



# Is nudging with either positive or negative health claims more effective?

A study on health claims and tobacco legislation.

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## Preface

Before you lies the thesis: “Is nudging with either positive or negative health claims more effective?”, it was written to complete the graduation requirements of the Master Food Safety with thesis track Food law and Regulatory affairs at Wageningen University & Research. This process of writing my thesis took place between the end of April till the end of September 2018.

When I had to choose a topic for my thesis, I knew quickly that I wanted to write a thesis about health claims. Since I started my master I consistently notice all sorts of health claims on food products. I also wondered why so many people still buy cigarettes packages even though these show negative health claims. Both these interests led me to this thesis subject.

When I started writing my thesis I struggled a lot with finding the right literature, but by putting a lot of time and hard work into it I managed to finish it in time. It was a good learning experience and I would like to thank my supervisor, Kai Purnhagen, for the guidance and support during this process. I would also like to thank Hester Suttorp, May Jansen and Jop Rang for their review and help throughout the process of writing my thesis.

I hope you enjoy your reading.

Lisa van der Meer

Wageningen, September 28, 2018.

## Abstract

**Aim:** Trying to convince consumers to make a healthy choice can be achieved using positive as well as negative health claims. The goal of this thesis is to define whether nudging with either positive or with negative health claims is more effective. To assess this effectiveness, positive health claims on food products and negative health claims on tobacco products are compared.

**Method:** This thesis is a literature review and a doctrinal review. The literature review addresses the definition of the concept of nudging, why information claims can be seen as a form of nudging and how positive and negative information claims can be used as nudges. Secondly it analyzes the results of different marketing and consumer studies about positive health claims on food products and negative health claims on tobacco products. The doctrinal review addresses the development and the rules and requirements of Regulation (EC) No 1924/2006 on nutrition and health claims made on food and of the Tobacco Advertising Directive (2003/33/EC). It also compares both of these types of legislation.

**Conclusion:** This thesis shows that positive claims on food products and negative claims on tobacco products guide consumers in making a healthy choice, influence their health perception and purchasing behavior. According to these results it can be concluded that both types of health claims are effective nudges. However, it is difficult to be unambiguous about whether it is more effective to nudge with positive health claims on food products or with negative health claims on tobacco products.

**Discussion:** Since different marketing and consumer studies used vastly different methods, it is difficult to be definitive about if nudging with either positive or negative health claims is more effective. This was not anticipated on since both claims were expected to have the same goal, which is informing consumers about the healthiness of these two different products. One of the explanations for the fact that different studies are not comparable is that positive health claims on food products are voluntary and negative health claims on tobacco products are mandatory.

**Keywords:** Positive health claims, negative health claims, tobacco products, food products, nudging, effectiveness.

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## *1. Introduction*

### *1.1 Problem statement*

Trying to convince consumers to make a healthy choice can be achieved using positive as well as negative health claims. In order to guide consumers to make healthy food-related decisions, health claims were introduced in 2007 by the European Parliament and Council (Regulation (EC) No 1924/2006). A health claim 'is any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health' (Regulation (EC) No 1924/2006). Informing consumers about the healthiness of a product can be seen as a form of nudging. A nudge is 'any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any option or significantly changing their economic incentives' (Thaler & Sunstein, 2008a). In other words, nudging means creating a certain environment where freedom of choice is preserved, but where people are steered towards a certain choice.

Next to health claims that suggests a positive relation between food products and health, negative health claims on tobacco products are also used within the European Union (EU). In 1989 the EU first started with taking regulatory steps against the negative health effects of tobacco. To guide consumers in making healthier decisions, health warnings, which must cover 65% of the front and back of cigarette- and roll-your-own tobacco packages, became compulsory within the EU when the first Tobacco Products Directive (2001/37/EC) entered into force in April 2001.

Both of these types of products display information on their packages that try to steer consumers in a healthy decision-making direction, in the form of an information claim. The health claims that are used on food products, can be indicated as a form of nudging, when it allows people to make healthier food choices (Purnhagen, Herpen, & Kleef, 2016). The 'unhealthy' claims on tobacco products are nudges as well, when those claims convince consumers to stop smoking, but do not restrict this choice (Alemanno, 2012). The health claims on food products are positive claims and the 'unhealthy' claims are negative claims. Thus, both these claims aim to convince consumers to make a healthy choice, but with a different approach. Since these are different methods used to stimulate people in making a healthy choice, it is therefore interesting to discover why these two different types of nudges are being used on these certain types of products and which claim is a more effective nudge.

As has been stated before, the EU sets the law for health claims on food products and for 'unhealthy' claims on tobacco products. Do both types of law have specific reasons, apart from health, for nudging consumers in this specific way? Does market and consumer research show that by nudging consumers with positive and negative health claims, health outcomes of consumers are improved in the best possible way? The aim of this thesis is to define whether nudging with either positive or with negative health claims is more effective.

## 1.2 Research question

This aim leads to the following main research question:

*Is nudging with either positive health claims on food products or with negative health claims on tobacco products more effective?*

## 1.3 Outline of the thesis

To provide an answer to this question, this thesis will be outlined in the following chapters:

### 3. Nudging

#### 3.1 Health-related nudging

#### 3.2 Type of nudging: information claims

#### 3.3 Positive and negative information claims

### 4. What is stated in the EU law about positive and negative health claims on products?

#### 4.1 Positive health claims on food products (Regulation (EC) No 1924/2006 on nutrition and health claims made on food)

#### 4.2 Negative health claims on tobacco products (Tobacco Products Directive (2014/40/EU))

#### 4.3 Comparing the EU law on positive health claims on food products with negative health claims on tobacco products

### 5. What are the results of marketing and consumers studies concerning positive and negative labelling?

#### 5.1 Analyzing different marketing and consumer studies

#### 5.2 Assumptions about nudging techniques

In order to approach the research question, chapter 2 explains the method that is used to conduct this research. Chapter 3 will explain the definition of the concept ‘nudging’ that is used in this thesis. It will also explain why information claims can be seen as a form of nudging. Also, it discusses nudging with positive health claims on food products and nudging with negative health claims on tobacco products and the difference between these two types. Chapter 4 explains the development and the rules and requirements of regulation (EC) No 1924/2006 on nutrition and health claims made on food, as well as the development and the rules and requirements of the Tobacco Products Directive (2014/40/EU). It also addresses parts of these legislations that fall within the boundaries of nudging.

In chapter 5 marketing and consumer studies are analyzed to see if positive health claims on food products and negative health claims on tobacco products have the desired effect on the buying behavior of consumers. Chapter 6 and 7 are the final chapters of this thesis, which answer the main research question. Strengths and limitations of this thesis and recommendations for further research are also given.

## 2. *Method*

### 2.1 *Search method*

This thesis consists of a literature review and a doctrinal review. The literature review addresses the definition of the concept of nudging and why information claims can be seen as a form of nudging. It also addresses nudging with positive and negative information claims. Secondly it analyzes the results of different marketing and consumer studies about positive health claims on food products and negative health claims on tobacco products.

The different databases that were used to obtain relevant literature were: SCOPUS and Web of Science. Moreover, a snowball search via references of the selected articles, particularly reviews, was carried out. Before the search for information was started, the research question was divided into search concepts. Relevant and appropriate articles were found by using Boolean operators, which combine or exclude search terms in order to create a more specific search quest. The search quest that is used: (“nudging” OR “nudges”) AND (“information” OR “information claims” OR “positive information” OR “negative information” OR “labelling” OR “negative labelling” OR “positive labelling” OR “health claims” OR “health information” OR “tobacco claims” OR “food claims”).

The doctrinal review addresses the development and the rules and requirements of Regulation (EC) No 1924/2006 on nutrition and health claims made on food and of the Tobacco Advertising Directive (2003/33/EC). It also compares both of these types of legislation.

### 2.2 *Inclusion criteria*

The literature review is conducted based on articles that focus on nudging with information claims, nudging with labels on products, nudging with positive and negative health claims, nudging with positive health claims on food products and negative health claims on tobacco products. Furthermore, literature that explained the effect of nudging on people’s behaviour (Hausman, 1992) is included.

