

# **The Influence of Health and Taste Claims in Consumer Perception of Food Products and Purchasing Intentions**

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Bachelor Thesis for Obtaining the Degree

Bachelor of Science in

International Marketing

Submitted to Dr. Marion Garaus

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## **Affidavit**

I hereby affirm that this Bachelor Thesis represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

The thesis was not submitted in the same or in a substantially similar version, not even partially, to another examination board and was not published elsewhere

15<sup>th</sup> June, 2022

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## **Abstract**

An increase in diseases related to life-style choices such as diet has spurred consumers to become more interested in the healthiness of food products. Food manufacturers have responded to this sudden pressure to create healthier products by adding health claims to their products. However, little is known about consumers' perceptions of products with health claims and how this may impact their purchasing decisions. This thesis seeks to investigate to what extent health claims may influence consumers' health and taste perceptions of food products and their purchasing decisions. Moreover, this thesis explores if these perceptions and intentions change with the addition of a taste claim in combination with a health claim. The empirical part of this thesis includes an online experiment which was conducted to test the theoretically developed hypotheses. The survey resulted in 99 viable respondents. The positive influence of health claims and health and taste claims on consumers' healthfulness and tastiness perceptions towards a product has not been confirmed by the findings of the experiment. Based on these findings, it is recommended that further research is conducted on the topic of consumer understanding of health and taste labeling, and how this influences their perceptions towards a product. Moreover, it is recommended that stricter legislation and regulations are created to combat consumer misunderstanding of health and taste labeling in food products.

**Key Words:** Health Claims, Taste Claims, Consumer, Purchasing Intentions, Labels, Consumer Understanding, Food Labeling

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# 1 Introduction

Since 2016, the health and wellness food market value worldwide has grown from 707.12 billion USD to 811.82 billion USD (Statistica, 2021). This rise in foods branded as “healthier” can be explained by the growing public concern towards the increasing uptick in life-style related diseases that could be partially prevented by healthier dietary behaviors. Fueled by the subsequent public pressure to produce “healthier” products, many food manufacturers have compensated by adding health claims to their products. This attempt to appease the growing consumer interest in health foods does not come without ramifications, however, as public policy struggles to regulate these claims and their impact on consumers.

According to the European Commission for Food Safety, the term *health claims* can be defined as any statement about a relationship between food and health (Health Claims, 2022). The aim of health claims in food advertising is to “respond to consumers’ interest in health by conveying messages about product-specific benefits that potentially add value to products” (Lähteenmäki, 2013, p. 196). These claims differ from nutritional claims, which communicate particular features of a food, usually referring to the presence or level of a nutrient, for example, “high fiber” or “no sugar” (Williams, 2005). In addition, health claims seek to connect a preferred state of health to specific food components. For many consumers, however, the contrast between the two is not easily distinguishable.

Health claims can be further divided into those which promise positive effects or benefits and those which claim to reduce the risk of disease. Those claiming positive effects appeal to consumers seeking to gain a certain health benefit from food, for example, increased fiber content. Claims promising reduced disease risk appeal to consumers who seek to avoid a negative outcome (e.g. cancer) (Lähteenmäki, 2013). One study maintains that consumers find negatively framed health claims more persuasive. This can be attributed to the Prospect Theory, which stipulates that “people are more sensitive to possible losses than

possible gains” (Lähtenmäki, 2013). An issue arises when such claims are made in food advertising, as they may mislead consumers into believing that consuming a certain product might actually reduce their risk of disease.

Consumer understanding of health claims in food advertising can be partially explained by two phenomena: the *magic bullet effect* and the *halo effect*. The magic bullet effect occurs when consumers overgeneralize claims and, as a result, anticipate health benefits unrelated to the claimed one or make inferences about the overall healthfulness of the product carrying the claim (Orquin & Scholderer 2015; Roe et al., 1999; Stancu et al., 2021). Health halo effects arise when products are labeled in a manner that misleadingly push consumers to perceive them as superior to other products in regard to health attributes (Stancu et al., 2021).

Evidence for these two phenomena was illustrated in research examining how relative nutrition claims impact consumer perceptions. It found that consumers perceived foods as lower in calories and in fat when they contained the claims “low fat” and “no cholesterol” (Hannahan & Schuldt, 2013). Another study also demonstrated the effect of the health halo when participants judged foods labeled as *organic* as tasting better and more high quality as compared to foods with conventional labeling (Hannahan & Shuldt, 2013). This is especially interesting as organic labeling refers to the production method rather than the healthfulness of the product, however consumers believe products labeled as organic to be healthier than conventional products (Chrysochou, 2010).

In an attempt to mitigate the misleading effect of health claims, many countries have implemented legislation regulating what can actually be included in a claim. Europe has perhaps the strictest regulations for health claims, requiring that all be based on substantiated scientific evidence. Countries like the USA and Japan, however, allow for health claims to be made based only on suggestive scientific evidence and quantified statements (Lähtenmäki, 2013).

Despite this legislation, there remains a lack of research with consistent findings regarding consumer understanding and perception of health claims and their

subsequent impact on consumer purchasing decisions. Furthermore, EU legislation fails to include regulations protecting consumers from these misleading or false claims, which has both ethical implications for consumers and a negative impact on market efficiency. Though EU Regulation 1924/2006 Recital 15 defines the average consumer as someone “who is reasonably well-informed and reasonably informed observant and circumspect, taking into account social, cultural and linguistic factors”, there remains much disagreement about what the term ‘average consumer’ truly means.

One of the criteria set out by policymakers seeking to address the issue that consumers may be misled by health claims is consumer understanding of these claims. In prior research, three main types of consumer understanding of health claims have been investigated: subjective understanding, objective understanding, and specific inferences.

*Subjective understanding* refers to how easy or difficult consumers find a health claim is to understand (Stancu et al., 2021). *Objective understanding* describes how accurately consumers decipher claims in regard to the scientific evidence supporting the claimed effect (Bilman, Kleef, Mela, Hulshof, & van Trijp, 2012; Grunert, Scholderer, & Rogeaux, 2011; as cited in Stancu et al., 2021). Most research has shown that consumers have good objective levels of understanding, suggesting that they have a fairly easy time correctly interpreting the health claim’s intended message.

Lastly, *specific inferences* refer to assumptions about a product made by consumers based on a health claim which may not necessarily be true. This is a result of the aforementioned magic bullet and halo effects, wherein consumers assume unrelated benefits or regard a product as more superior based on assumptions drawn from a health claim (Andrews, Netemeyer, & Burton, 1998; Roe, Levy, & Derby, 1999; as cited in Stancu et al., 2021). Specific inferences are especially relevant to consumer understanding of health claims as they have been found to be correlated to higher purchasing intention for those products carrying a health claim (Harris, Thompson, Schwartz, & Brownell, 2011; as cited in Stancu et al., 2021). This is because inferences made by consumers



about a product carrying a health claim that surpass the literal meaning of a health claim may lead to more expected benefits from the product and, as a result, make consumers more likely to buy them (Stancu et al., 2021). Furthermore, consumers who have more positive attitudes towards foods with health benefits are more likely than others to make these types of interpretations and purchase the product (Grunert et al., 2011; as cited in Stancu et al., 2021). All of these types of consumer understanding influence how consumers perceive products with health claims and impact their subsequent purchasing decisions.

While these three types of consumer understanding of health claims may influence how consumers perceive products with health claims and make purchasing decisions, it is also important to note the influence of taste. Taste claims and the unhealthy-tasty intuition have been shown to have a significant impact on consumer perception of food products. Taste is processed before health by consumers (Garaus & Lalicic, 2021), and therefore plays a significant role in how consumers perceive products with health claims and make purchasing decisions.

Against this background, this thesis seeks to explore the extent to which health claims, taste claims or a combination of both can impact consumer perception/understanding of food products and, in turn, their purchasing decisions . As such, this thesis seeks to investigate the following research questions:

**RQ1:** To what extent do health claims impact consumer perceptions of food products as compared to food products with no health labeling?

**RQ2:** As compared to a health only claim, to what extent do food products with a combined health and taste claim prompt higher purchasing intentions?

As little research has been conducted thus far on the relationship between health and taste claims and their influence on consumer purchasing behavior, this research could serve as a valuable contribution to existing literature. Furthermore, it could shed light on areas of uncertainty within past research as

many studies on the topic of health claims have resulted in contradictory findings.

This thesis will begin with a review of existing literature on the topic of health and taste claims. It will also explore the many factors that interact with these claims to influence consumer understanding of the claims and consumers' subsequent purchasing intentions. Current and proposed legislation meant to regulate health and taste claims in food advertising will also be discussed, as well as how health claims are understood by consumers in regard to information processing theories.

After the literature review, the methodology of the intended study will be described along with experiment development and data collection and analysis. Lastly, conclusions, recommendations, and implications of the study will be discussed.

## **2 Other Factors Impacting Consumer Understanding of Health Claims**

Other elements such as consumer-related factors like gender, age, and country; product-related factors like color of packaging and whether a product is wholesome or processed; and claim-related factors like the length and direction of the claim can all further impact how consumers understand health claims, and will be explained in greater detail in the following chapters. While these factors will not be investigated by this thesis, they are necessary to explain as they likely also have an impact on how participants perceive and understand health claims and make their purchasing decisions. As such, factors will be considered as control variables in the empirical study.

### **2.1 Sociodemographic Factors**

Existing literature identifies the sociodemographic factors of sex, age, education, household, and country as having an impact on consumer perception and understanding of health claims in food advertising . In general, women tend

to understand health claims better than men. This is supported by Bogue et al. (2005), which found that women of higher socio-economic classes typically care the most about a healthy diet. De Jong et al. (2003) also supports this claim, finding that women consume foods that offer health benefits more frequently than men do.

