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**Marketing strategy: How to bring Unilever's  
steak substitute to the Dutch market?**

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# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>5</b>
<b>CHAPTER I: INTRODUCTION .....</b>	<b>7</b>
1.1 Background.....	8
1.1.1 Customer perception towards meat substitutes.....	8
1.1.2 Company profile of Unilever.....	8
1.1.3 The importance of an appropriate marketing strategy .....	9
1.2 Thesis statement .....	9
1.3 Data and methodology.....	11
<b>CHAPTER II: EXTERNAL ANALYSIS .....</b>	<b>13</b>
2.1 The meat substitutes industry .....	13
2.2 Environmental impact of meat.....	14
2.3 Trends in the meat substitutes market .....	15
2.3.1 Analysis Market Research Survey .....	16
2.4 The Dutch government and non-governmental organizations .....	17
<b>CHAPTER III: INTERNAL ANALYSIS.....</b>	<b>19</b>
3.1 Strengths and weaknesses of Unilever .....	19
3.2 The product and its comparative advantage.....	21
3.2.1 Results conjoint analysis.....	21
3.3 SWOTI-analysis.....	25
<b>CHAPTER IV: DISCUSSION.....</b>	<b>27</b>
4.1 Objectives and strategies.....	27
4.2 Suggested strategies .....	28
<b>CHAPTER V: CONCLUSION AND LIMITATIONS .....</b>	<b>31</b>
5.1 Conclusion.....	31
5.2 Limitations and recommendations for further research.....	32
<b>LITERATURE REFERENCES .....</b>	<b>35</b>
<b>APPENDIX .....</b>	<b>39</b>
Appendix A - Orthogonal Design of Experiments (DOE).....	39
Appendix B - Descriptive statistics.....	40
Appendix C - Sales location.....	42
Appendix D - Previously tried a meat substitute.....	43
Appendix E - Willingness to try a new meat substitute.....	43
Appendix F - Awareness environmental impact.....	44



## EXECUTIVE SUMMARY

Sustainability is a topic that becomes more and more important nowadays. As Unilever will be cooperating with Wageningen University & Research to bring a steak substitute to the market the coming years, this paper's purpose is examining which marketing strategy would be most suitable for this new product. In order to do so, the external and internal factors of Unilever have been analyzed, which can be seen in the following table. Also, a small-scale market research with a conjoint analysis has been conducted, in order to investigate which attributes levels of a steak substitute are significantly valued by the customer per segment.

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- Successful leading multinational, significant influence and no lack of resources</li> <li>- Innovative. Research and development is very important within the company</li> <li>- Corporate Social Responsibility</li> <li>- Employee commitment</li> </ul>	<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- Planning to sell the margarine industry, causes uncertainty among workers</li> <li>- Having to choose between British and Dutch identity causes uncertainty within the organization</li> </ul>
<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- Perceived health, social and environmental concerns caused stimulation of reducing meat consumption</li> <li>- Meat alternatives industry is growing and developing</li> <li>- Flexitarianism on the rise</li> <li>- Flexitarians do value steak texture</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>- Meat replacers are more expensive than meat products, but WTP is not higher and people are price sensitive</li> <li>- Consumer preferences differ per segment</li> <li>- Vegetarians, vegans and pescetarians do not significantly prefer steak texture over minced meat texture in a steak substitute</li> </ul>
<p style="text-align: center;"><b>Issues</b></p> <ul style="list-style-type: none"> <li>- Consumer preferences differ per segment, so the right marketing strategies should be implemented to target the right segment</li> <li>- How to price the product?</li> <li>- How to take advantage of rising awareness of disadvantages of meat production and consumption?</li> </ul>	

Taking the results into account, my suggestion regarding the marketing strategy is a positioning as high quality brand, targeted on flexitarians, since this segment is willing to try a new product and significantly values a steak texture. A price of €2,55-2,85 per 150 grams of steak substitute is recommended, as people appeared to be price sensitive when it comes to their choice of meat (substitutes). The customers are reached best when selling in supermarkets. Furthermore, close cooperation with the government, non-governmental organizations and Unilever's internal Consumer and Market Insights group will be beneficial for the positioning as a sustainable product and for finding appropriate promotion strategies.



## CHAPTER I: INTRODUCTION

About two years ago, in 2015, Wageningen University & Research developed a new meat substitute based on legumes, with the objective and interim result that it is not inferior to steak (Steak from Vegetable Proteins, 2015). Food technologist Atze Jan van der Goot and his project group have developed a new technology that fabricates the ingredients from legumes, like soybeans, in such a way that a “meat structure” with the fineness and fibre structure from a steak develops. This concept is the basis for the development of a vegetarian steak. The product makes animal ingredients, such as egg or whey, unnecessary and does not have any limitations size-wise.