### 2.3 *Exclusion criteria*

Articles and reviews that focused on nudging with information claims, nudging with labels on products, nudging with positive and negative health claims, nudging with positive health claims on food products and negative health claims on tobacco products published before 1998 were excluded, because these articles are not up to date. The subject area was limited to social sciences. Articles which were not available in English have not been used in this thesis.

## 2.4 Search strategy

Table 1: Search terms with useful results

Search term	Database	Hits	Hits after refining to solely social science	First selection	Downloaded after reading abstracts
“nudging” OR “nudges”	Scopus				
AND “information” OR “information claims” OR “positive information” OR “negative information” OR “labelling” OR “negative labelling” OR “positive labelling” OR “health claims” OR “health information” OR “tobacco claims” OR “food claims”		418	86	17	8
“nudging” OR “nudges”	Web of Science				
AND “information” OR “information claims” OR “positive information” OR “negative information” OR “labelling” OR “negative labelling” OR “positive labelling” OR “health claims” OR “health information” OR “tobacco claims” OR “food claims”		5683	327	22	10
<b>TOTAL</b>					<b>18</b>

These 18 selected articles were downloaded, and the abstracts, conclusions and discussions of these papers were read. After this, another two papers were excluded from the selection, which led to a new selection of 16 papers. These 16 articles were fully read, which lead to an exclusion of three articles and a final selection of 15 articles applicable to this research. Via snowball search in references of these 15 articles, another 26 were selected. Therefore, this thesis is based on a total of 42 articles.

### 3. *Nudging*

The aim of this thesis is to discover whether it is more effective to nudge with positive or with negative claims. To gain insight in the effectiveness of these two different types of health claims, firstly the definition of the concept ‘nudging’ that is adopted in this thesis, the boundaries of this concept and its criticism are outlined. Next to this, it explains how nudges that are health-related can be applied. Furthermore, there is a need to explain why information claims are perceived as a specific type of nudging. Finally, sub-chapter 3.3 on positive and negative health claims, discusses the influence of both of these types of claims on the health perception of consumers. It also discusses the difference between positive and negative health claims.

#### 3.1 *Health-related nudging*

As stated before the definition of a ‘nudge’, used in this thesis is ‘any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any option or significantly changing their economic incentives’ (Thaler & Sunstein, 2008a). Thus, nudging means creating an environment where freedom of choice is preserved, but where people are steered towards a certain choice. An example of a nudge is the Bulls Eye; At Amsterdam Airport small fly shape stickers were installed in the urinals, which led to a reduction of spillage by 80% (Thaler & Sunstein, 2008b). This experiment showed that the effect the nudge has on people’s behavior must not be achieved by changing people’s economic incentives or substantially constraining people’s choices, but by steering them in a certain direction and preserving their freedom of choice (Hausman, 1992).

Nudging techniques are applied ever since behavioral research has shown that individuals are not rational but advantage-seeking decision makers (Ariely, 2008). As people are not always rational decision-makers, there can be concluded that people lack stable or clear preferences and that behavior can be influenced by framing effects and default rules (Thaler & Sunstein, 2003). Therefore, nudges should be designed to increase the likelihood that the choices people make improve their own welfare (Thaler & Sunstein, 2008a). To support this statement, the dual process theory is used. According to this theory, functioning of the brain is based on two types of cognitive processes, which are interpreted as two distinct processes. System 1 processes are described as uncontrolled, automatic effortless and fast. System 2 processes as rational, reflective and conscious (Kahneman, 2003). Nudges always influence system 1, but only sometimes affect system 2 because nudges mainly try to influence automatic processes. Expanded argumentation concerning whether automatic or rational processes are influenced by nudges can be found in sub-chapter 3.2.

Since Thaler & Sunstein in 2008 introduced the term nudging to the general public, this idea of nudging has influenced the interest and action of governments worldwide (Hansen & Jespersen, 2013). On the other hand, there are certain limits for applying nudges. Thaler & Sunstein (2008) state that only libertarian paternalistic behavioral interventions are allowed. Libertarian means that liberty is preserved,

and a policy is paternalistic when it tries to influence a choice which makes decisionmakers better off, judged by themselves. Many articles have been published trying to explain the limit of legitimate nudges. An example is ‘The critical and problematic role of bounded rationality in nudging’ by Tor (2016), stating that when only libertarian paternalistic behavioral interventions are allowed, this will limit the universe of legitimate nudges. When only libertarian paternalistic behavioral interventions are allowed, this will for example exclude behavioral interventions that aim to promote social welfare or policies that try to make people better off according to the judgment of the policy makers (Tor, 2016).

Next to the growing interest concerning the boundaries of nudges, this new method of influencing people’s behavior also led to criticism. A persistent and central point in normative and political criticism has been the claim that nudging works by “manipulating people’s choices” (Vallgård, 2012). Another remark made, declares that nudging would impair our autonomy and our ability to make moral choices for ourselves (Furedi, 2011). Thaler & Sunstein (2008) responded to this criticism by stating that people’s choices are always influenced by the context of choice. Furthermore, they state that nudges do not limit the original set of choices, but citizens remain free to choose otherwise.

Thus, the idea behind nudging is that people are steered towards a certain choice although their freedom of choice is preserved. Nudges should also be designed to increase the likelihood that the choices people make, improve their own welfare. The idea that the use of nudges improves the welfare of people has sparked a discussion concerning the boundaries and limitations of the usage of nudges. It also led to criticism concerning the possible manipulative nature of nudges. Every theory or concept has supporters and opponents; however, the aim of this thesis is not to assess these different opinions and further discuss this theory. This thesis focusses on the effectiveness of nudging with positive and negative health claims. Therefore, the next step is to discuss nudges that are health-related.

The European public is aware of the fact that by making certain kinds of lifestyle choices, they can expect to have longer and healthier lives (Sugden, 2017). Information on how a healthy lifestyle can be obtained, is easily accessible to everyone. For example, by browsing the internet, guidelines on healthy diets and alcohol intake can be found effortlessly. Nevertheless, many people do not adhere to these guidelines. This is where nudging becomes pertinent. The idea is that choice architectures are designed, by altering the natural and physical environment or by changing the way options are presented in order to make it more likely that a healthy choice becomes the default or natural preference (House of Lords Science and Technology Select Committee, 2011). Different examples of health-related nudges are: placing more nutritious foods in a more prominent position (Reicks, Redden, Mann, Mykerezzi, & Vickers, 2012) or making smaller portion sizes available for consumers to choose (Piernas & Popkin, 2011).

Health claims are also health-related nudges, but they are different from the examples mentioned here. This is because they nudge consumers by providing them with information about the healthiness of a product. The next chapter explains why information claims are a specific, distinctive type of nudging.

### 3.2 *Type of nudging: information claims*

To be able to address the effectiveness of nudging with positive and negative health claims, it should first be explained why information claims are perceived as a specific type of nudging.

Providing people with information can have different effects on consumers. According to Jakobsen & Serritzlew (2016), when people are provided with information it pushes them towards making considered choices for society and themselves. To support this, there are different field experiments that have shown that providing people with information can significantly affect consumer behavior and knowledge (Calzolari & Nardotto, 2011; Hastings, Weelden, & Weinstein, 2007). By influencing their knowledge, consumers become more aware of the choices that they are making. This is because the choice someone makes is accompanied by a deliberation process and this deliberation influences future choices (Jakobsen & Serritzlew, 2016). However, according to Ben-Shahar & Schneider (2010) a regulatory technique called ‘mandated disclosure’ which aspires to improve decisions that people are making, by providing them with more information, is failing. They argue that people vary in their ability to use the information that is provided to them and people are heterogeneous in their preferences and concerns. Thus, it cannot be assumed that when people are provided with information this always leads to affirmative thoughtful decisions which influence their future choices (Ben-Shahar & Schneider, 2010).

By providing people with information, people can make choices with or without a conscious-deliberate process. This could mean that information can either influence system 1 or 2, according to the dual process theory (Kahneman, 2003). Nudges mainly try to influence system 1, which are automatic processes as people are not always rational decision makers. However, according to Hansen & Jespersen (2013) the point of the dual process theory is that behavior can be a result from both systems. They state that it is crucial to notice that this theory does not imply that a given behavior is maintained or results exclusively in one or the other mode of thinking. Automatic processes operate on their own, but reflective processes operate in a context and on premises provided by automatic processes. Since behavior does not exclusively result from either system 1 or system 2, the same as with ‘providing people with information’, information in the form of a health claim can be perceived as a nudge.