Reasons for this gender-specific attention to nutrition and health information could be that women often feel more responsible for the health of family members (Ares et al., 2009; Urala et al., 2003; as cited in Williams, 2005). Moreover, considering that most literature agrees that a higher knowledge of nutrition results in more positive attitudes towards health claims (De Vriendt et al., 2009; Grunert et al., 2012; Hendrie et al., 2008; as cited in Lähteenmäki, 2013), it can be assumed that, in general, women perceive health claims in food advertising more positively and accurately than men do. It must also be noted, however, that gender-specific health claims are perceived more positively by each respective gender. For example, health claims about folate for pregnant women will generally be perceived more positively by women, and health claims about lowering cholesterol will generally be perceived more positively by men (Ares & Gámbaro, 2007; Dean et al., 2007; Urala, Arvola, & Lähteenmäki, 2003, as cited in Nocella & Kennedy, 2012).

Age also seems to be a determining factor in the extent to which consumers understand health claims. Current literature asserts that “middle-aged and elderly consumers tend to be substantially more health oriented than younger consumers” (Nocella & Kennedy, 2012, p. 573). This can perhaps be attributed to the fact that the older one gets, the more likely one is to be diagnosed with a life-style related disease (Bech-Larsen and Grunert, 2003; as cited in Nocella & Kennedy, 2012). Therefore, the lower perceived health status of older individuals results in better understanding of health claims by this group as, again, current literature ascertains that better knowledge of health can lead to a more accurate perception of health claims.

One's level of education also impacts the extent to which health claims are understood by consumers. Most current literature agrees that the higher one's

education level, the more accurate their understanding of health claims is. This may be because those with higher levels of education may be better informed about the actual benefits and functions of a specific food product, making them pay less attention to health claims (Lombardi et al., 2021). In other words, consumers with higher levels of education do not place as much merit on health claims as those with lower levels of education.

Studies have also illustrated that more highly educated consumers are more knowledgeable about the relationship between diet and diseases (Cotunga et al., 1992; Ippolito and Mathios, 1991; as cited in Nocella & Kennedy, 2012), and understand claims referring to diet-disease relationships better than consumers with lower levels of education (Fullmer et al., 1991; Moorman, 1990; as cited in Lombardi et al., 2021). These findings implicate that health claims may mislead consumers disproportionately, leaving less-educated consumers more susceptible to issues resulting from false or deceptive information (Lombardi et al., 2021).

Important to note, however, is that despite a consumer's knowledge about the possible negative effects of unhealthy foods, their food choices are oftentimes steered by whether or not they predict that it will taste good rather than how healthy they believe the food to be (Mai & Hoffman, 2015; as cited in Garaus & Lalicic, 2021). This is because during food choice, consumers process perceived tastiness before perceived healthfulness (Garaus & Lalicic, 2021). The full extent of this phenomenon—referred to as the unhealthy-tasty or healthy-untasty intuition—on consumer perception of food claims and their subsequent purchasing decisions will be explored more thoroughly in Chapter 3.1.

Continuing with sociodemographic factors, the make-up of one's household, for example the presence of children, is another factor impacting consumer understanding of health claims. One study found the variable "children in the household" to be statistically significant, agreeing with current literature that families with children are generally more concerned with the nutrition content of their foods and therefore better able to process health claims (Lombardi et

al., 2021). Again, this relates to the importance of having adequate nutrition knowledge in order to accurately perceive health claims in food advertising as “the more consumers understand the health effect explained in the claim, the more they are intentioned to buy the product with health claim” (Diaz et al., 2020; as cited in Lombardi et al., 2021, p. 6). Conversely, the less knowledge one has about nutrition, the more likely one is to misunderstand a health claim and falsely evaluate a product, therefore impacting their purchasing intentions (Kozup, Creyer, & Burton, 2003; Chandon & Wansink, 2011; as cited in Lombardi et al., 2021).

Country is also a sociodemographic factor impacting consumer understanding of health claims. Current research agrees that consumer perceptions of health claims differ vastly from country-to-country. To illustrate this effect, consider a study on health claims in cereal products conducted in Europe. In the study, Italians rated the healthfulness of products with health claims higher than products where no health claims were present. Despite this, they still showed preference towards products without any health or nutrition claims. (Saba et al., 2010, as cited in Lähteenmäki, 2013). Furthermore, consumers in Finland preferred risk- reduction claims while UK consumers favored claims promising added benefits (Lähteenmäki, 2013). The most notable differences in the study, however, occurred in the Nordic regions. Consumers in Denmark perceived health claims extremely negatively, which can be attributed to the fact that before introduction of regulation in the EU, health claims were not permitted there. Contrarily, consumers in Sweden and Finland who had already received market exposure to health claims reacted much more moderately. It is important to note, however, that responses to health claims “still depended on the familiarity of the claim content and type of product that the claim was attached to” (Lähteenmäki, 2013, p. 198). These factors will be discussed in the following sections.

## **2.2 Product-Related Factors**

Consumer perceptions of health claims also tend to vary among product types. To understand how product-related factors influence consumer understanding

of health claims, hedonic and functional foods must first be defined. Hedonic foods refer to foods that are consumed for pleasure and not for energy to maintain bodily homeostasis (Monteleone et al., 2012). Functional foods can be defined as whole, fortified, enriched or enhanced foods that provide health benefits beyond the provision of essential nutrients (e.g., vitamins and minerals) (Hasler, 2002). Furthermore, compared to conventional foods, functional foods “help to ensure overall good health and/or to prevent/manage specific conditions in a convenient way (i.e. through daily diet)” (van Kleef, 2006, p. 64). In other words, hedonic foods are those that consumers eat purely for pleasure, while functional foods are foods that consumers eat for their perceived or actual health benefits. This is an important distinction, as there is conflicting research on whether a food is functional or hedonic influences consumer understanding of health claims.

Some literature supports the hypothesis that functional foods containing health claims are more positively perceived by consumers than hedonic foods containing health claims. This is because health claims are more accepted on products that already are considered as having a healthy image — i.e. foods that consumers consider to have functional rather than hedonic value (Lähteenmäki, 2013). Another study supporting this hypothesis ascertains that foods viewed as inherently healthy such as yogurts, cereals, and juices, are perceived by consumers as reliable carriers of functional messages (van Kleef et al., 2005). This may be due to the fact that foods that consumers see as satisfying hedonistic needs, like candies and cakes, are viewed more as treats. Therefore, consumers may disregard or ignore any nutrition or health claims attributed to hedonic foods while believing in health claims on functional foods (van Kleef et al., 2005).

Much research exists, however, opposing this hypothesis. One study conducted in France, Finland, and the Netherlands found that consumers were skeptical of the idea of adding health claims to products that were considered “wholesome” and “healthful”, and therefore already providing a functional benefit (Lähteenmäki, 2013). When asked to consider the idea of enhancing flavonoid

content in fruit and vegetables, respondents were doubtful. This could be because consumers usually favor foods that they perceive to be natural and regard any additional product characteristic as decreasing the naturalness of the food product (Rozin et al., 2004; Evans, de Challemaison, & Cox, 2010; Lähteenmäki et al., 2010; as cited in Lähteenmäki, 2013). This implicates that consumers may find health claims on “non-healthy” (i.e. hedonic) foods more justifiable than health claims on “wholesome” (i.e. functional) foods.

An additional product-related factor impacting consumer understanding of health claims includes whether or not the product is supported by government legislation. Consumers tend to be skeptical of health claims verified only by food companies. Many are more trustful when the health claim/food product is approved by the government (Williams, 2005). Examples of government verification include the aforementioned grading system in the United States, or the Nordic Keyhole.

### **2.3 Claim-Related Factors**

Claim-related elements such as the length, type, newness, and wording of a claim are all factors influencing how consumers perceive health claims and make purchasing decisions. Starting with the influence of length, most current literature agrees that, in general, consumers tend to prefer health claims that are short and succinct. Williams (2005, p. 5) maintains that “the presence of short health claims on the front label of food products generates more specific attribute-related thoughts, more inferences, and creates a more believable and positive image in the consumers’ mind than does a longer health claim”. This may be attributed to the fact that short health claims take less time to read and understand.

Consistent with this finding, shorter health claims were also found to be more effective and did not seem to inspire more exaggerated beliefs about a product’s healthfulness as compared to longer ones (Williams, 2005). This could be due to the fact that longer health claims may be more distracting than useful, as they provide an excess of information as compared to shorter health claims

(Wansink, Sonka, & Hasler, 2004; as cited in Stancu et al., 2021). Moreover, shorter health claims may give rise to more believable and positive images in the minds of consumers than longer claims (Singer et al., 2006; as cited in Nocella & Kennedy, 2012).

Incorporating both short and long health claims may improve consumer perception of a food product. Williams (2005) found that by combining short health claims on the front of a food product with more detailed information on the back of the product, consumers were more accurately able to process and believe in the claim (Williams, 2005). In comparison, longer claims presented on the front of the package alone were either ignored by consumers or misunderstood.

The direction of a health claim—i.e., whether a health claim is framed as risk-reducing (negatively framed) or benefit-incurring (positively framed)—also has an impact how consumers perceive a food product. Put simply, risk-reducing claims appeal to “avoidance motives for evading a negative outcome” and benefit-incurring claims “approach motives for gaining benefit” (Lähteenmäki, 2013). In other words, benefit-incurring claims focus on the contribution of certain aspects of a product that may improve one’s health, while risk-reducing claims focus on the ability of certain product attributes to lower the risk of diseases and health problems (Pichierri et al., 2020). In general, it has been reported that risk-reducing framed health claims result in increased purchasing intention as compared to benefit-incurring framed health claims (van Kleef et al., 2005). This can partially be explained by Prospect Theory, which asserts that possible losses are perceived more sensitively than possible gains. Therefore, health claims that allude to disease may be perceived as more persuasive than those mentioning added benefits (Lähteenmäki, 2013).

