>10.101</td>
<td>0.002b</td>
</tr>
<tr>
<td>Residual</td>
<td>248.476</td>
<td>214</td>
<td>1.161</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>260.204</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Dependent Variable: Healthy
- Predictors: (Constant), 0- butter, 1-organic

<table>
<thead>
<tr>
<th>COEFFICIENTS</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>5.438</td>
<td>0.102</td>
<td>53.404</td>
<td>0.000</td>
</tr>
<tr>
<td>0-butter, 1- organic</td>
<td>-0.466</td>
<td>0.147</td>
<td>-3.178</td>
<td>0.002</td>
</tr>
</tbody>
</table>

- Dependent Variable: Healthy2
Figure 10 - Results of H3 test

Regarding H3, the F statistic is equal to $11.728/1.161=10.101$ (ANOVA table). This distribution F $(1, 214)$ and the probability of observing a value greater than or equal to 10.101 is less than 0.001, meaning that H3 is supported. Moreover, the overall $p$ value of the model is 0.000 ($0.00<0.05$), meaning that the model is statistically significant. The regression indicates a strongly positive relationship between unhealthiness and non-organic buttermilk biscuits, meaning that organic buttermilk biscuits are considered healthier. Finally, the positive value of the coefficient indicates a proportional relationship between the two variables. Hence, H3 is accepted.

- H4: The organic buttermilk biscuits label yields more positive nutritional expectations towards the product (e.g., lower in fat, higher in nutrition and fiber) than the non-organically labeled biscuit.

ATTITUDE AVE

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.111</td>
<td>1</td>
<td>0.111</td>
<td>0.096</td>
<td>0.756</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245.959</td>
<td>214</td>
<td>1.149</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>246.069</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 11 - Results of H4 test

From the ANOVA table it can be observed that the $p$ value of the model is 0.756 ($0.756>0.05$), meaning that the model is not statistically significant. Therefore, a positive but not significant relationship between the “nutritional evaluation of organic buttermilk biscuits” and “respondents’ positive attitude”, exists. Hence, H4 is rejected.

- H5a: The (1) highly educated, (2) females and those coming from (3) higher SES will hold positive attitudes to the organic buttermilk biscuits.

EDUCATION, FEMALES, INCOME
Hypothesis 5 includes three parts that have to be tested. From the above tables it can be concluded that the p value for the first part (highly educated people) is 0.583 (0.583>0.05), thus H5a(1) is rejected. Moving on, the p value for the second part (females) is 0.090 (0.090>0.05) indicating that the model is statistically significant at 10% and suggests a strongly positive relationship between females and organic buttermilk biscuits, thus H5a(2) is accepted. Last but not least, the p value for the third part of the hypothesis (people coming from higher SES) is 0.653
(0.653>0.05), thus H5a(3) is rejected. To sum up, from this cluster of hypotheses only H5a(2) is accepted marginally at 10%. The rest are not supported. It is of high importance to mention that these results came at a level of 0.1 (10%) and not at 0.05.

- H5b: The 1) highly educated, (2) females and those coming from (3) higher SES will hold negative attitudes to the non-organic buttermilk biscuits.

### MODEL SUMMARY

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.104&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.011</td>
<td>-0.003</td>
<td>1.07148</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Income, Education, 1-Man, 2-Female

### ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2.679</td>
<td>3</td>
<td>0.893</td>
<td>0.778</td>
<td>0.508&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Residual</td>
<td>243.391</td>
<td>212</td>
<td>1.148</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>246.069</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: attitudeave  
b. Predictors: (Constant), Income, Education, 1-Man, 2-Female

### COEFFICIENTS<sup>a</sup>

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-Male, 2-Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: attitudeave
Figure 13 - Results of H5b test

Hypothesis 5 had to be separated into H5a and H5b in order to allow for a more concrete analysis. H5b was in fact created to indicate the exact opposite conclusion of that in H5a. As expected, the results revealed that highly educated people, females and people coming from higher SES do not hold negative attitudes towards organic buttermilk biscuits, since their p values, are 0.776 (0.776>0.05) for educated people, 0.184 (0.184>0.05) for females and 0.302 (0.302>0.05) for income. Hence, H5b is rejected.