Considering the recent support of multinational enterprises such as Unilever, the technology is recently getting improved. The support of these companies is a breakthrough, according to project manager Van der Goot: “Until recently, companies doubted whether meat substitutes had the potential to become a success. Now they say: this is the future, we need to step into it. This has resulted in this project.” (Unilever Stapt in Plantaardige Biefstuk: Dit is een Doorbraak, 2017). It is the idea that the university will launch the product on the Dutch market within approximately four years, in collaboration with ten companies. The announcement of this innovative product being brought to the market, was the reason to carry out this research.

The purpose of this paper was particularly to examine which kind of marketing strategy would be most suitable for this new product, given the environmental circumstances and the internal status and objectives of the seemingly most important involved organization, Unilever. Furthermore, when bringing a new product to the market, it is of utmost importance that the product matches the demands of the target group, thus this is also a topic that will be addressed in this paper.

The topic is socially (and environmentally) relevant, since this product has the potential to deliver beneficial results if meat consumption could successfully be reduced (Gossard & York, 2003). In order for this to happen, the product has to be brought to the market in a considerate way, so that a large consumer base can be achieved. In addition, in the context of scientific relevance, this paper develops a marketing strategy for a new, innovative food product on the market, with a methodology that can also be used for similar products, if adapted properly to other companies and situations. Besides, this paper provides an extensive analysis of the market and industry, which is not only useful for Unilever, but also for followers in the industry.

## 1.1 Background

### 1.1.1 Customer perception towards meat substitutes

Meat substitutes - also known as meat replacers, meat alternatives, artificial meat, or vegetable meat - are primarily vegetable based food products that contain proteins made from pulses (mainly soy), cereal protein, or fungi (Hoek et al., 2011). Meat substitutes are ranked higher on animal and environmental friendliness attributes compared to meat. This infers that it is desirable to replace meat production and consumption by its alternatives, especially since the environmental sustainability of products and processes is a growing concern (Van der Lans, 2001). Nonetheless, meat replacers are approximately three to four times more expensive than meat products (Apaiah, 2006), which could be a threat for the meat substitutes industry.

Gossard & York (2003) came to the conclusion that the social structural position of an individual affects meat consumption. Factors that affect dietary habits, even when controlling for physiological variables such as body weight and age, were gender, race, ethnicity, location of residence and social class. It could be useful to take this information into account when segmenting the market before deciding whether and how you will target a specific group.

Hoek et al. (2011) found out that it can be a substantial barrier for new users of meat substitutes, but also for light/medium users, if the unique taste and texture properties of meat are not reflected in meat substitutes. On the other hand, heavy-users appreciate meat substitutes which are dissimilar to meat. This could be explained by the fact that vegetarians have developed a strong dislike of the sensory properties of meat and therefore do not want to be reminded of meat.

### 1.1.2 Company profile of Unilever

Unilever is a multinational enterprise (MNE) that was officially established on the 1st of January, 1930 by a merger of the Dutch margarine company Margarine Unie and the British soap producer Lever Brothers. Nowadays, Unilever exists of more than 400 brands that can be bought in 190 countries and has “the unique opportunity to work with consumers to make sustainable living commonplace” (Unilever, 2017). Their vision as stated on their website is as follows: “...to grow our business, while decoupling our environmental footprint from our growth and increasing our positive social impact.”

Unilever is organized in four categories. The largest is Personal Care, then Foods followed by Home Care and Refreshment. As Unilever is one of the larger multinationals in the world, it is assumed that they will have a significant influence and a large bargaining



power in comparison to other companies in the process with Wageningen University & Research. Therefore, this paper primarily focuses on marketing strategies for this company. In short, the aim of this paper is to investigate according to which marketing strategy Unilever could introduce this new product to the market.

### 1.1.3 The importance of an appropriate marketing strategy

The process by which businesses analyse the environment and their capabilities, decide upon courses of marketing action, and implement those decisions is called marketing planning (Fahy & Jobber, 2012). Bringing a new product to the market is something that will get very chaotic, whether or not impossible, without a proper marketing plan. A marketing strategy is an important part of a marketing plan and has the fundamental goal of increasing sales and achieving a sustainable competitive advantage. Since Unilever is introducing a new product, the main strategic marketing objectives in this case will inevitably be to build sales and market share (Fahy & Jobber, 2012). Moreover, the company itself also has certain (long-term) objectives that have to be taken into account when developing a marketing strategy. Given the fact that different segments have different perceptions regarding meat substitutes, it is important that the marketing strategy is developed in such a way that it targets the people who are most likely to buy the product.