However, research investigating the influence of risk-reducing vs benefit-incurring health claims on consumer perception of food products has resulted in largely mixed results. Some studies have found the opposite of the aforementioned effects, showing that benefit-incurring health claims are regarded more favorably by consumers because “positive framing can evoke



positive mental associations and encourage more positive ratings of such claims” (Krishnamurthy et al., 2001; as cited in Pichierri et al., 2020, p. 3). On the contrary, negatively framed claims may evoke more negative associations such as that of illness and disease, causing consumers to perceive products containing these claims as less attractive (Pichierri et al., 2020).

Studies have also shown that claims providing new information may have a positive effect on consumer perception of a product (Williams, 2005). One study conducted in Denmark, Finland, and the United States discovered that consumer perceptions of a health claim relating to oligosaccharides, something very few consumers are aware about, was significantly more positive than perceptions of a product with an omega-3-fats health claim in three different products (Williams, 2005).

The content and the wording of a health claim can also impact consumer perceptions. Health claims using more common terms have been shown to spur assumptions about a product that go beyond what is stated in the health claim, making them appear more healthful to consumers and increasing consumers’ intentions to buy (Stancu et al., 2021). Moreover, shorter claims comprised of general mentions of health benefits are better received by consumers than claims containing excess, specific information concerning diseases (Nocella & Kennedy, 2012). In fact, complex, scientific wording and inclusion of words that may be considered as alarming such as “cancer” in health claims have been found to have an adverse effect on consumer perceptions of food products (Kapask et al., 2008; as cited in Nocella & Kennedy, 2012). More research is needed, however, as many studies have found that the wording of health claims plays only a minor role in consumer perceptions of health claims (Lähteenmäki, 2013; Stancu et al., 2021).

However, the text clarity of a health claim—i.e., the ability of a health claim to convey its intended message in clear and unequivocal language—may also influence consumer understanding and perception of the healthiness of a food product (Pichierri et al., 2021). Most literature asserts that consumers prefer simple messages in regard to health claims as they allow for greater

understanding of the claim's intended effects (Williams, 2005). In fact, health claims using unambiguous wording have even been shown to increase consumers' perceived importance of following a healthy diet (Wills et al, 2008; as cited in Pichierri et al., 2021).

Contrarily, technical language such as health claims in extra virgin olive oil referencing polyphenols content, may be more difficult for consumers to understand and therefore may not be as effective as simpler claims in delivering their intended messages (Pichierri et al., 2021). Moreover, claims using complex language may cause consumers to doubt the quality and healthiness of the product (Syederberg & Wendin, 2011; as cited in Pichierri et al., 2021). Therefore, improving the text clarity of a health claim may lead to greater consumer understanding of the claim as well as increased healthfulness perceptions towards that product.

Other lexical issues have also been reported in research regarding consumer understanding of health claims. Consumers are typically unable to discern the true difference and impact of health-related elements usually cited in health claims such as saturated, trans, and omega-3 fats; calories, salt, sugar, and carbohydrate content, etc. (Nocella & Kennedy, 2012). Therefore, consumers are oftentimes misled by health claims or not capable of fully understanding the claim that has been made.

Moreover, specific words and phrases used in health claims such as "milk free" may further confuse consumers by leaving too much room for interpretation. In this example, "milk free" could be interpreted as being free of all milks, including alternative milks such as soy and oat, or just as being free of cows' milk. Furthermore, there could also be confusion as to whether or not the product might contain other dairy products such as cheese or butter (Nocella & Kennedy, 2012). Regulatory bodies seeking to control the implementation of health claims try to mitigate this effect by creating a framework for what information can be correctly interpreted by the average consumer. This, however, leads to the question of what constitutes the average consumer, and to what extent this average consumer is able to understand health claims.

Legislation aiming to regulate health claims as well as the idea of the average consumer will be explored in greater detail in Chapter 3.3.

Lastly, whether a food product contains one health claim or multiple health claims can also have an influence on consumer understanding. While most food products have only one claim, some are labeled with multiple—even when the claims are based on the same scientific evidence (Tamemura & Hamadate, 2022). This can cause a discrepancy in information for consumers, as they can be left confused as to why one product may only list one benefit while another cites multiple. One study by Tamemura & Hamadate (2022) investigated this discrepancy to see to what extent it impacts consumer understanding of health claims, preferences, and overall behaviors. The study found that the majority of participants chose the multiple-benefit product over the single-benefit product, with a higher proportion of those who chose the multiple-benefit product questioning the information discrepancy between the two labels than those who chose the single-benefit product (Tamemura & Hamadate, 2022). Consumers' preferences for the multiple-benefit product over the single-benefit product can be largely attributed to consumers querying the discrepancy between the labels. In other words, consumers were left wondering why one product offered more benefits than the other, and so they chose the product offering more expected benefits as a result.

From this, it can be assumed that ambiguous and multiple-claim labeling can mislead consumers and contribute to things like the halo and magic bullet effects, as explained previously. Furthermore, the study found that when asked where they would find information supporting the efficacy of the health claims listed on the products, the majority of participants looked to the food packaging rather than external sources like the internet (Tamemura & Hamadate, 2022). Because there is limited space on food packaging and because product design/labeling has a high impact on consumers' purchasing decisions, information regarding the efficacy of health claims should be provided on a public platform, such as a company website (Tamemura & Hamadate, 2022).

## 2.4 Personal Factors

Further influential factors impacting consumers' perceptions of health claims and their subsequent purchasing decisions are personal factors. This includes one's prior attitudes and knowledge, one's perceived relevance of a product, and one's level of familiarity with a product or claim.

Existing research asserts that “familiarity of claims and functional foods increases perceived healthiness and acceptance of these products” (Lähteenmäki, 2013). In this sense, familiarity means awareness or understanding of the functional compound highlighted, the health benefit communicated, the specific health claim, or the product category as a carrier of a health claim. Supporting this idea is a study conducted by Dean et al., (2012), which maintains that prior market exposure or use of functional products results in a more positive perception of health claims. The study was conducted in Finland, Germany, Italy, and the UK on a group of consumers who were responsible for their family's grocery shopping and found that health claims—both risk-reduction and benefit-incurring claims, as discussed in Chapter 2.3—increased consumer willingness to try a product when combined with familiarity with a product and/or previous knowledge about the health benefits of a certain food. This may be due to the “halo” and “magic bullet” effects, wherein a consumer may view a food as healthier if it includes a health claim. As was shown in the aforementioned study, one's prior beliefs about the healthfulness of a product may add to this effect (Williams, 2005).

Despite the many factors impacting consumer perception of health claims, attitudes and prior knowledge of a product seem to be the most influential elements in predicting purchasing decisions. One study evaluating the effect of physical product attributes like color on consumer understanding of a product's healthfulness found that above all else, consumer attitudes about a product had a significant impact on buying intention. Instead of basing their purchasing decisions on factors such as packaging or even health claims, consumers' buying intentions were mostly explained by whether they had negative or

positive attitudes towards the product. Important to note, however, is that brand attitudes can oftentimes be impacted by packaging. Therefore, although there is no direct impact of packaging on consumer purchasing behavior, there is some indirect influence via brand attitude.

Purchasing intentions were also shown to increase when participants displayed a positive attitude towards a product and were shown to decrease when respondents showed negative attitudes towards a product (Theben et al., 2020). Moreover, a study conducted by Lombardi et al. (2021), found that one's attitudes towards using food as a medicine was statistically significant in regard to understanding health claims. From this, it can be assumed that a consumer's motivation to understand a health claim is elevated when they believe the food carrying the health claim could prevent disease (Lombardi et al., 2021).

Prior knowledge about nutrition or general interest in nutrition information has also been substantiated by several studies as having an impact on consumer perception of health claims (Lombardi et al., 2021). In essence, the more likely one is to eat for health reasons and the more knowledgeable one is about nutritional information, the better they are able to understand health claims. One possible explanation for this result is perhaps that one's knowledge of nutrition can aid in minimizing misperceptions caused by health claims. For example, one's prior nutrition knowledge may moderate the effect that claims regarding the nutrient content of a food might have on consumers with less nutrition knowledge (Williams, 2005). However, understanding a health claim accurately does not guarantee that a consumer will perceive it as relevant to them.

The perceived personal relevance of a health claim is extremely influential in how consumers view products and make purchasing decisions. Extant literature agrees that "perceived relevance increases the perceived benefit and makes products or concepts more appealing" (Dean et al., 2012; Verbeke, 2005; as cited in Lähteenmäki 2013) and enhances information processing (Petty & Cacioppo, 1986; as cited in Lähteenmäki 2013). One study found that "health claims relating to a personally relevant illness were considered more attractive and convincing and had higher purchase intention ratings compared to health

claims not relating to a personally relevant illness” (van Kleef et al., 2005). This again relates to the elevated efficacy of risk-reducing health claims in comparison to benefit-incurring claims as a result of the Prospect Theory, as discussed in Chapter 2.3. Consumers who are ill will likely find health claims promising reduced-risk of disease—i.e., something negative—more persuasive than claims about possible benefits.

Despite this, research on consumer perception of health claims and their impact on purchasing decisions is still quite contradictory and understanding why and how consumers can be misled is lacking. One possible solution to this disproportionate misunderstanding could be the development of public programs of nutrition information and increased regulation of health claims by governmental agencies (Williams 2005).

Against this background, it is suggested that:

**H1: The presence of a health claim increases a consumer’s perception of the healthfulness of a product.**

**H2: The presence of a health claim decreases a consumer’s perception of the tastiness of a product**

### **3 Health Claims**

#### **3.1 The Unhealthy-Tasty Intuition and Consumer Purchasing Decisions**

As mentioned briefly in Chapter 2.2.1, consumer perception of food claims can be greatly impacted by a phenomenon called the unhealthy-tasty intuition, or healthy-tasty intuition. Though these terms can be used interchangeably, this concept will be referred to as the unhealthy-tasty intuition for the purposes of this thesis. To understand the influence of the unhealthy-tasty intuition on consumer understanding of food claims and their subsequent purchasing

decisions, this Chapter provides an overview about state-of-the-art literature discussing the unhealthy-tasty intuition.