To be more specific, a distinction is made between *type 1* and *type 2* nudges. Type 1 nudges are aimed at influencing behavior maintained by automatic thinking, without involving reflective thinking. Type 2 nudges however are aimed at influencing the attention and the behavior anchored in reflective thinking (i.e. choices) by influencing the automatic system. Next to the distinction between two different types of nudges, a nudge can also be *transparent* or *non-transparent*. A transparent nudge is a nudge that is provided in such a way that its intention and expected behavior is reasonably transparent to the agent being nudged. A non-transparent nudge is a nudge that works in a way that the one being nudged is unable to reconstruct either the intention or the means by which behavioral change is pursued (Hansen & Jespersen, 2013).

Following these four different types of nudges, a matrix is developed to classify different kinds of nudges graphically (see figure 1). Because of their multi-layered structure of mechanisms, some nudges may fall into the grey zone or are qualified for being several types, which allows them to exist in multiple categories.

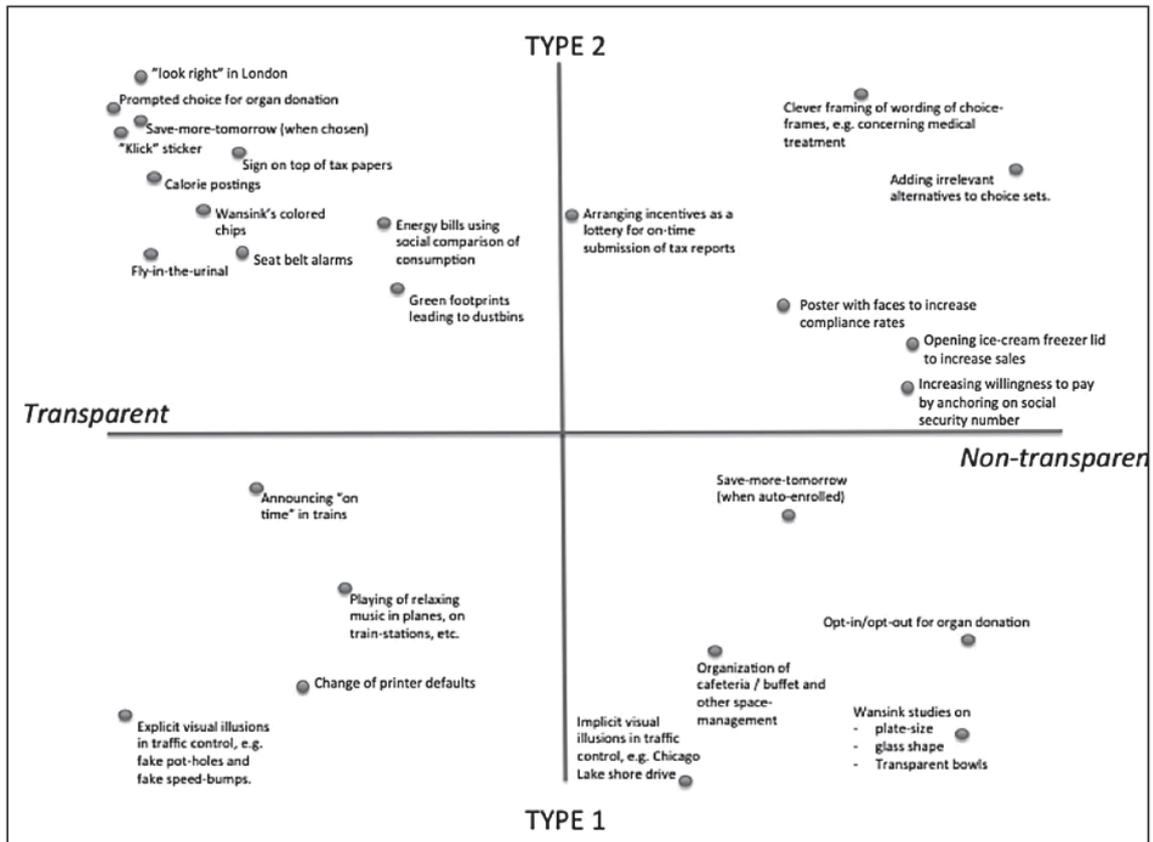


Figure 1: Matrix delineating four different types of nudges (Hansen & Jespersen, 2013)

Since this thesis evaluates a specific type of information, namely information claims on two different kinds of products, the next step is to focus on the packaging of products. On the packaging of products there are different elements of information that can be distinguished. Examples are: brand names, health-related claims, endorsements and seals, nutritional information and brands imagery (logo, symbols, slogans and design elements). All these elements are tools of communication that help to draw someone's attention to a product. Looking at the matrix presented above (figure 1), information claims are transparent type 2 nudges. This is because information claims that are visible on a package, are used as a communication tool to draw the attention to a product and thereby influence the choice of a consumer for a product (Chandon, 2013). Although depending on how prominent the respective claim is on a product and if it prompts consumers to make a choice, for it to count as a nudge (Scrinis & Parker, 2016).

Hence, information claims can be perceived as a specific type of nudging, because when people are provided with information they can either make a conscious or unconscious choice and according to Hansen & Jespersen (2013) nudges can target both of these processes. To support the prior statement that information claims can be perceived as a specific type of nudging, according to Sunstein (2014) there are ten important nudges, with one of these ten nudges being *warnings, graphics, or otherwise (as for cigarettes)*. Information claims are assumed to fall in the category of warnings or otherwise according to Sunstein (2014) and can therefore be seen as a nudge.

### 3.3 *Positive and negative information claims*

After confirming that information claims are a specific type of nudging, the next step is to discover how positive health claims on food products and negative health claims on tobacco products are used and what their influence is on the health perception of consumers. It also discusses why positive health claims on food products and negative health claims on tobacco products are information claims nudges. Furthermore, to be able to discuss the effectiveness of these two types of information claims nudges, the difference between these two different types is also discussed.

#### 3.3.1 *Positive health claims on food products*

Positive health claims are used on food products to guide consumers in making a healthy food choice. According to many public health experts, food labelling is part of a set of measures that are evaluated necessary to tackle the public health problems of obesity and other diet-related chronic diseases (Hawkes, Jewell, & Allen, 2013). Labelling is needed since consumers tend to infer healthiness of a product from symbolic information on packages, health claims and marketing communication campaigns (Abrams, Evans, & Duff, 2015; Evans, de Challemaison, & Cox, 2010). This shows that positive health claims can have a significant influence on the health perception of consumers.

However, a difficulty with health claims is that when consumers are confronted with them they make inferences based on that claim, but these inferences are often biased. People make inferences about these claims because these are processed them with low levels of involvement (Purnhagen et al., 2016). In 2012 the CLYMBOL (“The role of health-related CLaims and sYMBOLs in consumer behavior”) started a study on the effect of health claims on consumer behavior. The researchers of the CLYMBOL project analyzed subjective causal models across 25 different health and nutrition claims. According to this analysis, the familiarity with the nutrient/substance and the personal relevance are the primary influence factors of the consumers acceptance of the claims. This means that it is very likely that the same claims are perceived differently by consumers. As a result, a health claim could “upgrade” a personally relevant or familiar substance (Hieke et al., 2016).

Since inferences of consumers about positive health claims on food products are often biased, a concern is that consumers overinterpret nutrition or health claims by ascribing inappropriate health benefits to them. They may attribute excessive health benefits to consuming a food with a claim, which is called ‘the magic bullet effect’ (Roe, Levy, Brenda, & Derby, 1999). Another bias that can occur is called a ‘health halo’. This occurs when the health claim has a strong effect on experienced and expected taste and health perception, above what is described on the product itself (Chandon & Wansink, 2012). An effect of a ‘health halo’ is that it makes healthy food products appear healthier than the products scientifically are, and unhealthy foods appear less healthy than these types of products are.