The next table presents the results of the above analysis.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Rejected/Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 1.</strong> The quality of organic buttermilk biscuits is better than that of non-organic buttermilk biscuits.</td>
<td>Rejected</td>
</tr>
<tr>
<td><strong>Hypothesis 2.</strong> The non-organic buttermilk biscuits are rated as tastier than the organic ones.</td>
<td>Accepted</td>
</tr>
<tr>
<td><strong>Hypothesis 3.</strong> The non-organic buttermilk biscuits are perceived as unhealthier than the organic ones.</td>
<td>Accepted</td>
</tr>
<tr>
<td><strong>Hypothesis 4.</strong> The organic buttermilk biscuits label yields more positive nutritional expectations towards the product (e.g. lower in fat, higher in nutrition and fiber) than the non-organically labeled biscuit.</td>
<td>Rejected</td>
</tr>
<tr>
<td><strong>Hypothesis 5a.</strong> The (1) highly educated, (2) females and those of (3) higher SES will hold positive attitudes to the organic buttermilk biscuits.</td>
<td>Accepted H5a (2) (marginally at 10%)</td>
</tr>
<tr>
<td><strong>Hypothesis 5b.</strong> The (1) highly educated, (2) females and those of (3) higher SES will hold negative attitudes to the non-organic buttermilk biscuits.</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Table 4- Summary of hypotheses testing results
Chapter 5. Discussion and conclusions

5.1. Introduction

In this chapter the findings are discussed and compared with previous empirical and theoretical findings.

5.2. Discussion

The following figure shows the proposed conceptual model, which was presented analytically in chapter 2. The rejected hypotheses are those in red and the accepted hypotheses are those shown in green.

Figure 15 - Overview of the analysis' results

The statistical analysis indicates that there is no statistically significant correlation between quality expectations and organic buttermilk biscuits, thus hypothesis 1 is rejected. Despite prior evidence (Lee et. al., 2013) that “organically produced” products are rated as more nutritional and of better quality compared to conventional ones, this finding did not manage to support such evidence in the case of buttermilk biscuits. It is already known from the existing literature that conflicting opinions exist regarding quality perceptions for organic products in the vice category of food. In Chapter 2, both opinions are presented but only one selected for the hypothesis,
although it is rejected as a result of the findings. A possible explanation is the fact that vice products, in our case buttermilk biscuits, are connected with pleasure and fun (KhanandDhar, 2006; Okada, 2005) and the organic claim in this category of products may diminish the amount of pleasure that it offers, leading consumers to hold negative quality perceptions for the product (KhanandDhar, 2006; Okada, 2005). “Vice consumers” are usually associated with short-term goals for immediate satisfaction (Doorn and Verhoef, 2011) so when a product carries the term “organic” it is considered as healthier, reducing not only the satisfaction that it offers but the assorted quality evaluations (Doorn and Verhoef, 2011). Furthermore, findings indicated that people may not consider organic buttermilk biscuits as being of higher quality than the conventional ones.

The second hypothesis, regarding differences in taste expectations between buttermilk biscuits and organic buttermilk biscuits, is confirmed. The initial assumption that the organic claim in the case of vice food diminishes taste evaluations, seems to be valid, since a positively and statistically significant correlation was confirmed through the analysis between these two variables. The results showed that consumers consider the non-organic buttermilk biscuits as being tastier when compared to the organic ones. These findings are in line with Harris Interactive (2007) and Wansink and Chandon (2006) empirical findings, according to which, organic claims on food packaging tend to bias taste expectations and thus are considered to be less tasty compared to conventional ones. Further, similar findings have been reached by Bourn and Prescott (2002), who report that the unconvincing taste of organic vice products (such as organic buttermilk biscuits) is one of the main reasons explaining why consumers prefer not to buy them. The findings reached are comparable with another product-application in the case of vice food, that of “organically produced” cookies (Lee et. al., 2013), where the organic claim of cookies resulted in them being perceived as less tasty than conventional ones.

Moving on, a positively and statistically significant correlation was confirmed through the analysis between organic buttermilk biscuits and healthiness. The third hypothesis, regarding differences in healthy evaluations between organic and non-organic buttermilk biscuits, is confirmed, indicating that consumers consider organic buttermilk biscuits as healthier than non-organic ones. This finding is in accordance with many studies that have resulted in the fact that
consumers consider an organic option as a healthier choice compared to a conventional option (Tregear et al., 1994; Magnusson et al., 2001; Baker et al., 2004; Lockie et al., 2004; Lea and Worsley, 2005; Padel and Foster, 2005) and it could be explained by the fact that the term “organic” carries strong health connotations (Harris Interactive, 2007) and creates a favorable attitude towards the product (Parras-Rosa, Murgado-Armenteros and Torres-Ruiz, 2013). The additional characteristic of being organic, is able to positively influence consumers’ perceptions towards the said product, since nowadays, eating healthily has become a trend (Shaw et al., 2007). Another explanation why this hypothesis is confirmed, could be based on the “halo effect” phenomenon. According to Schuldt and Hannahan’s (2012) findings, consumers seem to be influenced by the term “organic” on a product’s label and evaluate products that carry such claims as being healthier compared to the conventional option, without searching for further information regarding nutritional value, calories and so on.