The unhealthy-tasty intuition refers to the phenomenon wherein the perceived healthfulness of a product by a consumer may lead to negative taste expectations (Garaus & Lalicic, 2021; Raghunathan et al., 2006; Tønnesen et al., 2022). As a result of the predicted worse taste of the product perceived as healthy, consumers will be less likely to try the product and eventually buy it (Kim, Suh & Evens, 2010; as cited in Garaus & Lalicic 2021). In fact, this process occurs even when there is “no information provided about the relative tastiness to other foods” (Raghunathan et al., 2006; as cited in Garaus & Lalicic 2021, p. 2). This is because taste is the main driver of food decisions for consumers and is significantly more impactful than healthiness (Turnwald & Crum, 2019) due to conscious or subconscious cognitive associations held by consumers that the healthier a food is, the worse it will taste.

Tastiness is also processed before healthiness during food choice because consumers’ perceptions of food products depend on to what extent consumers believe the product can fulfill both their hedonic and functional goals (Garaus & Lalicic, 2021). In this context, hedonic goals for a consumer could include enjoying the meal (Clark, 1998; Elder & Krishna, 2010; Kang, Jun, & Arendt, 2015; as cited in Garaus & Lalicic 2021), and functional goals could include improved well-being (Andrews, Netemeyer, & Burton, 1998; Choi & Reid, 2018; Eertmans, Victoir, Vansant, & Van den Bergh, 2005; Jeong & Jang, 2016; as cited in Garaus & Lalicic 2021). However, because tastiness is processed more directly than healthiness, consumers will tend to choose food products with higher perceived tastiness over ones with more optimal health benefits (Petit et al., 2016; as cited in Garaus & Lalicic 2021) even when the consumer is aware of the negative effects of unhealthy foods.

As a result of the unhealthy-tasty intuition, health claims may actually backfire in regard to consumer purchasing decisions. This is exacerbated by the fact that “portrayed healthiness tends to incite consumers to rely more strongly on taste inferences, particularly where there is a lack of knowledge about a product

attribute” (Raghunathan et al., 2006; as cited in Garaus & Lalicic, 2021, p. 3). For instance, one study by Liem et al. (2012) revealed that health cues that indicate a reduction in salt for soups also reduce taste expectations (cited in Garaus & Lalicic, 2021). Another study by Garaus & Lalicic (2021) found that when exposed to a recipe labeled as healthy, consumers displayed lower behavioral intentions (e.g. cooking intentions) as compared to a recipe that did not have any label. These studies support the influence of the unhealthy-tasty intuition on consumer perception of food products and their purchasing decisions.

Despite the negative impact of health claims on behavioral intentions and taste perceptions, this research also supports literature investigating the influence of health claims on consumer understanding of food products. As illustrated by the previous study, while respondents evaluated healthy recipes as less tasty, the recipes branded as healthy evoked stronger health perceptions as compared to the unhealthy recipes (Garaus & Lalicic, 2021).

Yet, despite all of the evidence in support of the existence of the unhealthy-tasty intuition and the subsequent detriment of health claims on consumer purchasing decision-making, “healthy food labels overwhelmingly emphasize health attributes (e.g., low caloric content, reductions in fat or sugar) rather than tastiness” (Turnwald & Crum, 2019, p. 1). For example, calorie labeling has recently been made mandatory in many locations regardless of a lack of evidence showing that they positively impact consumer decision-making. This health-focused labeling actually works in opposition to taste preferences, even going as far as decreasing physiological satiety and rewarding neural responses in consumers (Crum et al., 2011; Crum and Zuckerman, 2017; Crum et al., 2017; as cited in Turnwald & Crum, 2019).

As a result, health claims actually make consumers less likely to form healthy eating habits and gravitate towards healthier foods as they expect them to be lacking in taste, satiety, etc. Health claims also force consumers to “exert restriction and self-control to make healthy choices” (Giuliani et al., 2013;



Metcalf & Mischel, 1999; as cited in Turnwald & Crum, 2019, p. 4), which has been shown to negatively influence food choice.

However, an interesting finding has been investigated by several studies in recent years. It has been found that when a food product is accompanied by a health claim *alongside* a taste claim, it may actually increase a consumer's purchasing intentions. One study found that when promoting an apple with the descriptor 'succulent' alongside claims pertaining to its healthy attributes, consumers were much more likely to choose the apple rather than a chocolate bar (Forwood et al., 2013; as cited in Garaus & Lalicic 2021). However, when the apple was promoted with only a taste or health claim, the descriptors had no influence on purchasing behavior.

Supporting this idea further is a study conducted by Garaus & Lalicic (2021), wherein it was found that the negative impact of health labels could be remedied when accompanied by a taste label. Reasonings for this include that the combination of health and taste claims may provide consumers with more information to solve their problem (in this case, choosing a recipe that is both healthy and tastes good), therefore positively impacting their purchasing intentions.

Furthermore, a combined label may help to bridge an associative gap held by consumers that healthy foods do not taste good. By stating not only healthy attributes but also tasty attributes in a label, customers may be primed to view the product as more desirable, as it would be able to satisfy both their hedonic and functional needs (Forwood et al., 2013; as cited in Garaus & Lalicic 2021). Taste-focused labeling of healthy foods redirects consumer attention to the tasty and rewarding properties of the food product rather than just the health benefits, which, as previously explained, is the main driver behind food choice (Turnwald & Crum, 2013). Therefore, by including taste claims alongside health claims, the consumer belief that healthy foods are bland and do not taste good (e.g. the unhealthy-tasty intuition) is shifted.

So, while consumers may assess a food product as tastier when accompanied by just taste claims alone, purchase intention may be increased by incorporating both health and taste elements into product labeling. This beneficial effect of combining taste and health labeling should be used for healthy foods only, however, as implementation of this phenomenon with unhealthy foods would have ethical impacts for public health.

Against this background, it is suggested that:

**H3: The presence of a health claim and a taste claim increases (a) consumer's perception of the healthfulness of a product and (b) a consumer's perception of the tastiness of a product**

**H4. (a) Consumer's perception of the healthfulness of a product and (b) consumer's perception of the tastiness of a product positively impact purchase intentions.**

### **3.2 Information Processing and Time Constraints**

Information processing theories like dual processing theories can be used to help explain consumer understanding of health claims. While information processing will not be investigated directly in this thesis, theories like the Elaboration Likelihood Model or the Heuristic-Systematic Model can help to explain why and how consumers perceive foods with and without health claims the way that they do. These theories put forward that consumers take part in two main methods of processing: deep processing and shallow processing (Grunert et al., 2011; Leathwood et al., 2007; as cited in Stancu et al., 2021).

While deep processing requires a substantial amount of time and effort to draw conclusions from available information, shallow processing calls for little time and effort as it “relies mainly on learned associations or simple rules of thumb to process the information as fast as possible” (Chen & Chaiken, 1999; Petty & Cacioppo, 1986; as cited in Stancu et al., 2021, p. 2). This has significant implications for consumer comprehension of health claims as the mode of processing enacted by consumers is in great part determined by their motivation

and ability to process the available information (Petty & Cacioppo, 1986; Petty & Wegener, 1998; as cited in Stancu et al., 2021).

Some studies have found that the higher a consumer's motivation and ability is, the more accurately they can process and interpret health claims. This is because higher motivation can increase attention to relevant details and enhance comprehension. Similarly, higher ability to process available information amplifies understanding and interpretation of information (Celsi & Olson, 1988; Moorman, 1990; as cited in Stancu et al., 2021).

Time constraints, however, can impact which method of processing is performed by consumers. This is especially relevant to consumer understanding of health claims as, in a normal shopping situation, consumers do not have unlimited time to consider their food purchases (Stancu et al., 2021). Therefore, time constraint may also be a factor influencing the extent to which consumers understand health claims in food products.

As participants of the study outlined in this thesis will not be under time constraint, this is not expected to be a factor impacting their perception of products with and without health claims. However, it is important to understand the role of time constraints as they play a significant role in consumer understanding of health claims as they encounter them in real-life shopping situations.

Prior research on the effect of time constraints on consumer understanding of health claims maintains that time constraints facilitate shallow information processing rather than deep information processing, even when motivation to process the available information is high (Chaiken, Liberman, & Eagly, 1989; Suri & Monroe, 2003; as cited in Stancu et al., 2021). This tendency for shallow processing while under a time constraint is even more frequent in the case of first-time purchases, as consumers are not yet familiar with the food product. As explained in an earlier section, familiarity with a product increases consumer understanding of health claims because consumers are able to better understand the product and interpret its given health claim.

### 3.3 Legislation

In response to the growing concern of misleading consumers with health claims in food advertising, many countries have developed legislation with the aim of providing food manufacturers and advertisers with a regulatory framework for making health claims.

This framework is designed with the goal of protecting consumers against misleading claims and ensuring that health claims are well-understood by the average consumer. Consumer misunderstanding of health claims has been shown to be positively related to intention to buy a product, making the need for rules and regulations around health claims vital. Otherwise, there is nothing inhibiting food manufacturers to make claims that may intentionally mislead consumers so that they are more likely to purchase their products (Stancu et al., 2021), regardless of if the claims are true or not.

Ways that consumers might be misled include the “halo” and “magic bullet” effects. These effects can lead consumers to believe that a food is healthier than it actually is as a result of a health claim (Orquin & Scholderer, 2015). For example, one study showed that products displaying a claim were typically expected to be healthier than a product without a health claim, even if the products were otherwise identical (Tønnesen et al., 2022). This illustrates the halo effect caused by health claims, as consumers are more likely to regard a product containing a health claim as more nutritious and healthful solely due to the presence of a health claim and not on other factors.

A problem arises in addressing these issues, however, as there is a current research gap regarding what defines the average consumer. EU Regulation 1924/2006 Recital 15 defines the average consumer as someone “who is a reasonably well informed and reasonably informed observant and circumspect, taking into account social, cultural and linguistic factors” (Nocella & Kennedy, 2012, p. 572). However, how to exactly define the “average consumer” remains a central debate concerning the regulation of nutrition and health claims. This is due to a gap in systemic research exploring to what extent the ‘average

consumer’ can understand ‘unqualified’ (strongly supported by scientific evidence) and ‘qualified’ (not strongly supported by scientific evidence) health claims (Nocella & Kennedy, 2012).