Thus, positive health claims on food products influence the health perception of consumers, but consumers can do this with low levels of involvement which can lead to misinterpretations of these

claims. However, it still depends on how prominent a claim is whether or not it influences a consumer's choice.

### *3.3.2 Nudging with positive health claims on food products*

According to section 3.2, information claims are a type of nudging. To be more specific, this type falls in the category of type 2 transparent nudges (figure 1). To support this statement, the question whether information claims can qualify as nudges is asked again, but now specifically for positive health claims on food products.

Type 2 nudges are nudges that are aimed at influencing both the attention and behavior anchored in reflective thinking (i.e. choices) by influencing the automatic system, system 1. Transparent means reasonably transparent to the agent that is being nudged. Comparing this with the findings on positive health claims, consumers derive the healthiness of a food product from its health claim. Thus, a positive health claim influences the choice for a food product. Furthermore, health claims are also transparent, since its' intention is also visible to consumers, which influences their opinion on the healthiness of a product. Therefore, this supports the statement that also positive information claims can also be seen as a form of nudging.

Another question that arises when analyzing the findings on the effects of positive health claims on the perception of consumers, is that if these perceptions that overestimate the healthiness of a food product also lead to healthier food choices? According to the findings in the current research, biases can occur when consumers are confronted with positive health claims, which mostly lead to perceptions that overestimate the healthiness of a food product. An expectation is that this also leads to healthier choices, even though the vision of the consumer is potentially biased. To be able to support this expectation, different marketing and consumers studies that research the influence of positive health claims on consumers shopping behavior, need to be analyzed. These findings of this analysis are discussed in chapter 5.

### *3.3.3 Negative health claims on tobacco products*

As positive health claims have their respective effects on consumers, negative health claims also do, and these will be elaborated upon hereafter. During the seventies, the first generation of anti-tobacco measures was implemented. Governments started with taxing tobacco products, which led to reduced cigarette smoking (Chaloupka, Yurekli, & Fong, 2012). Next to fiscal measures, to protect bystanders and youth, laws were also passed to prohibit smoking in public places and to mandate companies to print large messages on cigarette boxes. The latter brings us to negative health claims that are placed on tobacco products today.

The tobacco industry and the tobacco control advocates agreed that cigarette packages serve as a marketing tool and a way of communicating with the public (Hammond et al., 2007). Textual health claims have been implemented longer than pictorial claims, but evidence has shown that pictorial health

claims are a more cost-effective way of health communication, create higher visibility as well as awareness and health risks are depicted more vividly than on packages with only textual claims (Kees, Burton, Andrews, & Kozup, 2010; Vardavas, Connolly, Karamanolis, & Kafatos, 2009).

Furthermore, research has shown that prominent pictorial claims are perceived as credible and can increase the health knowledge of people while it can simultaneously be a motivator to quit smoking (Hammond, 2011). Since negative pictorial health claims on tobacco products are more effective than textual claims, the focus in this thesis will only be on pictorial health claims on tobacco products.

Thus, it can be assumed that attention is paid to these pictorial negative health claims on tobacco products and that it can influence people's perception about tobacco. However, within the current literature it is not known if these negative health claims lead to inferences that are biased, as with positive health claims on food products.

#### *3.3.4 Nudging with negative health claims on tobacco products*

Negative health claims on tobacco products can also be perceived as type 2 transparent nudges, which is similar to the perception of positive health claims on food products. Negative health claims on tobacco products are aimed at influencing the attention of a consumer and those types of claims are also transparent, the same as with positive health claims on food products. Next to this, according to Alemanno (2012) several tobacco control policies qualify as nudges. These are policies which solely have the aim only to skew individual decisions, but where freedom of choice remains. As an example, pictorial negative health warnings on tobacco products are given. Therefore, negative health claims can also qualify as nudges.

The same question as with positive health claims arises, if these pictorial health claims, which influence people's perception about the healthiness of tobacco products, also influence their choice for purchasing these products? Since it influences their perception, there can be expected that it also influences consumers choice for tobacco products. To be able to support this expectation, different marketing and consumers studies that research the influence of negative health claims on consumers shopping behavior, need to be analyzed. This is discussed in chapter 5.

### 3.3.5 *Differences and agreements between nudging with positive and with negative health claims*

After discussing both the influence of positive and negative health claims on the perception of consumers, this section highlights the differences and agreements amongst those two types of nudges as identified in this thesis.

Both types of claims are type 2 transparent nudges, both nudges have the same goal, which is influencing the health of consumers, but the same goal is tackled in a different way.

Positive health claims try to convince consumers to purchase a product, whereas negative health claims have the opposite goal. Since both health claims are claims that concern people's health it seems to make sense that these claims are presented in a positive and negative way. Consuming healthy food influences someone's health positively and withholding people from consuming tobacco products, also has an influence on someone's health. Furthermore, according to the found literature on positive health claims on food products, consumers interpret positive health claims with low levels of involvement which can lead to misinterpretations of these claims. For negative health claims however, it is not known if consumers misinterpret these claims.

Hence, both types of claims have a positive effect on the health perception of consumers. Consumers derive the healthiness of a food product from its health claim, but with low levels of involvement which can lead to biased inferences about the product. The negative health claims on tobacco products can influence the health knowledge of consumers and in that sense the health perception about tobacco.

To be able to elaborate on the effectiveness of these two different types of nudges, marketing and consumer studies are analyzed in chapter 5 to evaluate the influence of both these health perceptions on the purchasing behavior of consumers. However, firstly the development, the rules and principles of the law on positive and negative health claims are discussed. This doctrinal review is carried out to explain the different approaches in informing consumers about the healthiness of both of these types of products. By looking into the ideas behind these two different approaches and the effect of these health claims on the purchasing behavior of consumers in chapter 5, this possibly leads to an answer to the main research question '*Is nudging with either positive health claims on food products or with negative health claims on tobacco products more effective?*'.

#### 4. What is stated in the EU law about positive and negative claims on products?

Nudging with health information claims on food products and on tobacco products influences the health perception of consumers. The health claims on both products have a different approach in informing consumers about the healthiness. This raises the question, what are the underlying ideas of these approaches? This chapter looks into the development and the rules and principles for health claims on food products that are stated in Regulation (EC) No 1924/2006 on nutrition and health claims made on food and into the rules and principles for health claims on tobacco that are stated in the Tobacco Products Directive (2014/40/EU). Next to rules and principles, it also explains why both of these types of claims are used on food products and tobacco products and which parts of the legislations fall within the boundaries of nudging.

##### *4.1 Positive health claims on food products*

###### *4.1.1 Development of Regulation (EC) No 1924/2006 on nutrition and health claims made on food*

Since food production has become more complex, the interest of consumers in the information appearing on food labels has been increasing. Consumers have become more interested in the relation between their diet and health and more generally the composition of foodstuffs that they are selecting. For these reasons the information that appears on labels about foodstuffs has to be meaningful and accurate. With the growing interest of consumers in nutrition, the food industry had an opportunity to use claims as a marketing tool, by highlighting the nutritional value or health effects of food products (Directorate General Health and Consumer Protection, 2001). However, specific provision at European level was absent, and therefore some Member States had adopted legislation and other measures to regulate the use of these claims by marketeers. This led to numerous contradictions and different approaches both regarding the conditions justifying the use of these claims and definitions of the terms that were used. These contradictions could lead to obstacles to the free movement of foodstuffs, proper functioning of the internal market and also be a barrier for guaranteeing a high level of consumer and public health protection. As a result, in the eyes of the Directorate General, harmonization of rules on claims was needed at European level (Directorate General Health and Consumer Protection, 2001). Therefore, in 2006 the European Parliament and Council introduced health claims on food products. This regulation was designed to ensure that claims protect consumers against misleading food information and in that sense guaranteeing public health protection, that they are to be understood by the average consumer and that they provide reliable and useful information (European Parliament & Council, 2007).

#### *4.1.2 Rules and requirements of regulation (EC) No 1924/2006 on nutrition and health claims made on food*

According to Regulation (EC) No 1924/2006 on nutrition and health claims made on food, the definition of a ‘claim’ is: “any message or representation, which is not mandatory under EU or national legislation, including pictorial, graphic or symbolic representation, in any form, which states, suggests or implies that a food has particular characteristics”. Thus, a claim is not mandatory, and it can be represented on a food product, either symbolic, graphic or pictorial.