## 1.2 Thesis statement

All in all, Unilever and Wageningen University & Research (WUR) are planning on collaboratively bringing a new, innovative steak substitute to the market. To accomplish this, they will have to set up an appropriate marketing strategy, which was simultaneously the objective of this research. In order to do so, it was necessary to further evaluate the case, so the following research question was formulated:

*“What is the most appropriate marketing strategy for Unilever’s vegetable steak substitute?”*

Since a marketing strategy for new products includes many components that are dependent on multiple factors, the following sub questions had to be answered in order to come up with an solution for the main research question: (1) What does the current industry of meat alternatives look like?; (2) What does the current market of meat alternatives look like?; (3) What strengths and weaknesses does Unilever have?; (4) Which segment is the

most attractive target group, considering the attributes of the product?; and (5) What are the objectives of Unilever as a brand?

The next chapter presents the external analysis. Since it is important to know the market and industry before you can assess your own company, the external environment is analyzed before the internal analysis. This chapter contains analyses regarding the trends in the food industry, potential customers and market segments, environmental impact and the government. The chapter provides answers to question 1 and question 2, and has a focus on the customer's perception, since the data from the survey are analyzed in this section.

As the new characteristic of the product is its texture, which is similar to steak, it was expected that this will also be the comparative advantage of the product. A flexitarian is someone who does not eat meat every day - the term flexitarian is further discussed in the external analysis (Chapter II). It was expected that the steak-like texture has a significant positive effect on consumers utility for flexitarians, since the product might make it easier to gradually reducing meat (Hoek et al., 2011). Therefore, the hypothesis of this research was as follows: *The attribute level "steak texture" has a positive significant effect on consumers' utility, for people who consider themselves "flexitarian"*.

Subsequently, Chapter III analyses Unilever internally and provides an analysis on the product itself. This chapter provides answers to question 3 and 4. The strengths and weaknesses of the organization are discussed in this section. Furthermore, the results from the survey that were important for answering the hypothesis, are discussed in the second part of this chapter. A SWOTI-analysis (strengths, weaknesses, opportunities, threats and issues) concludes Chapters II and III.

Chapter IV is the discussion chapter, in which I took the information obtained from the analyses in previous chapters, and translated it into meaningful marketing strategies. This had to be done consistently meeting the objectives of Unilever, since the product will be introduced under their brand name. This chapter provides an answer to question 5.

Lastly, Chapter V, the concluding chapter that answers the main research question as well as the sub-questions. This chapter is used to accurately describe a suitable marketing strategy for the innovative steak substitute of Unilever in collaboration with Wageningen University & Research. And last but not least, limitations and recommendations for further research are considered.

### 1.3 Data and methodology

In order to answer the main research question, as well as the sub questions, data were acquired by a combination of qualitative research based on secondary data from literature research, and quantitative research that obtains primary data from a survey that I conducted. In this section, I explain what type of data were collected and how this data were transformed into useful information that could be used for analysis.

Literature, such as journal articles and academic papers, have been analyzed in order to come up with answers for the sub questions regarding the meat substitutes industry, environmental impact, trends in the meat substitutes market and the Dutch government. Unfortunately, Unilever has stated on their website that they are not able to cooperate in study related projects. Therefore, also literature research and Unilever's company website were used when I analyzed the company internally. Information regarding the company's objectives has mainly been retrieved from the 'About' page on their official website.

In addition, I conducted a survey, which can be seen as a small-scale market research, since it gathered information about target markets and customers. Additionally, carrying out this survey had the purpose of assessing which attributes have the most important role when buying meat, or a meat substitute. The design of that experiment - an orthogonal design - was created in the statistical software JMP. The questionnaire was set up in Qualtrics. After closing the survey and collecting the data, I transformed the data in Excel in such way that a conjoint analysis in JMP could be operated. The questionnaire started with questions regarding personal information, such as gender, age, education level, eating habits and size of household. These variables were helpful for drawing conclusions regarding market segmentation.