Moreover, many countries either have not implemented legislation regulating health claims, or, if they have existing legislation, it largely fails to address the aforementioned problem. Countries also have different regulations than others and allow health claims with varying degrees of scientific validity.

For instance, European legislation only accepts the publishing of health claims which are substantiated by scientific evidence. Health claims are strictly regulated and undergo procedures that seek to evaluate the scientific evidence behind the claims. From this process, a list of approved claims that can be used in food products was created. This regulation, EU Regulation, EC No. 1994/2006, maintains that “Nutrition claims are only allowed if a product can contribute as a source or is regarded as a good source of a nutrient, or in the case of nutrients to be avoided the reduction needs to be nutritionally meaningful” (Tønnesen et al., 2022, p. 1).

The regulation further maintains that health claims must act in accordance with a set nutrition profile to guard consumers from misleading claims. Another issue arises, however, as the requisite nutrition profile has yet to be provided (de Boer, 2021; as cited in Tønnesen et al., 2022). Therefore, health claims currently used in food products in the EU do not adhere to a certain nutritional profile or product group. This means that health and nutrition claims can continue to be used with products of poor nutritional value, perhaps leading consumers to believe that products with a health claim are more nutritious by default (Al- Ani et al., 2016; Chandon, 2012; Chien et al., 2018; as cited in Tønnsen et al., 2022).

Contrarily, Japan and the United States—the two countries to first establish a regulatory framework for health claims in the 1990s— allow for health claims to be published which are based on suggested scientific evidence as long as qualifying statements are given (Lähteenmäki, 2013). In this context, a qualifying statement can be defined as a word or phrase that makes a statement

less certain. An example of a qualifying statement in regard to health claims could be “may lower cholesterol” rather than “lowers cholesterol”. This is problematic, as consumers may confuse qualifying statements as true statements. The issue then leads back to deciding who the “average consumer” is, and to what extent they understand health claims.

There are many different regulations that have been implemented in attempts to mitigate the problem of misleading consumers with health claims. One type of regulatory framework is front-of-pack nutrition labeling. This type of labeling aims to help consumers identify food healthfulness characteristics, and therefore make healthier choices. It also seeks to inform consumers of important nutrition information and protect them from misleading claims. Some examples of front-of-pack-nutrition labeling regulation include the Scandinavian keyhole label (Ministry of Food, Agriculture and Fisheries, 2009; as cited in Orquin & Schoderer, 2015), the British traffic light label (Food Standards Agency, 2007; as cited in Orquin & Schoderer, 2015), and the European GDA label (IDG, 2006; as cited in Orquin & Schoderer, 2015). These schemes all try to aid consumers in distinguishing healthy and unhealthy foods.

One study examining the effectiveness of such regulations—the Scandinavian Keyhole label, in particular—found no effect on the perceived healthfulness of a product regardless of official campaigns and advertisements supporting the label. In fact, the “organic” label that the keyhole label was studied against actually resulted in a positive effect on perceived healthfulness, despite the label “organic” having no real bearing on the healthfulness of a product (Orquin & Schoderer, 2015). This study illustrates the extent to which consumers fail to understand health claims, as a label which was not meant to communicate anything about healthfulness was perceived as more healthful than a label intended to communicate healthfulness.

It is important to note that some legislation has been created with the aim to enhance consumer understanding. In the United States, a system of grading health claims by strength of scientific evidence was developed using the letters *A*, *B*, *C*, and *D*. The letter *A* refers to health claims supported by strong scientific

evidence (unqualified health claims), and letters B, C, and D, refer to health claims supported by moderate, low, and extremely low scientific evidence (qualified health claims), respectively (Nocella & Kennedy, 2012).

Despite this, there still lacks a universal regulation of health claims, as legislation differs greatly from country-to-country with some having no framework at all. A survey of the global regulatory environment for health claims by the World Health Organization (WHO) found that “among 74 countries and areas reviewed, the greatest proportion (35) had no regulation of health claims; 30 disallowed any reference to disease in a claim; 23 allowed nutrient function and other claims; and only 7 permitted specified disease risk reduction claims or had a specific framework for approval of such claims” (Orquin & Schoderer, 2015). Moreover, misleading health claims still prevail even in countries where health claims have been entirely banned or restricted in some way. This is done by the use of so-called ‘soft’ health claims, or health claims that imply healthfulness without naming a specific disease. In conclusion, though some legislation exists addressing the issue of misleading consumers with health claims, there is still much contradiction and lacking research on what defines the average consumer and what regulation can best protect them against deceptive health claims in food advertising.

Though the prevalence of health claims in food products has only increased in recent years, research on their influence on consumer understanding and buying behavior remains highly contradictory.

## **4 Methodology**

The methodology implemented in this thesis is separated into several sections as explored within this chapter. First, the research questions focused on in this thesis and their corresponding hypotheses will be outlined and explained (see Chapter 4.1). Then, the research design of the current research study will be discussed, for which a quantitative approach was chosen (see Chapter 4.2). In

the next section, the chosen experimental design—an online true experiment—will be discussed, followed by an explanation of the measurements utilized within the online survey (see Chapter 4.3 and 4.4). The sampling methods, characteristics, and results of the online survey will then be presented and discussed (see Chapter 4.5). Lastly, an interpretation of the survey’s findings will be provided alongside recommendations and limitations of the study within the context of current and future research (see Chapter 4.6 and 4.7).

#### **4.1 Research Questions and Hypotheses**

For convenience purposes, the following section, Chapter 4.1, will consist of a brief summary of the two research questions focused on in this thesis and their corresponding hypotheses. As mentioned in Chapter 1, the health and wellness food market value worldwide has grown from 707.12 billion USD to 811.82 billion USD (Statistica, 2021), causing many food manufacturers to add health claims to their products in response to growing public concern towards the increasing prevalence of life-style related, non-communicable diseases that could possibly be mitigated by healthier dietary behaviors. The impact that health claims have on consumer perceptions of food products can be influenced by various other factors, however, as outlined in Chapter 2. Thus, the first research question has been created to evaluate the extent to which health claims impact consumer perceptions of food products as compared to food products with no health-specific labeling:

**RQ1: To what extent do health claims impact consumer perceptions of food products as compared to food products with no health labeling?**

The corresponding hypothesis H1 was formulated based on prior research that found consumers will regard a food product as healthier or offering more benefits when it included a health claim vs no health claim, likely as a result of the halo and magic bullet effects (Hannahan & Shuldt, 2013; Stancu et al., 2021) (see Chapter 1).

**H1: The presence of a health claim increases a consumer’s perception of the healthfulness of a product**



Two further hypotheses were then created regarding the effects of health labeling on taste perceptions. The unhealthy-tasty intuition puts forth that the healthier consumers perceive a product to be, the less tasty they will find that product (Raghunathan et al., 2006; Garaus & Lalicic, 2021; Tønnesen et al., 2022). However, research conducted by Forwood et al. (2013) and Garaus & Lalicic (2021) suggests that negative influence of health claims on consumer perception of the tastiness of food products can be remedied when the health claim is presented in combination with a taste claim (see Chapter 3.1). Therefore, the author believes that consumers will perceive food products containing health claims alone as less tasty than food products with no health labeling. However, it is also predicted that when the food product includes both a health claim and a taste claim, consumers will perceive the product positively on both attributes.

**H2: The presence of a health claim decreases a consumer's perception of the tastiness of a product**

**H3: The presence of a health claim and a taste claim increases (a) consumer's perception of the healthfulness of a product and (b) a consumer's perception of the tastiness of a product**

The second research question explored in this thesis concerns the influence that health claims and taste claims have on consumer purchasing intentions. Research is divided on the impact of health claims and perceived healthfulness of a product on purchasing decisions, with some research finding that products containing health claims results in increased purchasing intentions as a result of perceived benefits gained by consuming the product (van Kleef et al., 2005). Contrarily, other studies have found that products containing health claims negatively impact purchasing intentions, likely due to the unhealthy-tasty intuition (Garaus & Lalicic; Kim, Suh & Evens, 2010). However, studies conducted by Forwood et al. (2013) and Garaus & Lalicic (2021) conclude that purchasing intentions are increased when consumers are presented with a product containing both health and taste claims together. Thus, the author predicts that a combination of both will result in higher purchasing intentions.

**RQ2: As compared to a health only claim, to what extent do food products with a combined health and taste claim prompt higher purchasing intentions?**

**H4. (a) Consumer’s perception of the healthfulness of a product and (b) consumer’s perception of the tastiness of a product positively impact purchase intentions.**

## **4.2 Research Design**

Research design refers to the method of carrying out and collecting primary research in an attempt to answer a particular research question through collection, interpretation, analysis, and discussion of data. There are three distinct forms of research design—quantitative, qualitative, and mixed methods—and each utilizes different strategies of research collection for their unique research purposes (Creswell, 2014).

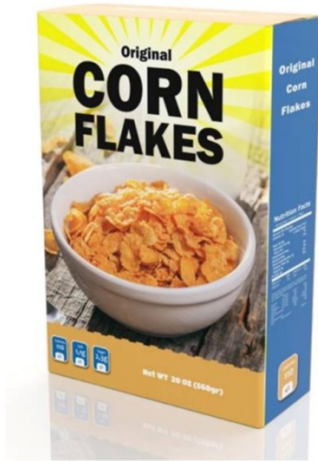
For this thesis, a quantitative research approach has been chosen based on the need to investigate the causal relationships between health claims, taste claims, consumer perceptions of food products, and consumer purchasing intentions. Quantitative research refers to research for “testing objective theories by examining the relationship among variables” (Creswell, 2014, p. 4), and aims to validate certain relationships, make predictions, and test hypotheses. An online true experiment has been selected for data collection, consisting of a one-factor, between subjects design (no label vs. health label vs. health & taste label). Participants were randomly allocated to one of the three experimental conditions and their perceived healthiness, tastiness, and purchasing intentions towards the product was evaluated on 7-point Likert scales. The utilized Likert Scales and response options are based on previous academic literature. Due to the desired target sample size and the ongoing Covid-19 pandemic, the survey will be conducted exclusively online.