A claim does not only stand for a health claim, but a distinction is made between a health claim and a nutrition claim. A nutrition claim state what a product is and a health claim state what it does. Since the focus of this thesis is on health claims, nutrition claims are not further discussed. Health claims however are the focus of this thesis and they also have a specific definition. A ‘health claim’ is:” any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health”. This means that there has to be a relationship between the product and health of a consumer. Besides the fact that a health claim has to suggest, state or imply a relationship between the product and the health of a consumer, there are more requirements that a health claim must meet, according to Article 3 (general principles). Health claims may be used in advertising, presentation and labelling of food placed on the market, but only if they shall not: (a) be false, ambiguous or misleading; (b) give rise to doubt about the safety and/or the nutritional adequacy of other foods; (c) encourage or condone excess consumption of a food; (d) state, suggest or imply that a balanced and varied diet cannot provide appropriate quantities of nutrients in general; (e) refer to changes in bodily functions which could give rise to or exploit fear in the consumer, either textually or through pictorial, graphic or symbolic representations. An example of a health claim that meets these requirements is ‘calcium is needed for the maintenance of normal teeth’.

When a food business wants to use a health claim on their product, they have to check the existing lists for available health claims and their conditions of use or otherwise apply for an authorization of a new health claim. The Nutrition, Dietic Products and Allergies (NDA) panel of the European Food Safety Authority (EFSA) carries out the scientific assessment of evidence, to discover if it is indeed correct what this new health claim is implying. Depending on the opinion of EFSA, the European Commission bases its final decision whether to reject or accept a new health claim (Hieke & Grunert, 2017).

Thus, as stated in Regulation (EC) No 1924/2006 on nutrition and health claims made on food, a health claim is not mandatory, and it has to suggest, state or imply a relationship between the product and the consumer’s health. Furthermore, there are strict requirements that a health claim must meet.

#### *4.1.3 Why are only positive health claims used on food products?*

After analyzing Regulation (EC) No 1924/2006 on nutrition and health claims made on food, it became clear what health claims are according to the law and which rules and requirements they must

meet before they can be used on a food product. Since this thesis focusses on the effectiveness of positive and negative health claims, this regulation is also analyzed to discover why only positive health claims are used on food products.

Keeping in mind that health claims are used as a marketing tool, claiming that a food product has a negative health effect when consuming it, would not positively influence the sale of a food product, which is likely to be a reason for not seeing negative health claims on products. However, with the use of personalized nutrition, which is a conceptual analog to personalized medicine (Kussmann & Laurent, 2008), consumers can be advised by companies as a service what not to eat (for health reasons) to increase the market share for other food products. Nonetheless, there is no link made between the concept of personalized nutrition and negative health claims on food products, but this could possibly become a future tool.

After analyzing this regulation, it seems that nowhere is stated specifically that health claims on food products only can be applied on products which have been shown to have a positive relation between the consumer's health and the food product. A 'health claim' means that it suggests or implies that there is a relationship between a food or its constituents and health. So, it does not state if this relation has to be positive or negative. Only provision (e) from Article 3 states that health claims cannot refer to changes in bodily functions which could give rise to or exploit fear in the consumer. This suggests that negative health claims, which would refer to a negative relation between the consumer's health and the food product, could be seen as not complying with this provision, since that could give rise to or exploit fear in the consumer. Thus, if the concept of personalized nutrition would be used in the future by placing negative health claims on food products, this provision of Article 3 should be kept in mind.

Hence, Regulation (EC) No 1924/2006 provides specific rules and principles on health claims made on food. However, it is not specifically stated that health claims that have a negative relationship between the food or its constituents and health cannot be used on food products. Only provision (e) of Article 3 could be interpreted as such.

#### *4.1.4 Nudging with positive health claims according to Regulation (EC) No 1924/2006 on nutrition and health claims made on food*

The development, rules and requirements of Regulation (EC) No 1924/2006 have been described and the question why only positive health claims are used on food products according to this regulation is answered. Since the aim of this thesis is discovering if nudging with positive or negative health claims is more effective, this regulation also needs to be analyzed to see which pieces of this legislation fall within the boundaries of nudging. By analyzing which pieces of the legislation fall within the boundaries of nudging, it supports the theory that positive information claims are a type of nudging (which is discussed in chapter 3.2).

It starts with the definition of a health claim on which this regulation is based. Suggesting or implying that a relationship exists between a food category and health. Nudging means creating a certain

environment where freedom of choice is preserved, but where people are steered towards a certain choice. By implying that there is a positive relationship between a food product and health, it shows a consumer that this product is healthier than products without a health claim and therefore a health claim steers a consumer towards choosing this product. However, the same as with nudging, freedom of choice is preserved, because a consumer can still choose to purchase another food product.

Next to the definition of a health claim, article 10(2) also falls within the boundaries of nudging. Article 10 states the specific conditions that health claims on food products have to meet. Article 10(2) provides information that has to be included in the labelling and only then health claims shall be permitted. An example is a statement indicating the importance of a varied and balanced diet and a healthy lifestyle. This is an example of providing consumers with extra information, apart from the health claims, that tries to convince consumers to buy healthy products. Thus, this could also be seen as a nudge that steers consumers towards purchasing the product with a health claim.

Both the interpretation of the definition of a health claim and article 10(2) seem to fall within the boundaries of nudging. This supports the statement that positive information claims can be seen as a form of nudging.

In summary, Regulation (EC) No 1924/2006 on nutrition and health claims made on food is designed to ensure that health claims protect consumers against misleading food information and in that sense guaranteeing public health protection. Placing a health claim on a food product is not mandatory, and it has to suggest, state or imply a relationship between the product and the consumer's health. It is not specifically stated that only positive health claims can be used on food product, however provision (e) of Article 3 could be interpreted as such. Lastly, two parts of the regulation seem to support the statement that positive information claims can be seen as a form of nudging.

## *4.2 Negative health claims on tobacco products*

As positive health claims on food have a certain legal background, negative health claims on tobacco products also do, and this will be elaborated hereafter.

There are two prominent tobacco related legislations used in the EU. The Tobacco Products Directive (2014/40/EU) and the Tobacco Advertising Directive (2003/33/EC). The Tobacco Advertising Directive (2003/33/EC) is not included in this thesis, since its subject is on advertising of tobacco products and their promotion in: (a) press and other printed publications, (b) in radio broadcasting, (c) in information society services, and (d) through tobacco related sponsorship, including the free distribution of tobacco products. And this thesis focusses on health claims made on tobacco products itself and these do not fall into one of these categories. Therefore, only the Tobacco Products Directive (2014/40/EU) is discussed here.

### *4.2.1 Development of Tobacco Products Directive (2014/40/EU)*

On the 13<sup>th</sup> of November 1989 the first Council Directive was established on the approximation of laws, regulations and administrative provisions of the Member States concerning the labelling of tobacco products (89/662/EEC). Between Member States there were differences between these laws, regulations and administrative provisions which were likely to constitute as barriers to trade. Furthermore, the health warnings on the units of all tobacco products, which concern the risks of the use of such products, was seen as a vital factor in the protection of public health. This directive was implemented with the idea that the influence of tobacco products on human health would reduce. In April 2001 the Tobacco Products Directive (2001/37/EC) was approved and applied to all Member States, since it was found that there were still substantial differences between Member states' laws, regulations and administrative provisions on the manufacture, presentation and sale of tobacco products. Reports from 2005 and 2007 identified areas in which further action was needed and therefore this directive was updated again, which lead to Tobacco Products Directive (2014/40/EU) on which this thesis is based.

Thus, the Tobacco Products Directive was at first implemented to create a clear directive on labelling and in particular health warnings on tobacco products, which could be applied in all Member States. Later this has been expanded, which led to Tobacco Products Directive (2014/40/EU).

### *4.2.2 Rules and requirements of Tobacco Products Directive (2014/40/EU)*

According to the Tobacco Products Directive (2014/40/EU), 'tobacco products' are products that can be consumed and consist, even partly, of tobacco. 'Health warnings' are warnings that concern the adverse health effects of a product on humans or other undesired consequences of its consumption, including text warnings, combined health warnings, general warnings and information messages.