The middle part of the questionnaire consisted of a choice-based conjoint analysis, with attributes that play a role when choosing a meat (substitute) product. Two different product profiles were shown to the respondent - the orthogonal design of experiments can be found in Appendix A. The factors with the biggest (and significant) influence on decision making would infer the product's competitive advantage. The selection of attributes and their respective attribute levels are shown in Table 1. The attribute *product* was taken into account, in order to see whether consumers have a strong and significant preference for either the vegetable steak or the regular steak. It was interesting to know which one is preferred and how it differs between segments. *Price* is assessed, since it is unquestionably one of the most important marketplace cues (Lichtenstein, Ridgway, & Netemeyer, 1993). *Texture* and *flavour* are evaluated for the obvious reason, which is to find out whether the new product delivers significant comparative advantage. And lastly, *accessibility* is evaluated in order to obtain information regarding the (importance of) selling point of the new steak

substitute. The product space, calculated by the amount of attribute levels per attribute multiplied, is therefore 48.

**Table 1** Attributes and attribute levels

<b>Product</b>	Vegetable steak		Steak
<b>Price</b>	€ 3,50 per 150 g	€ 2,85 per 150 g	€ 2,55 per 150 g
<b>Texture</b>	Minced meat		Steak
<b>Flavour</b>	Minced meat		Steak
<b>Accessibility</b>	Supermarket		Organic food store

Lastly, the respondent's opinion on meat substitutes in general and on meat substitutes in the context of sustainability was assessed. Altogether, the survey was relevant since it gave clarity about (1) what segment is a potential target and (2) the competitive advantage of the product, considering the demands of the target group.

I distributed the survey by posting the link to Qualtrics on multiple social media platforms (Facebook, LinkedIn) and by asking acquaintances, family and (parents of) friends to fill it in and to share the survey with others. To have a sample that is as representative for the Dutch population as possible, I tried to combine the snowball sampling method and the quota sampling method to try to match the characteristics of the sample to the population.

## CHAPTER II: EXTERNAL ANALYSIS

### 2.1 The meat substitutes industry

The transition towards a more sustainable diet needs less reliance on animal based food products (Schösler, 2011). A meat substitute, also referred to as meat replacer or meat alternative, is a meatless food that has approximately the same taste, appearance, texture and nutritional value of a related food made from meat, poultry fish or shellfish (Shurtleff, & Aoyagi, 2014).

The plant based meat substitutes industry, is not an industry that popped up just a few years ago. The earliest known reference to tofu (worldwide) appears in China in the Anecdotes, Simple and Exotic by Tao Ku in 965 (Shurtleff, & Aoyagi, 2014). Throughout the years, more and more variations in raw materials and methods were used for producing food products that replaced meat. Also, many different terms passed the revue, and around 1995 the product category “meat alternatives” created at the inception of SPINS Product Library (Shurtleff, & Aoyagi, 2014). In the nineties, Davies, & Lightowler (1998) presented a wide range of food products which they described as “meat alternatives”, namely tempeh and textured vegetable protein (soya beans), trivall (wheat protein), arrum (pea protein and wheat protein), quorn (myco-protein).

Nowadays, there is an extensive list of different types of meat alternatives, which could either be natural, traditional or commercially made. When speaking about substitute products or competition, this paper mainly aims on the commercially made category, since those are the products that are mostly related and most similar to the product that this marketing strategy plan is about. Thus, this category is most likely to be substitute products Unilever will have to compete against after they debut on the market. Well-known brands within the Dutch “meatless meat” industry are quite many names such as: Quorn, Tivall, Vivera, De Vegetarische Slager, Garden Gourmet, and Valess. However, none of these brands has a steak substitute; the products are mostly substituting other meat products, such as burgers, schnitzel, minced “meat”, chicken and “meat” balls.

Albert Heijn, the oldest and biggest supermarket chain in the Netherlands, gives you the opportunity to buy your groceries online, which makes it easy and clear to assess the product mix of protein-rich food products (Vlees, kip, vis, vega, 2017). Table 2 is created for the comparison between the categories. It is remarkable that the vegetable based protein-rich food products are represented by only 84 products, which is a relatively small amount. This is especially remarkable when you consider the fact that the vega section includes substitutes for all different types of meat and fish. So, in comparison with other sections, the vega section is small, but that does not take away that there is also still space to grow and

develop. The global meat substitute market is growing steadily at a compound annual growth rate (CAGR) of 6,8% (Meat Substitute Market - Growth, Trends and Forecasts, 2017). According to Rousseau (2016), the CAGR will even grow by 8,4% annually by 2020.

**Table 2** Number of products per category (Albert Heijn, 2017)

Category	Number of products	
Poultry	154 (19,0%)	Animal based, total = 726
Beef	113 (14,0%)	
Pork	137 (16,9%)	
Fish	322 (39,8%)	
Vega, meat substitutes	84 (10,4%)	Vegetable based, total = 84

Although there are various meat alternatives, the industry is still developing. Recently, there have even been various studies on the consumption of insects as meat substitution. For example, there was a study on profiling consumers who claim to be ready or willing to eat insects in Western or industrialized countries as there is a lack of customers' acceptance of insects as a source of protein (Verbeke, 2015). Currently, the brand Goodlife already sells its bugs in Albert Heijn, the biggest supermarket chain in the Netherlands. This implies that it might be the case that consuming insects has the possibility to become normalized in the future.