Similar to hypothesis 1, the fourth hypothesis which tested whether organic buttermilk biscuit’s label yield more positive nutritional expectations towards the product than non-organic one, is also rejected. This finding is in contrast with previous results, which indicated that organic products are considered to be more nutritious compared to conventional ones (Tregear et al., 1994; Magnusson et al., 2001; Baker et al., 2004; Lockie et al., 2004; Lea and Worsley, 2005; Padel and Foster, 2005). Prior evidence, based on the health “halo effect”, suggested that organically-labeled products are considered to be higher in nutrition and fiber (Lee et al., 2013), however the finding of this study did not support such evidence. A possible explanation could be the fact that both biscuits labels (organic and non-organic), did not provide any nutritional information and consequently consumers were not in a position to evaluate the nutritional content of biscuits only from the shown picture. Apparently the respondents did not seem to be influenced by the health “halo effect”, which indicates that consumers believe that organically-labeled products are lower in calories and higher in nutrition and fiber. As a result, more positive nutritional evaluations for organic buttermilk biscuits were not made.

Last but not least, hypothesis 5a assumed that (1) highly educated people, (2) females and (3) people coming from higher socio-economic status would hold positive attitudes to organic buttermilk biscuits while hypothesis – H5b, assumed that (1) highly educated people (2) females
and (3) people coming from higher SES would hold negative attitudes to the non-organic buttermilk biscuits. According to the findings reached, only H5a(2) is supported marginally at 10% while the rest are not. The finding that women hold positive attitudes towards organic buttermilk biscuits is in line with Winterich, Mittal and Ross (2009) findings, which indicated that women, compared to men, hold more positive evaluations towards organic products, since they are more concerned with communal goals. Moreover, Knight and Warland (2004) added that women have a higher health consciousness and tend to ensure the safety in food for their families by shaping healthier eating habits (Fagerli and Wandel, 1999). Although prior evidence indicates that highly educated people hold more a positive attitude concerning organic food consumption (Padel and Foster, 2005; Stobbelaar et. al., 2006), the finding of this research does not support this evidence. That is despite the fact that the examined sample consisted of highly educated people at a percentage of 88% for simple buttermilk biscuits and 80% for organic buttermilk biscuits. A probable explanation for this is the fact that highly educated people do not seem to be influenced by the “halo effect” phenomenon. That means that they were not influenced by the term “organic” in the evaluation of the buttermilk biscuits, since it is likely that they already know that it is included in the vice category of food and its consumption is accompanied by pleasure and calories. The fact that an individual is highly educated does not automatically means that s/he cannot prioritize taste goals over health and quality goals. Moreover, highly educated people probably considered that in the case of buttermilk biscuits the term “organic” is something like a marketing ploy and does not mean that it makes the product of higher quality nor does this term transform it into a healthy option (virtue) (Pivato, Misani and Tencati, 2008). Finally, a probable explanation why the assumption that people of higher socio-economic status would hold a positive attitude towards organic buttermilk biscuits was rejected, is the fact that people in that category consisted a minority in the examined sample (a percentage of 4.47% for simple buttermilk biscuits and of 5.76 for organic buttermilk biscuits). The economic recession that Greece has been experiencing in recent years has probably had a negative impact on many individuals’ economic status.
To summarize, this study was conducted to investigate (1) whether organically-labeled vice products are seen as superior to conventional ones in terms of quality, taste and healthiness and (2) whether consumers hold a more positive attitude, as result of their “perceived” superiority. These are the initial objectives set in chapter 1. The findings of the present study, revealed that Greek consumers hold a positive attitude for simple buttermilk biscuits in terms of taste while healthiness was the most significant variable in the evaluation of organic buttermilk biscuits. There was no statistical difference regarding how consumers evaluated the two types of products in terms of quality and nutritional value. Moreover, women seem to hold a more positive attitude compared to men towards organic buttermilk biscuits, while highly educated people and those coming from higher socio-economic status did not hold such a positive attitude. Last but not least, the “halo effect” phenomenon appears to play an important role when analyzing the findings since it became apparent that in the case of buttermilk biscuits, respondents are not overly influenced by the term “organic” in the label, and they do not automatically positively judge the quality and the nutritional content of the buttermilk biscuits simply because it carries the “organic” claim. That said, the “halo effect” phenomenon was apparent concerning how tasty and healthy the consumers thought the organic biscuits would be, since they were automatically influenced by the term “organic”.