The second chapter of the directive provides the rules on labelling and packaging. Article 8 states that each unit packet of a tobacco product shall carry a health warning, these health warnings should cover the entire surface that is reserved for them on a package (which is 50% of the surfaces on which they are printed), they should be irremovably printed and also they have to be written in the language of the country that is selling the packets. The message itself has to contain one of the general warnings that are provided in the directive.

Thus, the negative health warnings on tobacco products are mandatory and must meet specific requirements.

#### *4.2.3 Why are only negative health claims used on tobacco products?*

In the Regulation (EC) No 1924/2006 on nutrition and health claims made on food it is not specifically stated that negative health claims are not allowed on food products. In the Tobacco Products Directive (2014/40/EU) however it is stated in Article 13 that it is not allowed to use elements on tobacco packages that can imply that there are positive or beneficial aspects to purchasing tobacco products. Since there are no positive or beneficial aspects to consuming tobacco products, it is laid down in the law that such positive health claims are not allowed on tobacco products.

#### *4.2.4 Nudging with negative health claims according to Tobacco Products Directive (2014/40/EU)*

The same as with positive health claims on food products, this directive also needs to be analyzed to see which pieces of this legislation fall within the boundaries of nudging. By doing so it could support the theory that negative information claims are a type of nudging (which is discussed in chapter 3.2).

There are several articles in this directive that can be seen as health-related nudges; where the freedom of choice is preserved, but people are steered into a healthy direction.

Chapter two of this directive discusses labelling and packaging. Article 8 provides general provisions on health warnings, what they should contain, what the design should look like and where the warnings have to be placed on the packages. Since there are such strict rules for placing these negative health claims on tobacco products, it is made sure that they are visible for consumers. By making sure that these negative health claims are visible, consumers are steered into the healthy direction, which is not choosing tobacco products. Although consumers are still free to choose to purchase these products, their freedom of choice is preserved.

Furthermore, Articles 9, 10, 11 and 12 set the standards for health warnings and what these texts on the packages should contain. These articles can qualify as nudges, since they provide information on negative health effects by consuming tobacco products, but they do not limit the freedom of choice to purchase tobacco products. The one being nudged could in this way be compelled to re-evaluate their decision to purchase, by comparing the short-term pleasure with the long term benefits (Hammond, 2011).

Thus, the high visibility of negative health claims on tobacco products makes sure that consumers perceive these health claims and are steered into the direction of not purchasing these products.

In summary, the Tobacco Products Directive (2014/40/EU) is implemented to create a clear directive on labelling and in particular health warnings on tobacco products. Furthermore, the negative health warnings on tobacco products are mandatory and must meet specific requirements. Since there are no positive or beneficial aspects to consuming tobacco products, it is laid down in the law that such positive health claims are not allowed on tobacco products. Lastly, it is specifically stated in the directive where these negative health claims should be placed on a package and what they should contain.

#### *4.3 Comparing the Tobacco Products Directive (2014/40/EU) and Regulation (EC) No 1924/2006 on nutrition and health claims made on food*

After analyzing the development, rules and regulations and the parts of both the legislations that fall within the boundaries of nudging, the next step is to compare the found differences and similarities between these two types of legislations. By comparing these two legislations, it is highlighted what the main differences and similarities are between the health claim regulation and the tobacco directive, that concern the subject of this thesis.

The first difference between Regulation (EC) No 1924/2006 on nutrition and health claims made on food and Tobacco Products Directive (2014/40/EU) that stands out, is that one piece of legislation is a directive and the other one is a regulation. The difference between these types of legislations is that a regulation has a general application, which means that it is binding in its entirety and is directly applicable in all Member States (Article 288 of TFEU). A directive was originally designed as an additional instrument to facilitate the relationship between national laws of the different Member States and law of the EU. National authorities must create or adapt their legislation to meet these aims, which are specified by a date in every given directive (Article 288 of TFEU). Thus, the difference between a regulation and a directive is that with a regulation the law is applied the same way in every Member State and with a directive certain aims and requirements are set, but it is not applied the same as with a regulation.

Another the main differences between these two types of legislation, is the fact that positive health claims on food products are voluntary and negative health warnings on tobacco products are mandatory. Which means that it is voluntary choice for a food producer to place a health claim on their product. For a tobacco producer however, this is not the case. Every tobacco product has to have a mandatory health claim that state the negative health effects, when consuming these products.

Following the previous statement about the negative health effects, the directive on tobacco products uses Article 114 (3) of the TFEU to justify the need for this directive. In accordance with Article 114 (3) a high level of health protection should be taken as a base for legislative proposals (Craig, 2011). It should be noted that public health falls under the competences to support or coordinate actions of the Member States, which means that the EU has a supporting role and therefore the EU cannot imply the harmonization of national laws or regulations in the area of public health (“FAQ on the EU competences and the European Commission powers,” n.d.). Which explains the first mentioned difference between the two types of legislations, namely why it is a directive instead of a regulation.

The regulation on health claims however does not state ‘health’ as a justification for the need of this regulation. The focus of the justification of his regulation is on not misleading consumers about the healthiness of the food product. This difference in justifications is mentioned since both the negative and positive health claims concern the relationship between a product and the consumer’s health.

An explanation for this difference could be that the regulation on health claims falls under the General Food Law (GFL). One of the objectives of the General Food Law is “to lay down the principles on which modern food legislation should be based in the EU as well as in the Member States” (EU 178/2002, 2000). According to Article 1 of the GFL the aim of this regulation is to provide the basis for the assurance of a high level of protection of human health and consumers’ interest in relation to food. Article 14 of the GFL (Food safety requirements) states that (1) Food shall not be placed on the market if it is unsafe. (2) Food shall be deemed to be unsafe if it is considered to be (a) injurious to health. The concept of unsafe food is based on the effects that its consumption may have on the health of consumers. Which includes immediate, short term and long-term effects on human health.

Thus, even though both legislations focus on health claims that are concerned with the relationship between a product and the consumer’s health, the Regulation (EC) No 1924/2006 on nutrition and health claims made on food justifies the need for this regulation with the focus of ‘not misleading consumers’ whereas the Tobacco Products Directive (2014/40/EU) justifies it with protecting the health of consumers.

In summary, the main differences between the two types of legislation are that one is a regulation and the other one is a directive, the health warnings on tobacco products are mandatory and the health claims on food products are voluntary. Furthermore, the focus of the directive is on protecting the public health and the focus of the regulation is more on not misleading consumers.

The focus of this chapter was to look into the development and the rules and principles for health claims on food products that are stated in the Regulation (EC) No 1924/2006 on nutrition and health claims made on food and into the rules and principles for health claims on tobacco that are stated in the Tobacco Products Directive (2014/40/EU). Next to rules and principles it also explained why both of these types of claims are used on food products and tobacco products and which parts of the legislations fall within the boundaries of nudging.

The next chapter will analyze marketing and consumer studies that have researched the influence of positive and negative health claims on food and tobacco on the purchasing behavior of consumers. Next to that it will look into the expectations about nudging with positive and negative health claims that are stated in sub-chapters 3.3.2 and 3.3.4.

## 5. What are the results of marketing and consumers studies concerning positive and negative labelling?

### *5.1 Analyzing different marketing and consumer studies*

In this chapter the results of different marketing and consumer studies are analyzed to see if positive health claims on food products and negative health claims on tobacco products have the desired effect on the buying behavior of consumers. Both claims try to influence the purchasing behavior of consumers and ultimately the health of the consumer, but in a different way. Positive claims try to convince consumers to purchase a food product and negative health claims try to withhold consumers from buying tobacco. First, results of marketing and consumer studies that researched the effects of positive health claims on the purchasing behavior of consumers are analyzed. Secondly, the effects of negative health claims on tobacco products on the buying behavior of consumers is discussed. At last, after the results of these marketing and consumer studies are discussed, assumptions are made about the nudging techniques that are used.

#### *5.1.1 Positive health claims on food products*

As discussed before, consumers derive the health of a food product from a health claim, but they do this with low levels of involvement which can lead to misinterpretations of these claims. Thus, health claims on food products can be misinterpreted by consumers, but what kind of effect do these positive health claims have on the purchasing behavior of consumers?