## 2.2 Environmental impact of meat

It is widely known that the conventional meat industry has a significant impact on the global environment. "The scale and intensity of animal production generates an increasing proportion of global environmental pressure, including climate change" (Schösler, 2011). Westhoek et al. (2014) tested the effects of halving the consumption of meat, dairy products and eggs in the European Union. They found out that this would achieve a 40% reduction in nitrogen emissions, 25 - 40% reduction in greenhouse gas emissions and 23% per capita less use of cropland for food production. Additionally, these dietary changes were good for lowering health risks as well. Thus, reducing the consumption of meat and other animal products does not only have a positive effect on the global environment, it also has a positive effect on the social environment.

Livestock, farm animals that are kept for use and profit, is a major factor in the growth of world agriculture. This growth of livestock has its downsides, however. Environmental

effects that have been associated with the conventional meat industry are pollution through fossil fuel usage, animal methane, effluent waste, and water and land consumption (Alexandratos, & Bruinsma, 2012).

Some of the respondents in the survey (strongly) disagreed on the meat substitutes being better than meat for the environment (Appendix F). Even though the majority of the sample chose partly agree, agree or even strongly agree, the most chosen answer was “neutral”. This could mean that not all respondents in the survey were aware of the environmental impact of the conventional meat industry, or that they just did not agree for different reasons. Some journalists emphasized that producing lettuce creates more greenhouse gas (GHG) emissions than bacon (Tom, Fischbeck, & Hendrickson, C., 2015). However, they also mentioned that not all foods in a particular food group are created equal and that vegetarianism or veganism is not harmful for the planet. Thus, saying that vegetables are worse for the environment than meat is an incorrect statement, and the problem is too complex (and beyond the scope of this paper) to draw such uncomplicated conclusions.

### **2.3 Trends in the meat substitutes market**

An increasing disposable income in combination with a growing world population has led to a higher volume of global meat consumption. However, the perceived health, social interest and environmental concerns caused a stimulation of reducing the quantity of the meat we eat (Apostolidis & McLeay, 2016). Meat consumption in the United States of America and in the European Union are stagnating (Stiftung, 2014) and almost 60% of the sample of Dagevos et al. (2012) eat meat on only 3-6 days a week. Also the rise of the word flexitarianism reflects the recognition of meat reducers (Dagevos et al., 2012). Originally, the word flexitarianism referred to vegetarians that occasionally eat meat, or people who are in the transition phase of becoming a vegetarian. However, nowadays the word is more generally used for people who want to reduce meat consumption, whether or not they want to be vegetarian.

The fact that more and more people are aware of the (health) risks of meat consumption is a great opportunity for Unilever’s meat substitute. However, the findings of Apostolidis & McLeay (2016) suggested that consumer preferences for meat alternatives are very low, but that there are several opportunities for a reduction in meat-based diets through meat substitution. Additionally, they came to the conclusion that meat substitution strategies and policies should focus on specific consumer segments instead of targeting the average consumer, since consumer preferences probably differ per segment.

There were a several respondents in the survey who indicated that they would not buy meat substitutes that look and feel like meat, but prefer other protein-rich foods such as nuts or they would rather choose a dish that does not need meat. Others indicated that the existence of meat replacers that are similar to meat make it easier for people to become vegetarian or flexitarian, since many people cannot miss eating meat. These two different views towards meat substitutes support the theoretical framework, in which was stated that new/light/medium users probably prefer the reflection of the unique taste and texture of meat in meat substitutes, but heavy-users appreciate meat substitutes that do not have the resemblance with meat.

Unfortunately, according to Apaiah (2006), meat replacers are approximately three to four times more expensive than meat products, which could be a threat for the meat substitutes industry. Additionally, De Boer, Schösler, & Aiking (2014) have observed in their studies that explanatory messages about the impact of beef and soy on health and environment do not have a significant impact on choices and willingness-to-pay (WTP) for a soy meat alternative. Combining these two statements implies that meat alternatives are more expensive than meat in general, but that people are not willing to pay more for an alternative on the basis on explanatory messages about the impact of beef and soy only.