5.3. Conclusion

This chapter provided a discussion of the findings. This procedure was done by comparing research findings with prior empirical and theoretical evidence. The chapter that follows presents the limitations of the study and indicates possible suggestions for further research.
Chapter 6. Managerial implications, limitations and suggestions for further research

6.1. Introduction

In this chapter, the study’s managerial implications and limitations are presented. Moreover, suggestions for further research are proposed.

6.2. Managerial Implications

There are several managerial implications arising from the results of this research, from which marketers could take advantage of. These are in relation to the effective promotion of organic vice products (such as organic buttermilk biscuits), due to the fact that marketers will have a clearer understanding of how consumers differentiate such products to non-organic ones, in terms of quality, healthiness and taste.

During recent years, the consumers’ interest in the adoption of healthier eating habits, (Kavaliauske and Ubaraitė, 2014) along with the fact that the field of organic food has become increasingly available to them, are two factors which marketers have been able to take advantage of (Shaw et al., 2007).

The results of the present study, suggest that consumers must be convinced that the quality of organic vice products (buttermilk biscuits) is not lower than that of comparable non-organic ones (Droon and Verhoef, 2011). Hence, retailers should persuade consumers to experience organic products in that category in order to evaluate their quality. Moreover, for a better and more convincing promotion of organic vice products (organic buttermilk biscuits), marketers could emphasize their products’ health benefits in their advertisements, since this factor is considered important by consumers. According to Magnusson’s research (2003), health seemed to be the strongest motive for purchasing organic products. The fact that organic products are considered as healthier than non-organic ones (Tregear et al., 1994; Magnusson et al., 2001; Baker et al., 2004; Lockie et al., 2004; Lea and Worsley, 2005; Padel and Foster, 2005) encourages consumers
to believe that in this way their personal prosperity will be increased (Williams and Hammit, 2001). To this end, marketers, in order to promote a product in that category effectively, should focus on addressing health goals.

By placing the appropriate emphasis on health goals, marketers should find an effective way to persuade Greek consumers that an organic vice product is able to simultaneously address their health and taste goals. Regarding taste expectations, prior evidence indicates that consumers are negatively prejudiced towards the taste of organic vice food, considering it as one of the main reasons why they prefer not to buy products in that category (Bourn and Prescott, 2002). To this end, marketers ought to design a really attractive label for the product, making it seem delicious and tasty. A product’s label is the first characteristic that a consumer focuses on and it undoubtedly influences taste expectations, both favorably and negatively. All of the above suggest that an organic label can be a valuable marketing tool (Krystallis, Fotopoulos and Zotos, 2006), and marketers main objective should be to strengthen the label in the mind and heart of the consumer (Krystallis, Fotopoulos and Zotos, 2006).

6.3. Limitations

It is important to mention certain limitations that apply to this research. First of all, the fact that the two questionnaires had to be distributed, collected and analyzed was a time-consuming procedure. The sample size of 216 questionnaires (112 responses for the non-organic buttermilk biscuits and 104 responses for the organic buttermilk biscuits) was sufficient for the research’s requirements. Nevertheless, had the sample size been significantly larger then more reliable findings could have been drawn, especially if that sample group had consisted of respondents from different socio-economic backgrounds. More specifically the sample did not include enough people that belong in higher socio-economic classes, thus, their perceptions were not adequately reflected. Such low representation could be attributed to the well-documented current economic recession in Greece, which has more than likely had a negative impact on Greek citizens’ economic status.
Furthermore, although the online distribution of the questionnaires was helpful for increasing the sample size it was impossible to measure the percentage of non-respondents. Additionally, the reasons why Greek citizens chose not to complete the questionnaire remain unknown. For example, if a male had opened the link for the questionnaire and after seeing the organically-labeled stimuli had chosen not to complete it, then this would have been worth analyzing, particularly considering that females are known to be the predominant gender among organic foods consumers (Winterich, Mittal and Ross, 2009; Knight and Warland, 2004).