Food choice and consumption are complex cognitive processes which are often emotionally driven and layered in multiple contexts, such as country history, culture, individual preferences, socio-demographics and also situational factors (time pressure, appetite or mood) (Hieke et al., 2016). However, the way that food is marketed is commonly identified as one of the primary reasons for the global obesity epidemic (Kessler, 2010). The information that is displayed on the front of packages is controlled by marketers. This information includes the brand's imagery (logo, symbols, slogans and design elements), brand names, benefit claims, endorsements and seals, nutritional information etc. The design of the package, color, shape and materials that are used are also communication tools. One of the biggest advantages of marketing with packages, is that it reaches people at the time of purchase and consumption (Chandon, 2013). Focusing on only the claims that are made on food products, it has been estimated that within Europe approximately 26% of pre-packaged foods carry a health or nutrition claim (Hieke et al., 2016). Hence, all these elements on packages are controlled by marketers and have an influence on the purchase and consumption behavior of consumers, but approximately 26% of the pre-packaged foods in Europe carry a health claim.

When health and nutrition claims are used responsibly they may help consumers to identify healthy food products. However, as stated in sub-chapter 3.3.1 they also have a potential to mislead consumers. One of these examples is the phenomenon 'health halo', which means overestimating the

healthiness of a food product, making the food appear healthier than it is. Health claims can influence this perception of consumers and eventually the purchasing behavior of consumers. A health halo influences consumption of consumers because people feel that they can eat more of a healthy food than of an unhealthy food. Another explanation is that people anticipate that they feel less guilty if they consume food that they perceive as healthy (Chandon & Wansink, 2007). Thus, a health halo influences a consumer's perception about a food, which can then influence the purchase behavior of a consumer.

A large variety of methods have been used to study the effects of health claims on consumer purchase behavior. An example of an earlier research, before health claims were introduced by the European Parliament and Council in 2007, looked at the effects of health claims on dietary choices, before and after a claim was placed on a product. They examined population sales data of breakfast oats, before and after a claim was placed on the product. The researchers found that the sales increased after the claim was placed on the package of these breakfast oats (Paul, Ink, & Geiger, 1999). However, a problem with these natural experiments is that they lack control of other factors that drive the sales increase, even though they have substantial external validity. This makes it difficult to discover what the individual effect of these health claims is on the purchase behavior of consumers.

In contrast with these type of natural experiments, experimental studies can be controlled and allow for more precise manipulation and are easier to replicate. For example, a discrete choice experiment which takes place in a laboratory setting, allows researchers to manipulate different attributes of a product and then measure what their individual effect is on the choice of the participant. It is assumed in conjoint analyses that participants make tradeoffs between different attributes they value and through that the utility of each attribute can be estimated. According to Kaur, Scarborough & Rayner (2017) such types of studies, that researched the effects of health-related claims on dietary choices had not been systematically reviewed. Therefore, they conducted such a systematic review.

The results from their review suggest that in a discrete choice experiment, without real purchasing of foods, products that carry a health-related claim are 75% more likely to be chosen than a product that is identical, without a health-related claim. For different categories of the food, the effect varied: the effects were larger for foods with a health-related claim that were categorized as 'pulses, beans, eggs, fish, meat and other proteins' or 'fruits and vegetables' than for 'foods with a high fat and/or sugar content' or 'other food categories'. Overall, the results that were derived from studies that used continuous outcomes (such as ratings, sales, amount consumed etc.) demonstrated much more conservative results than those that were estimated by conjoint analyses. The averages of such studies with continuous outcomes estimated that health-related claims led to just an 8.9% increase in purchases of food products.

One study that stood out was a choice experiment conducted by Mohebalian, Cernusca, & Aguilar (2012). They examined health claims on a fruit juice product and found that consumers chose the product, depending on how health conscious the consumer was and whether they already consumed the product. Health-conscious consumers who did not already consume the product had much higher odds of choosing the product when a health claim was present than less health-conscious consumers.

In summary, different types of studies have been carried out, such as natural experiments, discrete choice experiments and studies that used continuous outcomes. Even though these different studies showed different results, every study concluded that food products with positive health claims led to an increase in purchase of these food products. Furthermore, a study that examined health claims on fruit juice concluded that positive health claims influence the health perception of health-conscious consumers, which led to a much higher odds of choosing that product.

### *5.1.2 Negative health claims on tobacco products*

The same as with health claims on food products, negative health claims or pictorial claims on tobacco products, also influence the health perception of consumers. Research has shown that pictorial health claims are perceived as credible and can also increase the health knowledge of consumers and also their motivation to quit (Hammond, 2011). However, do these pictorial health claims also influence the purchasing behavior of tobacco consumers?

A popular concept which is aimed at decreasing smoking is called ‘de-normalization’, which is defined as ” to change the broad social norms around using tobacco – to push tobacco use out of the charmed circle of normal desirable practice to being an abnormal practice” (Hammond, Fong, Zanna, Thrasher, & Borland, 2006). In other words, stigmatizing smokers and de-normalizing the consumption of tobacco (Kim & Shanahan, 2003).

This concept of ‘de-normalizing’ is applied in many different ways, by banning smoking in public places, creating specific smoking places but also by putting negative pictorial health claims on tobacco packages. The goal of all these measures is to shift social norms away from the acceptance of smoking in everyday life. The concept of de-normalizing uses a lot of measures, which make it difficult to prove an individual effect of one of these measures. Since the focus of this thesis is on negative pictorial health claims on tobacco products, it is challenging to prove its individual effect on consumers.

TNS Opinion & Social conducted a survey at the request of Directorate General Health and Consumers of the EU, this survey measured the EU citizens’ behavior and attitudes towards tobacco. According to this survey almost a third (29%) of the EU citizens currently smoke either cigarettes, a pipe or cigars (TNS Opinion&Social, 2010). In the autumn of 2006 the same questionnaire was held and at that time 32% of the EU citizens claimed that they smoked. Thus, in four years the amount of people that smoked in the EU declined by 3%. Ex-smokers were asked what their primary motivator was to quit smoking and they stated that personal health was their main motivator. But if this motivation was influenced by pictorial health claim is not clear.

Since it is unclear if negative pictorial health claims influence ex-smokers to stop smoking, factors that influence the choice for tobacco products are examined. According to this survey there are four factors that influence the choice for cigarettes. These four factors are: price, taste, the tar, nicotine and monoxide carbon levels and the package. This survey concluded that the main influential factor is taste. 22% of the smokers claimed that the only factor that influenced their choice for cigarettes was the

taste and no one stated that they were influenced by the package alone. However, 7% stated that they were influenced by all four of the factors listed. Thus, according to this survey only 7% of the smokers stated that price, taste, the tar, nicotine and monoxide carbon levels and the package had an influence on their choice for cigarettes. However, since this survey was held in 2010, it is difficult to state that packages with pictorial health warnings barely have an influence on the choice for cigarettes, because in 2010 the pictorial health warnings were not yet implemented in every country in the EU (TNS Opinion&Social, 2010).

To be able to elaborate on the influence of negative health claims on the tobacco purchasing behavior of consumers, the most recent review that studied observational studies examining the longitudinal effects of intensifying cigarette pack warnings, is discussed (Noar et al., 2016). This review discovered that by intensifying cigarette pack warnings, this was associated with 1) increased knowledge about smoking risks; 2) reductions in cigarette consumption; 3) increased calls to quit lines; 4) increased quit attempts; 5) increased quit line knowledge; 6) increased short-term smoking cessation, and 7) reduced smoking prevalence. Thus, this demonstrates that pictorial health warnings contribute to increased knowledge about the health effects of tobacco products and also as mentioned 7) reduced smoking prevalence. Six of nine studies that assessed the smoking prevalence, found a decrease in the smoking prevalence. All of the findings in this review were from countries that newly implemented these warnings on tobacco products, therefore this shows that by implementing pictorial warnings, it helps to increase the knowledge about the health risks of smoking, the prevalence and thus the purchasing behavior.