### 2.3.1 Analysis Market Research Survey

In order to evaluate the theoretical framework regarding the target market and to simultaneously provide an answer to question 2, I decided to carry out a small-scale market research. The descriptive statistics of the sample distribution can be found in Appendix B. From the results of the survey, it appeared that the supermarket was the location where most people most frequently buy their groceries, and therefore their meat and meat alternatives (Appendix C).

Furthermore, people were asked if they have ever tried a meat substitute. In Appendix D is shown how the answers are distributed. The answers are transformed so that the answers “strongly disagree” (strongly agree), “disagree” (agree) and “partly disagree” (partly agree) are represented by “no” (yes). Additionally, the categories vegetarian, pescetarian, vegan and other are merged into one category in order to have a clearer overview. The category presenting flexitarians is kept separately for the reason that these people do eat meat occasionally, contrary to the people from the other category do not eat meat at all. For meat eaters, the distribution between the frequency that “no” is chosen versus the frequency that “yes” is chosen, is approximately equal. For vegetarians, pescetarians, vegan, flexitarians and others, there is a clearly visible difference in the graph between yes (67 times) and no (12 times). However, the fact that they have tried it (at least)



once, does not mean that they are willing to buy and/or to consume it again in the future. Thus, it does not tell us to which extent people are likely to become potential customers.

Therefore, subjects were also asked whether they would be open to try a (new) meat substitute (all other things equal - no price and any further information was given). Appendix E shows these results. We can see that the graph is rather similar to the graph in Appendix D, especially for the categories vegetarian et cetera and flexitarians. On the other hand, a smaller proportion of meat eaters answered “no”, but chose “neutral” instead. Still 33 out of 122 meat eaters are not willing to try a (new) meat substitute. This could imply that (the consumption of) artificial meat is not yet fully accepted or appreciated among people who do eat meat, regardless of the underlying reason. The yes/no distribution among flexitarians, vegetarians, pescetarians, vegans and others are more biased in favour of “yes”. Taking this into account, we can imply that people who fall in these categories will probably be more open for trying the new product, and are therefore a more attractive target than meat eaters.

All in all, most subjects indicated that they buy their groceries in the supermarket and people who do not (often) eat meat are more likely to have ever tried, or to be open to try a new meat replacer. The results of the conjoint analysis regarding the effects of the product's attribute levels on consumers' utility will be discussed in section 3.2.

## **2.4 The Dutch government and non-governmental organizations**

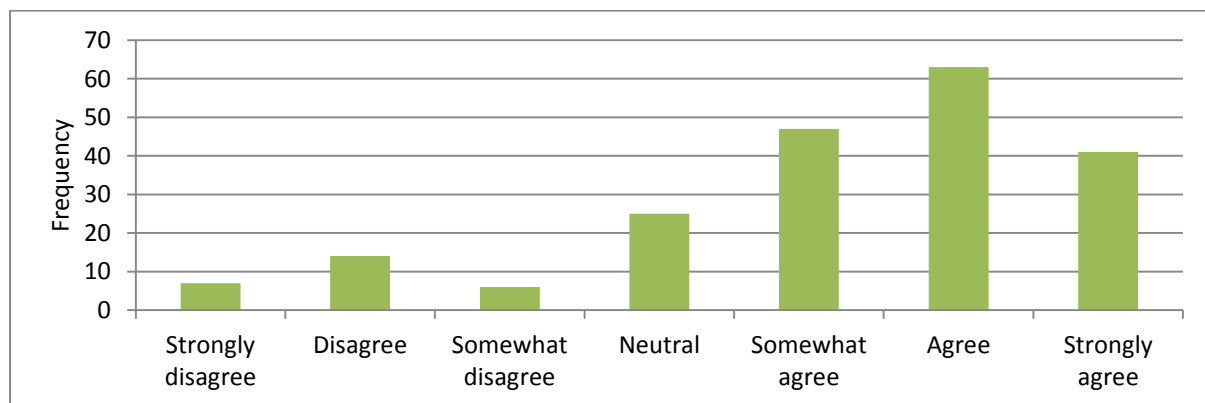
Energy, water and raw materials are needed for producing food. Meanwhile, in this production process, waste is generated. Sustainable production reduces the effect on the environment, and the government helps companies financially so that they can produce their food sustainably (Rijksoverheid stimuleert duurzame productie voedsel - Voeding, 2017). One example that shows the government's active involvement is the “New Food Challenge”. This project challenges (new) companies to develop attractive food products on the basis of vegetable proteins (Van Dam: 1,8 miljoen voor meer innovatieve plantaardige voedselproducten, 2017). The objective of the New Food Challenge is to get more new healthy and attractive products in the supermarkets. This is also in line with the nutrition advices of the Gezondheidsraad and Voedingscentrum's “Schijf van Vijf”. A higher consumption of vegetable proteins is not only healthier, but also provides a more sustainable food production.