A very interesting point to mention is that some respondents, who completed the questionnaires, mentioned some potential improvements for the whole procedure. They supported that the appropriate evaluation of the two products would have been more realistic if the opportunity to taste the shown products had been given, as judgments would not only have been made based on the visual stimuli. However, it was not appropriate for the current research because the purpose of this study was to examine how Greek consumers are influenced by the “halo effect” phenomenon, meaning that their evaluations and attitudes towards the product needed to only be based upon a fictional brand with an accompanying picture.

Despite the aforementioned limitations, the study successfully answered the initial objectives that were set out in chapter 1, providing evidence on (1) how consumers differentiate between organically-labeled buttermilk biscuits and non-organic ones and (2) the extent to which the “halo effect” phenomenon influenced their evaluations. Moreover, the present research succeeded in revealing how the organic tag on product labels could affect managerial choices regarding the most effective manner in which to successfully promote a product.

6.4. Suggestions for further research

This study aimed to answer the question of how Greek consumers differentiate between a particular organically-labeled vice product, in this case buttermilk biscuits, and non-organic ones in terms of quality, taste and healthiness and whether they hold a more positive attitude towards the organic option, as a result of its “perceived” superiority.
Organic eating constitutes a trend, although in practice consumers are not willing to pay the price premium for its consumption (Bhattacharya and Sen, 2004; Verhoef, 2005). According to prior evidence, the difference in price that exists between organic and non-organic products, is one of the reasons why consumers seem unwilling to pay the price premium for organic foods (Bhattacharya and Sen, 2004; Verhoef, 2005). Thus, further research could investigate the way in which price can affect consumers’ attitudes and purchasing behavior towards organically-labeled vice products, since price undoubtedly influences demand (Yiridoe, Bonti-Ankomah and Martin, 2005) and the consumers’ perceptions of a product’s price can significantly impact upon the level of consumption (Furst et al., 1996; Steptoe et al., 1995; Wadolowska et al., 2008).

Another field for further investigation is how environmental concerns influence organic foods consumption, since environmental consciousness is not just an ideology for some people but it constitutes an issue of "market competition" (McCloskey and Maddock, 1994) which reflects consumer behavior (Follows and Jobber, 1999). Moreover, we are living in an era in which environmental pollution has been quoted as being one of the biggest issues in foods consumption, so environmental concern would be an issue likely to draw very interesting conclusions regarding whether consumers concern for the environment would lead them to purchase organic food rather than non-organic food. Additionally, it would be worth investigating whether environmentally conscious people are more influenced by the “halo effect” phenomenon with regards to organic food compared to individuals who are less engaged with environmental issues. This area would be particularly interesting because there are conflicting opinions on this topic (Schuldt and Schwarz, 2010).

According to previous findings, older people (Dunlap and Van Liere, 1978; Scott and Willits, 1994) and people of higher socio-economic status (Padel and Foster, 2005; Stobbelaar et al., 2006) hold positive attitudes towards organic vice foods consumption. Yet, based on the present study’s findings, no positive correlation between (1) people aged above 50 years old and (2) those coming from a higher socio-economic class with an annual income of more than €14.000, with regards to organic vice food was revealed. This research proved unable to draw conclusions concerning these two specific categories of consumers because the examined sample did not
include a fair representation of people with such a socio-demographic profile thus this is a field for further investigation.

Another possible avenue of research, would be to allow cultural factors to come into play by questioning consumers of different nationalities, rather than limit oneself to Greek consumers, because it would be interesting to examine to what extent the “halo effect” phenomenon influences citizens coming from different cultures.

Interestingly, one highly educated older female respondent mentioned that there is a possibility that the term “butter” within the label of organic buttermilk biscuits could have in fact negatively influenced the consumers as butter is associated with high saturated fat levels. This is a valid point. Therefore, it is suggested that any further research could include more than one vice product stimuli and careful consideration should be given to which vice products are utilized.

6.5. Conclusion

This chapter presented the potential managerial implications arising from the research, as well as the limitations that were faced during this study. Finally, suggestions for further research were presented.
References


HarrisInteractive (2007). Harris Poll Shows Number of “Cyberchondriacs – Adults who Have Ever Gone Online for Health Information – Increases to an Estimated 160 Million Nationwide. The Harris Poll #76, July 31.