Overall, negative pictorial health warnings on tobacco products influence the knowledge about smoking risks. They also lead to a decrease in the smoking prevalence of a country after these pictorial health claims have been implemented. Thus, the answer to the question: “do these pictorial health claims also influence the purchasing behavior of tobacco consumers?” is yes, they have an influence on the purchasing behavior.

## 5.2 *Assumptions about nudging techniques*

As explained in chapter 3.1 on health-related nudging, the idea behind health-related nudging is that choice architectures are designed, by altering the physical and natural environment or changing the way options are presented in order to make it more likely that a healthy choice becomes the default or natural preference. This thesis focusses on specific types of health-related nudges, namely positive information claims on food and on negative information claims on tobacco products. After discussing marketing and consumer studies that assessed the influence of these two types of claims on the purchasing behavior of consumers, different assumptions about these types of nudging techniques can be made.

The idea behind positive health claims on food products, is that they are used to guide consumers in making a healthy food choice. Marketeers try to influence this choice by making products look attractive and healthy, but since Regulation (EC) No 1924/2006 on nutrition and health claims made on food has been implemented, it has been made sure that marketeers aren't able to influence consumers with misleading claims. After discussing marketing and consumer studies on the influence of these health claims on consumer purchase behavior, it can be seen that a consumers' health perception is influenced by these claims and that they also influence the purchasing behavior. By reading the definition of health-related nudging again '*choice architectures are designed, by altering the physical and natural environment or changing the way options are presented in order to make it more likely that a healthy choice becomes more likely the default or natural preference*' an assumption that can be made is that by using positive health claims on food products, consumers are nudged, and their purchasing behavior is also influenced.

Negative pictorial health claims on tobacco products have the goal to convince people to not make an unhealthy choice. Marketeers are not the ones that try to influence the perception of tobacco consumers and citizens, but the law that obligates producers to put these negative health claims on their packages does. In this case choice architectures are not designed to make it more likely that people choose tobacco products, but citizens are nudged away from tobacco consumption. As can be seen after analyzing the effects of these pictorial claims on consumers, is that these claims do have an effect on the health perception of consumers, but also influence the purchasing behavior.

The next chapter will combine the literature from the chapters on health-related nudging, the law and the marketing and consumer studies and give an answer to the main research question.

## 6. Conclusion

The aim of this thesis was to assess if nudging with either positive or negative health claims is more effective. In order to approach this aim, two types of products that carry such claims were compared in different areas. Positive health claims on food products and negative health claims on tobacco products were the subject of this thesis. By determining first if these two types of information claims fall within the boundaries of nudging, secondly what kind of different approach they have on informing consumers about the healthiness of these products, thirdly why the EU law on both these claims is developed in their own specific way, what the rules and requirements are according to the EU law and lastly what kind of effect these claims have on the purchasing behavior of consumers, led to an answer to the main research question: *‘Is nudging with either positive health claims on food products or with negative health claims on tobacco products more effective?’*

This thesis showed commonalities between the two research subjects. It showed that both positive health claims on food products and negative health claims on tobacco products are a type of nudging that guides consumers in making a healthy decision. It has also shown that positive health claims on food products and negative health claims on tobacco products have a positive influence on the health perception of consumers. Consumers perceive food products with positive health claims as healthier than the same food product without a positive health claim. Negative health claims on tobacco products increase the knowledge about smoking risks of consumers and thereby influence the health perception. It has also shown that positive health claims on food products and negative health claims on tobacco products have an influence on the purchasing behavior of consumers. Positive health claims on food products led to an increased purchasing of food products carrying such claims and negative health claims on tobacco products to a decrease in smoking prevalence in countries where these claims had just been implemented. So this thesis shows that positive claims on food products and negative claims on tobacco products steer consumers in a healthy direction, influence their health perception and purchasing behavior, which means that both types of health claims are effective nudges.

However, after comparing the results of marketing and consumers studies that researched the effects of negative and positive health claims on the purchasing behavior of consumers, it was found that different types of studies used vastly different methods, which was not anticipated on. The effects of positive health claims on food products on the purchasing behavior of consumers are studied by carrying out different types of choice experiments. In most of the studies participants had to choose between a food product with and without a positive health claim. The effects of negative health claims on tobacco products however are tested by surveys that measured the attitudes towards tobacco and studies that assessed the smoking prevalence in countries where these health claims were newly implemented. For this reason, it is difficult to be unambiguous about the effectiveness of nudging with these two types of health claims.

To conclude and answer the research question ' *Is nudging with either positive health claims on food products or with negative health claims on tobacco products more effective?* ' it can be stated that both health claims are effective, but within the current literature it cannot be concluded that one is more effective than the other.

## 7. Discussion

Overall this thesis demonstrated that positive health claims on food products and negative health claims on tobacco products are effective nudges that guide consumers in making healthy decisions, influence the health perception and purchasing behavior of consumers. Since different marketing and consumer studies used vastly different methods, it is difficult to be definitive about if nudging with either positive or negative health claims is more effective. That different marketing and consumer studies would use different methods, was not anticipated on since both claims were expected to have the same goal, which is informing consumers about the healthiness of these two different products. In that sense it was expected that marketing and consumer studies would give results that would be easily comparable. However, marketing and consumer studies showed that both positive and negative health claims influence the purchasing behavior in a positive way, but they did not provide results to give a definitive answer to the research question: *'Is nudging with either positive health claims on food products or with negative health claims on tobacco products more effective?'*

Explanations for the fact that these studies are not comparable are the following: according to the two types of legislations on which these positive and negative claims are based, the difference between the Tobacco Products Directive (2014/40/EU) and the Regulation (EC) No 1924/2006 on nutrition and health claims made on food, is that one is a directive and the other one is a regulation. As provided in chapter 4.3 the difference is that for a directive certain aims and requirements are set and national authorities must create or adapt their legislation to meet these aims, a regulation however has a general application. This difference could explain why the results of marketing and consumer studies are not easily comparable. Since a directive provides certain aims and requirements for national authorities to create or adapt to their legislation, the marketing and consumer studies focus on smoking prevalence in different countries to assess the effectiveness of such claims. Whereas a regulation has a more general application, the focus of marketing and consumer studies is more product specific since the law is not applied differently in different EU countries.

Another explanation could be that since health claims on food products are voluntary and marketers design the labels of food products, researching the effects of specific products on the purchasing behavior gives feedback on how effective their labels are and what they could change to ameliorate the purchase of their products. Tobacco producers however are obliged to put health warnings on their products, must meet the requirements that are set by the national authorities and since all producers in a country must meet the same requirements, they are not allowed to change their labels to ameliorate the purchase. This could explain why the marketing and consumer studies are more nationally driven.

Like all researches, this thesis has some strengths and limitations. Strengths are that to explain why information claims are perceived as a specific type of nudging, different theories (the dual process theory (Kahneman, 2003) and another explanation of the dual process theory by Hansen & Jespersen

(2013)) and the EU law (Regulation (EC) No 1924/2006 on nutrition and health claims made on food and the Tobacco Products Directive (2014/40/EU) have been used.

Next to that to assess the effectiveness of these health claim nudges, not only a literature review is applied but also a doctrinal review to be able to explain the outcomes of the literature review.

A limitation of this research that had the greatest influence, is that positive textual or pictorial health claims are compared with negative pictorial health claims, instead of only comparing one type. For studies that assessed the effectiveness of positive health claims on food products it was often not stated specifically which type was used and negative pictorial health claims on tobacco are chosen because research has shown that only the effect was greatest on consumers with negative pictorial health claims.

Another limitation is that only systematic reviews that assessed the tobacco purchasing behavior in the entire world were found, whereas this thesis focusses on the EU.

After providing possible explanations for the different methods that were used in marketing and consumer studies, to build on the demonstrated effectiveness of positive and negative health claim nudges, a recommendation for future research is given. Since both negative and positive health claims are effective nudges, but both claims are used on different products, to be able to be more definitive about which health claim is more effective, a recommendation is to research the effectiveness of placing a negative health claim nudge on an unhealthy food product. If personalized nutrition in the form of negative health claims on food products would be applied in the future, this would be something to look into. This could not be researched in this thesis due to time concerns and because there is no law that obligates food producers of unhealthy products to place negative health claims on their product.

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