The government is not the only institution with an influence on the conventional meat industry. There are multiple non-governmental organizations (NGOs) that insist on environment and animal rights, such as Wakker Dier. Wakker dier is a non-profit organization with the mission that animals will be treated with respect, and for the Netherlands to eat “less but better meat” (Wakker Dier, 2016). Their goal is that the meat

consumption in the Netherlands will be decreased by a quarter and that every meat product will have a “Beter Leven Ster” in 2030. “Beter Leven” is a quality mark given by the Dierenbescherming (a Dutch animal protection organization) when the meat producer meets a basic set of minimum standards regarding animal welfare (Beter Leven, 2017). Wakker Dier has already booked huge successes, for example Jumbo and Albert Heijn, two large supermarket chains, have averted the “plofkip” from their house brand in 2016. “Plofkip” is a fast-growing chicken that is specially kept for meat production, and that lives under poor living conditions. Wakker Dier is a growing company with a growing influence; their benefits in 2015 were €2.152.279, and the benefits in 2016 were €2.768.000. For 2017 and 2018 they have planned even higher benefits to have a higher action budget (Wakker Dier, 2016).

The fact that the government is increasingly stimulating sustainable production processes and actively helping to decrease the environmental impact by promoting alternative protein resources had not stay unnoticed by consumers. In the survey, respondents were asked to rate the following statement: “In the future, I expect that the consumption of meat substitutes will be more stimulated by the government and other (non-profit) organizations.” The distribution of the answers is as follows (Figure 1).

**Figure 1** “In the future, I expect that the consumption of meat substitutes will be more stimulated by the government and non-governmental organizations.”



Altogether, the demand for more sustainable food products industry should not (entirely) rely on animal products. The meat alternatives industry is a growing and developing industry. Consumers nowadays are more aware of perceived health, social and environmental concerns. Furthermore, there are multiple stakeholders in the meat (alternatives) industry. It is not as simple as only producers and consumers being involved in the whole process, also government, (non-profit) interest groups, society and environment have its stake. These groups also have interests that are in favour for animal rights, which causes stimulation of reducing meat consumption. This could be favourable for the industry of meat substitutes.

## CHAPTER III: INTERNAL ANALYSIS

### 3.1 Strengths and weaknesses of Unilever

As already mentioned in the theoretical framework, Unilever is a market leading multinational established in 1930 by a merger of the Dutch margarine company Margarine Unie and the British soap producer Lever Brothers. In a later part of this section, I will elaborate on this double nationality. Unilever's success is reflected in their turnover of 52,713 million euros and operating profit of 7,801 million euros in 2016 (Unilever, 2017). As Unilever is one of the larger multinationals in the world (Schaefer, 2016), it is assumed that they will have a significant influence compared to other companies in the process with Wageningen University & Research.

"We work on a wide portfolio of projects, combining the search for breakthrough technologies with the constant drive to respond to competitors, move into new markets, and make our products more sustainable." This is a quote from Unilever's official website and signifies that Unilever attaches importance to research and development (R&D). The fact that they are a very innovative company is also apparent from the matter that they have six main R&D centers all over the world, and their cooperation with companies and universities. The organization has "a strong record for achieving breakthrough innovations - disruptive technologies that meet consumer needs better than any available alternatives, and which can make a big impact" (Unilever, 2017). Furthermore, Unilever invests 1 billion euros in R&D each year and holds a portfolio of more than 20,000 patents and patent applications.

Another strength of Unilever is its social awareness. The Unilever Sustainable Living Plan (USLP) is Unilever's corporate social responsibility (CSR) programme which achieves their vision to be a growing business, while increasing their positive social impact. This creates a strategic benefit for the firm and is therefore beneficial for the long run. The main subjects for these programmes are beneficial for reducing environmental impact, improving health and well-being and enhancing livelihoods. For example, in 2014, they began tracking the number of female farmers in the supply chain, assessing certain crops and countries where around 25% is female. Unilever offered them training and support to help boost incomes and drive gender equality. Proponents of corporate social responsibility are convinced that it pays off for the firm as well as for the organization's stakeholders and society (Burke & Logsdon, 1996).