Laura Wels (2014). Are organic consumers receptive to health claims on organic nutrition?


Appendix 1

Survey Questionnaire

The International Hellenic University, under the MSc in Management program, is conducting a research that aims to examine 1) how Greek consumers evaluate a particular organic type of vice food, specifically organic buttermilk biscuits, and 2) whether they are willing to consume that type of snack. We would greatly appreciate your participation in the anonymous completion of this questionnaire in order to draw marketing related conclusions.

Please respond honestly to the questions below. It should be stressed that the identity of the research participants will be anonymous and all information provided will remain strictly confidential. The questionnaire is also available online at:

https://docs.google.com/forms/d/19gbLS3c9SUR-JX_3LuJywFwAlcK4bUVdTfQsSvap6Dk/viewform
https://docs.google.com/forms/d/1uj7n8GsR1lq7D3fyKw6PilqSkMoCnt19XjbY7xA-iOc/viewform

Thank you for your kind cooperation!

Quality-Product perceptions (main study: Van Doorn and Verhoef, 2011)

Quality (as adopted by Homburg et al., 2005)

1. How do you rate this product?
Healthy snack (Provencer, Polivy and Herman, 2009)

1. How healthy is this snack for you?

   1 2 3 4 5 6 7

   Very unhealthy O O O O O O O O Very healthy

2. If you were eating this snack regularly, how would it affect your weight?

   1 2 3 4 5 6 7

   Weight Loss O O O O O O O O Weight gain

3. Do you consider this snack as appropriate in a healthy menu?

   1 2 3 4 5 6 7

   Very inappropriate O O O O O O O O Very appropriate

Health consciousness (van Doorn and Verhoef, 2011 as adopted by Moorman, 1990)

1. I try to protect myself against health hazards I hear about.

   1 2 3 4 5 6 7

   Strongly disagree O O O O O O O O Strongly agree

2. I am concerned about health hazards and try to take action to prevent them.

   1 2 3 4 5 6 7

   Strongly disagree O O O O O O O O Strongly agree

3. I try to prevent health problems before I feel any symptoms.

   1 2 3 4 5 6 7

   Strongly disagree O O O O O O O O Strongly agree

4. I don’t worry about health hazards until they become a problem for me or someone close to me.

   1 2 3 4 5 6 7

   Strongly disagree O O O O O O O O Strongly agree
5. There are so many things that can hurt you these days. I'm not going to worry about them.

1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ Strongly agree

6. I often worry about the health hazards I hear about, but don't do anything about them.

1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ Strongly agree

7. I don't take any action against health hazards I hear about until I know I have a problem.

1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ Strongly agree

8. I'd rather enjoy life than try to make sure I'm not exposing myself to a health hazard.

1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ Strongly agree

9. I don't think health hazards I hear about will happen to me.

1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ Strongly agree

Nutritional involvement (as adopted by Chandon and Wansink, 2007)

1. I pay close attention to nutritional information

1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ Strongly agree

2. It is important to me that nutritional information is available

1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ Strongly agree

3. I ignore nutritional information

1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ Strongly agree

4. I actively seek out nutritional information
1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ ○ Strongly agree

5. Calorie levels influence to what I eat
1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ ○ Strongly agree

Eating healthily (as adopted by Chandon and Wansink, 2007)
1. Eating healthy is important to me
1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ ○ Strongly agree

2. I watch how much I eat
1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ ○ Strongly agree

3. I pay attention to calorie information
1 2 3 4 5 6 7
Strongly disagree ○ ○ ○ ○ ○ ○ ○ ○ Strongly agree

Attitude to product

Attitude to Arty

               Bad   1  2  3  4  5  6  7    Good
Unpleasant     1  2  3  4  5  6  7    Pleasant
Dislike        1  2  3  4  5  6  7    Like

Taste of Arty

               Bad   1  2  3  4  5  6  7    Good
Unpleasant     1  2  3  4  5  6  7    Pleasant
Dislike        1  2  3  4  5  6  7    Like

Demographics

Gender
○ Male ○ Female

Age
○ <30 ○ 31-40 ○ 41-50 ○ >50

Education
○ Elementary ○ High school ○ Technical school ○ University ○ Postgraduate

Income (yearly, euros)
○ <€14000 ○ €14000-€30000 ○ €30000-€50000 ○ >€50000