### 4.3 Online Experiment

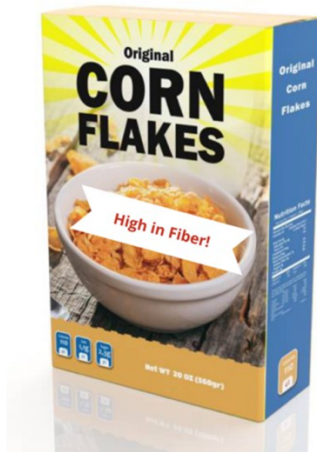
To investigate the hypothesized relationships posed in this thesis, an online true experiment has been selected. A true experiment is used to refer to a randomized experiment, or an experiment wherein there is at least one independent variable that is experimentally manipulated and at least one dependent/control variable (True Experimental Design - SAGE Research Methods, 2022). In the case of this study, the online survey platform “soscisurvey.de” has been chosen for construction and implementation of the experiment (Soscisurvey, 2022).

The survey can be organized into three sections, the first being one of the three stimuli, followed by the questionnaire as measured by various Likert Scales assessing perceived healthfulness, tastiness, and purchasing intentions, and closed by a demographics section. At the start of the survey before the participant is shown the stimulus, the question whether or not the participant likes cornflakes is posed. If the participant answers “no”, then they are not able to continue with the survey due to the fact that it would influence their perception of the stimuli outside of what is manipulated by the different labeling groups.

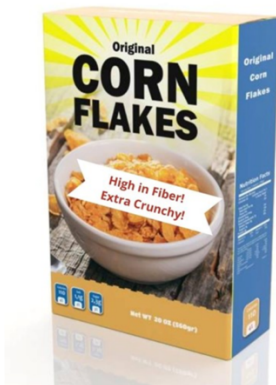
The stimuli presented in the first section depicts a cereal box, which has three different variations. The images, graphics, and fonts utilized to create the cereal box were obtained online from copyright-free and creative common-licensed sources. In order to test the hypothesized differences in health and taste perceptions and purchasing intentions of consumers based on labeling, two labels were created with distinctive labels and one stimuli was presented with no special label as a control. Participants were randomly assigned via Soscisurvey.de to either a cornflakes box labeled with a health label “High in Fiber!”, a cornflakes box with a taste label “High in Fiber! Extra Crunchy!”, or a cornflakes box with no label to serve as the control group. The full layout of the experiment, design, and stimuli can be found in the appendix of this paper. The three stimuli are also presented in the figures below:



*Figure 1: No Label*



*Figure 2: Health Label*



*Figure 3: Health and Taste Label*

#### 4.4 Measurement

In the questionnaire section of the experiment directly following the stimulus, participants were first asked a manipulation check question to determine if the different product labels of the three experimental groups was recognized. Participants were asked: “Did the product include a label?”. Response choices corresponded to the three different labels: “Yes, a health label”, “Yes, a health and taste label”, and “No label was included”.

Next, to measure one’s perception of the healthfulness of a food product based on the different labeling, the product in this case being the cereal cornflakes, the second item in the questionnaire section of the experiment asked participants “How healthy do you think this product is?”. Participants must then evaluate how healthy they believed the product to be on a 7-point Likert Scale from 1: Not at all healthy to 7: Very healthy. This question was shown to participants of all three experimental conditions, including the no-label control group, and was based on Franco-Arellano et al. (2020).

In order to measure the second area of interest of this thesis, one’s tastiness perceptions of a food product based on different labeling, the third two items of the questionnaire asked participants: “How tasty do you think this product is?” and “How much do you think you would enjoy eating this product?”. Consumers then evaluated their tastiness perceptions on two, 7-point Likert Scales from 1: Not at all tasty to 7: Very tasty. This question was also shown to participants of all three experimental conditions and was based on Huang & Wu (2016).

Lastly, participants were asked “How likely would you be to buy this product?”. This was asked with the intention of discovering if the different labeling would make an impact on consumer purchasing intentions. Participants were asked to respond to this question on a 7-point Likert Scale ranging from 1: Not likely to 7: Very likely. This was based on Franco-Arellano et al. (2020). Furthermore, to determine how familiar participants were with the brand Cornflakes, participants were asked to indicate how familiar they were with the presented

brand. They were asked to evaluate their familiarity on three, nine-point scales measuring if they had 1: heard of the brand before, 2: recognized the brand, and 3: were familiar with the brand.

The final section of the survey consisted of demographic questions about age, highest completed education level, and gender. The question concerning age did not include predefined categories and was open for self-indication. The highest level of completed education question was based on both the U.S and Austrian school systems and ranged from Primary School to University. Options for gender included Male, Female, Transgender, and Prefer not to say. In the appendix of this paper, the precise wording of all questions, scales, and statements are indicated.

## **4.5 Results**

In the following chapter, the findings and results of the experimental survey will be presented, analyzed, and discussed. First, the sample's demographic characteristics will be displayed (Chapter 4.5.1). Next, scale reliabilities for the healthfulness, tastiness, and purchasing intention scales will be presented, along with the results of the survey's manipulation check (Chapter 4.5.2 & 4.5.3). The main results of the survey will be discussed in relation to the proposed hypotheses (Chapter 4.5.4) and recommendations will be given (Chapter 4.5.5). Finally, limitations and prospects of the current study will be explored (Chapter 4.5.6).

### **4.5.1 Sample Description**

Requirements for participating in the survey included competence in the English language and internet access as the survey was conducted exclusively online and was entirely in English via [soscisurvey.de](https://soscisurvey.de). Access to the survey was permitted for a 10-day period from April 25<sup>th</sup>, 2022 to May 4<sup>th</sup>, 2022. The survey was only accessible via the [soscisurvey.de](https://soscisurvey.de) link, which was shared to the author's social media platforms. There were no further restrictions and there were 209 overall completed surveys. Out of this sample, there were 131 viable responses. The other 78 were not able to proceed past the first question "Do you like

cornflakes?” because “No” was chosen as a response, and this negative perception towards Cornflakes could then impact their perception of the stimuli on factors other than the different labeling. From the remaining 131 surveys, 32 were considered not viable as participants did not answer all of the questions. Therefore, the official number of collected surveys amounted to 99 valid responses.

The sample of this thesis’ survey includes participants aged between the range of 15 and 53, with the mean age being 22. From the valid sample group, one response was disregarded due to the fact that “Female” was written instead of an age. Of these participants, 46.5% identified as male and 53.5% identified as female. Although “Transgender” and “Prefer not to say” were other possible options for gender identification, these categories were not chosen by any of the participants in the final survey group.

For highest completed education level, options given were based on the USA and Austrian school systems. From the viable sample group of 99 respondents, the smallest proportion, 1.0%, indicated vocational school as their highest level of completed education. After this, 35.4% of participants identified University as their highest level of completed education. High school, comprising of 63.5% of the valid sample group, represents the largest proportion of participants of the total sample.

Table 1 below has been included for visual representation of the sample’s descriptive statistics:

<i>Study: n = 99</i>	
<i>Mean age:</i>	<i>22</i>
<i>Gender (%)</i>	
<i>Male</i>	<i>46.5%</i>
<i>Female</i>	<i>53.5%</i>
<i>Education (%)</i>	
<i>University</i>	<i>35.4%</i>
<i>High School</i>	<i>63.6%</i>
<i>Vocational</i>	<i>1.0%</i>

*Table 1: Descriptive Statistics*

#### **4.5.2 Scale Reliability**

Since tastiness perception was the only construct measured by more than one question in the survey, a Cronbach's Alpha was conducted solely for these variables. For a Cronbach's Alpha to be considered reliable, its value must be over 0.7. The result of the Cronbach's Alpha for questions "How tasty do you think this product is?" and "How much do you think you would enjoy eating this product?" was 0.816, making the scales for tastiness reliable.

#### **4.5.3 Manipulation Check**

A manipulation check was conducted to deduce if participants could discern the different labeling of the stimuli: no label (control), a health label, or a health and taste label. After exposure to the stimuli, participants were asked "Did the product include a label?". Response options consisted of "Yes, a health label", "Yes, a health and taste label", and "No label was included". A Chi-square test was conducted to evaluate if participants were able to correctly identify which label (or lack thereof) they were exposed to.

The relation between these variables was significant,  $\chi^2(4, N = 99) = 10.769$ ,  $p = .029$ . Participants were largely able to correctly identify which of the three stimuli they were exposed to: no label, a health label, or a health and taste label.



#### **4.5.4 Data Analysis and Results**

In this chapter, the statistical methods utilized in data collection and analysis will be presented. Additionally, the results and analysis of the survey will be discussed in relation to this thesis' research questions and proposed hypotheses.

For descriptive analysis of the sample and its demographic characteristics (Chapter 4.5.1), means and percentages have been used. Data collection and analysis are contingent on previously published and proven reliable scales for gauging healthfulness, tastiness, and purchasing intentions. These scales have been tested for reliability via review of Cronbach's Alpha (Chapter 4.5.2) and have also proven to be reliable in this study. For the main analysis, this thesis' research questions have been investigated via testing their corresponding hypotheses (Chapters 1 & 3). H1, H2, and H3 were tested via estimating a one-way MANOVA to assess the extent to which and direction in which the three experimental conditions influenced consumer healthfulness and tastiness perceptions of a food product (cornflakes). For this, the experimental condition (no label, health label, or health and taste label) acted as the factor variable while healthfulness and tastiness perceptions acted as dependent variables. The claim conditions (health claim or health and taste claim) were compared to the no-claim condition. H4, regarding if a consumer's healthfulness and tastiness perceptions of a food product positively influence purchasing intentions, was tested by regression analysis.

The results and findings of these statistical tests are outlined below, also as depicted visually in a series of tables and graphs. Hypotheses H1, H2, and H3 concern themselves with RQ1, which seeks to investigate to what extent health claims impact consumer perceptions of food products as compared to food products with no health labeling. A one-way MANOVA was conducted to determine whether there are significant differences between consumer perceptions of the healthfulness and tastiness of a food product based on which experimental condition they were exposed to: no label, health label, and health and taste label. H1 predicted a positive association between the presence of a health claim and one's perceived healthfulness of a food product. H2 predicted a negative association between the presence of a health claim and one's

perception of the tastiness of a product. H3 predicted a positive association between the presence of a health and taste claim and one's perception of a) the healthfulness of a product and b) the tastiness of a product).

No significant difference was found in healthfulness and tastiness perceptions between the three experimental groups (no label, health label, and health and taste label),  $F(4,190) = 0.481$ ,  $p = 0.750$ ; Wilks Lambda 0.980, partial eta squared = 0.010.

Furthermore, there was no significant difference found in healthfulness perceptions between experimental groups,  $F(2, 96) = 0.578$ ,  $p = 0.563$ , partial eta squared = 0.012. There was also no significant difference in tastiness perceptions found between the three experimental groups,  $F(2,96) = 0.391$ ,  $p = 0.677$ , partial eta squared = 0.008. Therefore, the test fails to reject the null hypothesis for H1, H2, and H3, and it can be concluded that there is no difference between healthfulness and tastiness perceptions between the no label, health label, and health and taste label groups.

<b>Descriptive Statistics</b>				
	<b>Experimental Condition</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>N</b>
<b>Healthfulness</b>	No Label	3.44	1.356	25
	Health Label	3.80	1.605	35
	Health & Taste Label	3.54	1.144	39
	Total	3.61	1.369	99
<b>Tastiness</b>	No Label	4.4800	1.41774	25
	Health Label	4.3857	1.21924	35
	Health and Taste Label	4.2051	1.22860	39
	Total	4.3384	1.26739	99

*Table 2: Consumer Healthfulness and Tastiness Perceptions based on Experimental Groups*

Though the results to the one-way ANOVA were insignificant, Figure 4 below gives a visual depiction of the differences in means for the evaluated healthfulness and tastiness perceptions between the three experimental groups.

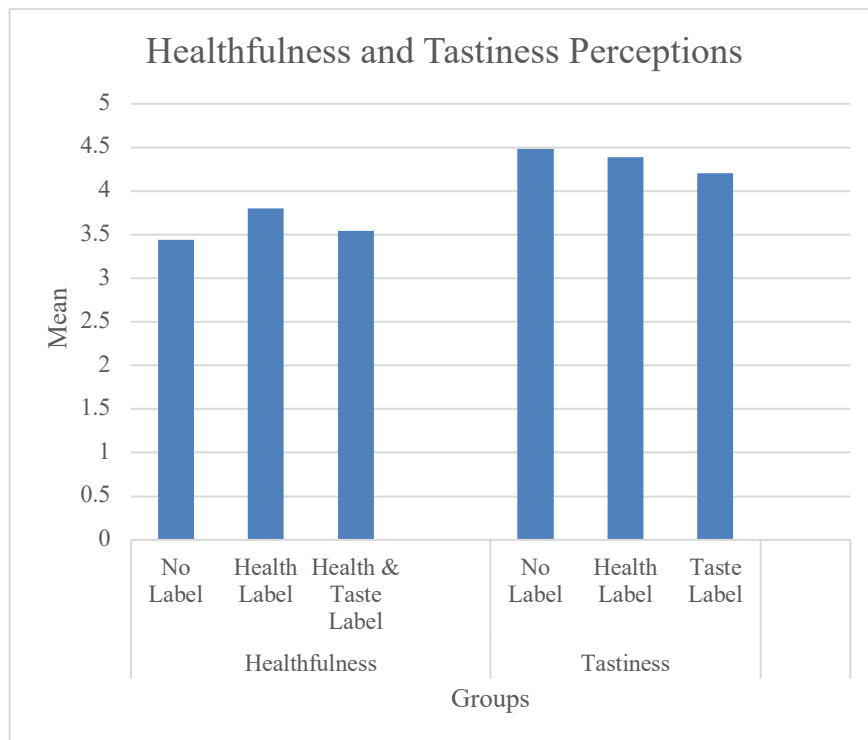


Figure 4: Consumers' Healthfulness and Tastiness Perceptions for Different Label Conditions

The remaining hypothesis, H4, corresponds to RQ2 which seeks to explore if, as compared to a health only claim, food products with a combined health and taste claim prompt higher purchasing intentions. As such, H4 predicts that consumers' healthfulness and tastiness perceptions will result in a higher purchasing intentions towards a food product (in this case, cornflakes). A regression analysis has been conducted to investigate this possible relationship.

The result of the regression analysis is significant and illustrates that healthfulness and tastiness perceptions are both good predictors of purchasing intentions  $F(2,96) = 41.633, p = <0.001$ . Moreover, 45.3% of purchasing intention can be explained by healthfulness and tastiness perceptions. H4 can therefore be accepted, confirming that (a) consumer's perception of the healthfulness of a product and (b) consumer's perception of the tastiness of a product positively impact purchase intentions.

In the Regression Table below, the beta coefficients of the regression analysis are displayed. As can be seen in the second row, the  $B$  for healthfulness is a positive value, 0.317. This means for each one unit increase in healthfulness perceptions, purchasing intentions increases by 0.317 units. Moreover, as seen

in the third row, for each one unit increase in tastiness perceptions, purchasing intentions increase by 0.739 units.

As the  $\beta$  for tastiness perceptions is greater than the  $\beta$  for healthfulness perceptions (0.627 vs 0.290), it can be interpreted that tastiness perceptions had a stronger relationship with the purchasing intentions than healthfulness perceptions. However, as seen in the last column, both variables were found to be significant positive predictors of purchasing intentions.

Source	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>
<b>Healthfulness Perceptions</b>	.317	.082	.290	3.886	<0.001
<b>Tastiness Perceptions</b>	.739	.088	.627	8.384	<0.001

Table 3: Regression Table

The linear regression scatter plots created in SPSS below illustrate these positive relationships:

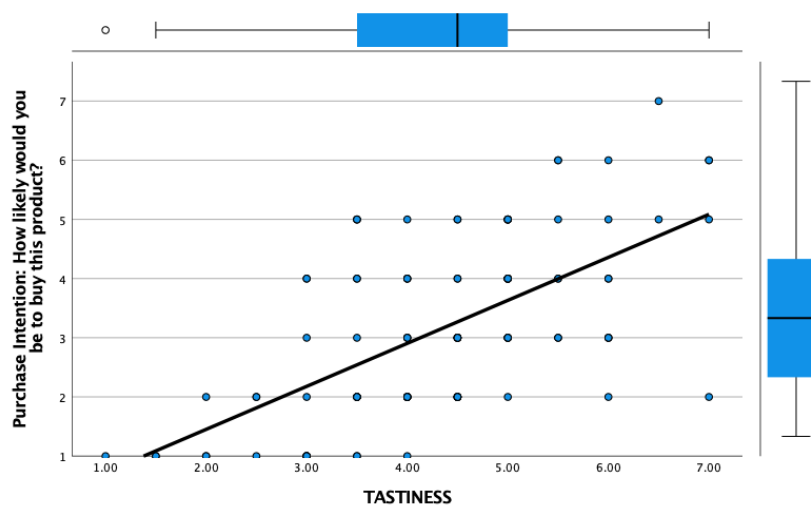


Figure 5: Consumer's Purchasing and Tastiness Perceptions

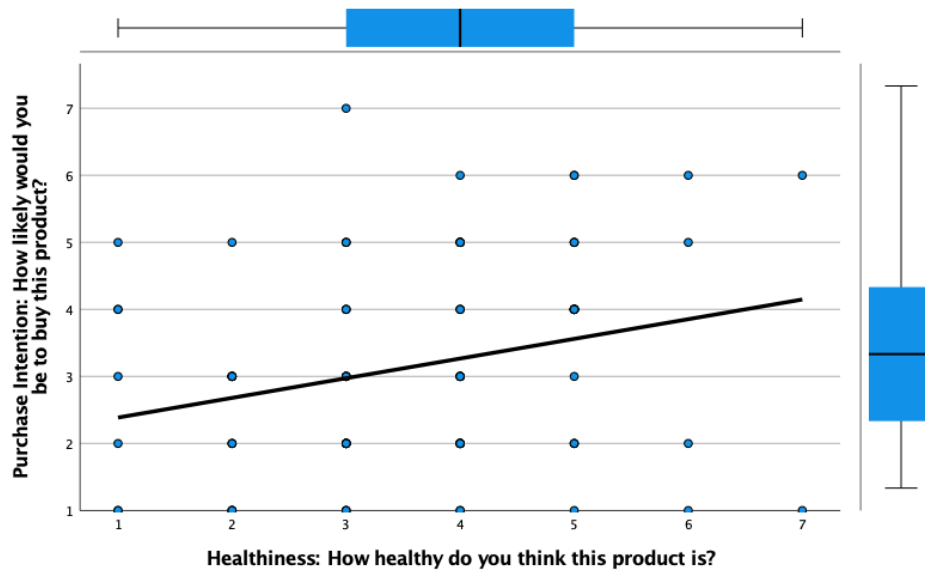


Figure 6: Consumer's Purchasing and Healthfulness Perceptions

#### 4.5.5 Discussion of Results and Recommendations

The following section will discuss the findings of this thesis' experiment in relation to the analyzed literature. Comparisons will be made between the results of the current experiment and prior research, and the two main research questions of this thesis will be discussed in the context of the study's results. Finally, recommendations will be provided for marketers and advertisers in the food industry as well as for legislative decision-makers based on the discussion and interpretation of the results.

Regarding H1, H2, and H3—the hypotheses of this thesis related to RQ1 investigating the extent to which health claims impact consumer perceptions of food products as compared to food products with no health labeling—insignificant findings for all three hypotheses contradict the expected results based on prior literature as analyzed in Chapters 1-3. Several studies in Chapter 1 put forth that inclusion of health labels in food products result in increased consumer healthfulness perceptions towards that product by means of the magic bullet and halo effects (Orquin & Scholderer 2015; Stancu et al., 2021). Moreover, studies investigating the unhealthy-tasty intuition conclude from

their findings that while the presence of a health claim may decrease consumers' tastiness perceptions towards a product, the presence of a health *and* taste claim can increase both consumers' healthfulness and tastiness perceptions towards a product (Forwood, Walker, Hollands, & Marteau, 2013; Garaus & Lalicic, 2021). These findings are not in agreement with the results of the present study, as no significant differences were found between consumer healthfulness and tastiness perceptions based on whether they were exposed to stimuli with a health label, a health and taste label, or no label.

Despite there being no significant findings for H1, H2, and H3, Table 3 in Chapter 4.5.4 displaying participant's healthfulness and tastiness perceptions based on the three experimental groups does show a few differences that support the extant literature. The healthfulness perception rating given by groups shown the health label and health and taste label stimuli were evaluated, on average, slightly higher than the rating given to the no label group. Though the difference in rating was not significant enough between the groups to be statistically significant, this small difference is in line with the extant literature as analyzed in Chapters 1-3. This lack of significance may also be in part a result of the experiment's small sample size, which might explain some of the lack of power for identifying the relationships.

However, the tastiness perception ratings given by all groups were not in agreement with the analyzed literature. The unhealthy-tasty intuition asserts that consumers should perceive products including health labels as less tasty than products without a label and should perceive products including health and taste labels as tastier (Raghunathan et al., 2006; Garaus & Lalicic; Tønnesen et al., 2022). As seen by the average ratings for tastiness perceptions in Table 3, this was not the case in the present study. The insignificant finding of H3 may be a result of the type of product used in the present study—a breakfast cereal—which is rather unhealthy, and taste does not differ significantly between brands. As such, the chosen product may not have allowed for noteworthy manipulation of taste expectations. However, current research investigating the influence of health claims in food advertising is largely contradictory, and therefore the

insignificant findings of the present experiment are not so unusual for this realm of exploration.

The manipulation check of the current study which sought to ascertain whether participants could distinguish between the different label options was found to be significant. This suggests that consumers do have some understanding of what health claims and health and taste claims are and are to some extent able to discern between them. However, more research is needed investigating the extent to which consumers understand and interpret these claims, with which types of foods consumers are able to recognize these claims, and what that means for public policies. The author suggests an increase in public policies and initiatives regarding consumer awareness and understanding of health claims, particularly as they pertain to more ‘unhealthy’ products. Without regulation of health claims or initiatives such as the European GDA label which aids consumers in distinguishing healthy and unhealthy foods (IDG, 2006), consumers may be misled and wrongly influenced by health and taste claims into purchasing a product that they believe is healthy even when it may not be. As this has ethical implications, the author recommends further research into the area of consumer understanding of health claims to determine which policies and legislation are necessary to regulate health claims so that negative impacts of said claims are mitigated.

Regarding H4—the hypothesis related to RQ2 of this thesis exploring to what extent food products with a combined health and taste claim prompt higher purchasing intentions than food products with only a health claim—the significant results of the survey support the findings of the conducted literature review. According to Stancu et al. (2021), consumers may be influenced to buy a product including a health claim due to inferences made about the product as a result of a health claim, which leads them to believe that the product may contain more expected benefits as compared to a product without a health claim. Moreover, taste is the main driver of food decisions for consumers—even more impactful than healthfulness perceptions—and therefore will likely also have a positive impact on purchasing decisions (Turnwald & Crum 2019). As seen in the testing of H4, consumer perceptions about the healthfulness of a product and



consumer perceptions about the tastiness of a product positively impact purchasing intentions. Based on similar findings from prior studies, it can be supposed that products including health and taste claims will spur increased purchasing decisions. This may be explained partially by the unhealthy-tasty intuition, whereby it has been found that inclusion of health claims and taste claims in food products makes those products more desirable for consumers, therefore boosting their purchasing intentions (Forwood, Walker, Hollands, & Marteau 2013), as compared to products with health claims only. As such, the author recommends that food manufacturers include health *and* taste labeling in their products to increase consumer purchasing intentions as much as possible.

#### **4.5.6 Limitations and Further Prospects**

The most notable limitation of this study is the small sample size of only 99 viable survey completions in an experiment with three different, randomized groups. For instance, the number of valid survey completions in the no label group is significantly less than the health claim and health and taste claim groups ( $n = 25$  for the no label group as compared to  $n = 35$  for the health label group and  $n = 39$  for the health and taste label group, respectively). Furthermore, the age range of participants only reached up to 53 years of age, with the average age being 22. This is likely due to the fact that the survey link was shared primarily through the author's social media pages, reaching a mainly younger audience. For more unbiased sampling, the questionnaire should have been distributed through a wider variety of social platforms as to reach broader demographics. In the current case, representativity of the sample cannot be claimed.

Another notable limitation of the current study is the type of health claim used in the presented stimuli. The chosen health claim, "High in Fiber" can be considered to be a benefit-incurring claim as it is positively framed and alludes to the possible benefits related with the consumption of the food product (Pichierri et al., 2020). As discussed in detail in Chapter 2.3, benefit-incurring health claims may be less effective than risk-reducing claims as Prospect Theory

posits that consumers are more sensitive to potential losses than possible gains (Lähteenmäki, 2013; Pichierri et al., 2021). Therefore, using a risk-reducing claim such as “Lowers Risk of Heart Disease” may have been more effective in altering consumers healthfulness perceptions than the chosen benefit-incurring claim “High in Fiber”.

One positive characteristic of this thesis is the success of the manipulation check. The significant value of the Chi-square test as discussed in Chapter 4.5.3 illustrates that participants were able to identify which label—or lack thereof—they were exposed to, meaning that participants have some understanding of health claims or health and taste claims. However, as H1, H2, and H3 were found to be insignificant, the extent to which consumers understand these claims and are influenced by them is still not conclusive. Therefore, the author strongly recommends further research into the influence of health claims and health and taste claims on consumer healthfulness and tastiness perceptions, as well as their impact on consumer purchasing intentions. The author also recommends survey distribution to a wider variety of channels as to overcome the limitation of small sample size and underrepresentation of different age groups and background.

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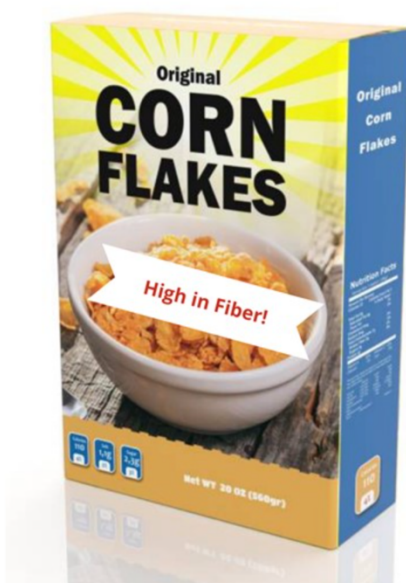
## 6 Appendices

### 6.1 Stimuli

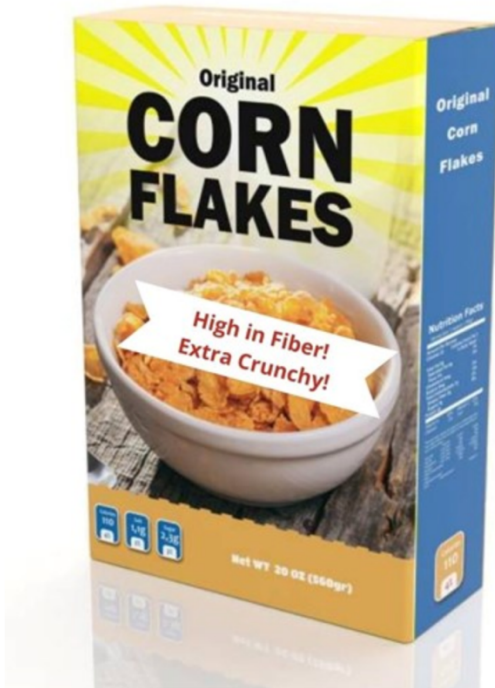
#### Cornflakes – No Label



#### Cornflakes – Health Label



## Cornflakes – Health and Taste Label



### 6.2 Questionnaire

Dear Participant,

I am currently investigating different packages of cereals for my Bachelor Thesis at Modul University Vienna. I would highly appreciate it if you could spare a 2-3 minutes to answer the following questionnaire.

I guarantee that your answers will remain confidential and will exclusively be used for academic purposes.

Thank you for your input and participation.

Clicking on the "Start" Button below would indicate that you have read the information above and that you voluntarily agree to participate.

1. Do you like cornflakes?

- Yes
- No

Presentation of one of the stimuli as shown in Chapter 6.1



**2. Did the product include a label?**

- Yes, a health label.
- Yes, a health and taste label.
- No label was included.

How healthy do you think this product is?

Not at all healthy						Very healthy
1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How tasty do you think this product is?

Not at all tasty						Very tasty
1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How much do you think you would enjoy eating this product?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Not likely                      Very Likely

How likely would you be to buy this product?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

**3. Please indicate how familiar you are with the presented brand**

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	had heard of the brand before
did not recognize	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	recognized
unfamiliar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	familiar

Age

**4. Highest completed education**

**5. Gender**

**Thank you for completing this questionnaire!**

We would like to thank you very much for helping us.

Your answers were transmitted, you may close the browser window or tab now.