Unilever is not only known for its social responsibility, the company is also well known for its historic concern for employees and communities (Mirvis, 2011). According to Collier and Esteban (2007), the human resources function can contribute to the establishment of effective CSR policies by delivering on the responsibilities that the company

has to their employees as stakeholders. Furthermore, employee perceptions of justice and fairness have to do with ways in which employees are treated by the organization. Unilever's employees have been engaged a lot to transform the business (Mirvis, 2012). In this article, one of the employees explained that having many company brands linked to social causes changed the paradigm of thinking that they are "selling to customers", but that they are "serving our communities". Also, Unilever offers many different trainings and career opportunities to their employees (Unilever, 2017), and was currently on the best employers ranking list, so they have a high reputation as attractive employer (America's Best Employers, 2016).

Despite these strengths, not all is good within the company. A recent event within Unilever caused much uncertainty among employees. Recently, in April 2017, American competitor Kraft Heinz showed interest in taking over the British-Dutch Unilever for 134 billion euros (Prick, 2017). Unilever rejected the bid. However, the shareholders were less rejecting, believing some things had to change in the British-Dutch company. Now the Unilever summit is back with measures, meaning that there will be some changes taking place in the near future. Unilever CEO Paul Polman wants to eliminate the margarine industry, which marks the starting point of a period of uncertainty for employees of these margarine factories.

Not only employees of the margarine factories have to cope with uncertainty, also the employees of the headquarters in Rotterdam and in London have concerns (Prick, 2017). On the same day of the disclosure regarding eliminating the margarine industry, the top management of Unilever announced that they want to get rid of their double nationality. Currently, Unilever is a British-Dutch company with headquarters in London and Rotterdam. Before the end of the year, it has to become clear which headquarters will remain.

The plans mentioned above are meant to offer more yield to shareholders (Prick, 2017). If Unilever succeeds, it will become less interesting for shareholders to sell their share. Thus, a takeover bid will deviate. Labour unions such as the Christelijk Nationaal Vakverbond (CNV) encourage this, since a new owner will always come with uncertainty. At the same time, they are concerned since it seems like every choice is made to satisfy the shareholders, instead of making a choice for the benefit of the employees.

## 3.2 The product and its comparative advantage

Wageningen University & Research developed a new vegetable-based meat alternative, that is not inferior to steak (Steak from Vegetable Proteins, 2015). They advanced a new technology that fabricates the ingredients from legumes, like soybeans, in such a way that a “meat structure” develops with the fineness and fibre structure from a steak. This concept is the basis for the development of a vegetarian steak. The product makes animal ingredients, such as egg or whey, unnecessary and does not have any limitations size-wise. Thus, according to the Wageningen University & Research, the comparative advantage of the product, is that it has a more similar texture to real steak, compared to currently existing steak alternatives on the market.

In the Ansoff Matrix, there are four different types of product-market strategies for business-growth alternatives (Ansoff, 1957): (1) Market penetration, which is increasing company sales by either increasing the volume of sales to its present customers or by finding new customers to present products; (2) Market development, the strategy in which the company attempts to adapt its present product line in a new market; (3) Product development strategy, which retains the present target group and develops a product with new and different characteristics as will improve for the performance of the target; (4) Diversification, the final alternative in which the company departs from both the present product line and the present market structure.

The diversification strategy is most suitable to the case of Unilever’s new meat substitute, since they will obviously introduce a product with a different characteristic as can be found on the market, namely a more steak-like texture. Additionally, they will not operate in the present market structure, as they do not have a defined target group yet. The diversification strategy is different than the other three, in the sense that this strategy requires new skills, new techniques, and new facilities (Ansoff, 1957).

### 3.2.1 Results conjoint analysis

The way in which the product is manufactured is beyond the scope of this paper. More interesting for this paper is to find out what segment is the most attractive target group, and how to market the new product to meet their demands. Table 3 shows the total results from the conjoint analysis. The first column shows the attribute; the second column gives the name of the level which operated as the attribute’s neutral level; the third column gives the effect of the other level or levels on consumers’ utility; and lastly the P-value is shown. To judge whether the test results are statistically significant, a significance level of  $\alpha = 0,05$  is used for all statistics in this paper. The same structure goes for following tables.

**Table 3** Total - Effect and significance of attribute levels (n=203)

<b>Attribute</b>	<b>Neutral level</b>	<b>Effect</b>	<b>P-value</b>
<b>Product</b>	Vegetable steak	Steak +0,056	0,335
<b>Price</b>	€3,50	€2,55 +0,757 €2,85 -0,037	0,000
<b>Texture</b>	Steak	Minced meat -0,271	0,000
<b>Flavour</b>	Steak	Minced meat -0,290	0,000
<b>Accessibility</b>	Supermarket	Organic food store -0,325	0,000

From these results we can see that the preference of steak over vegetable steak is insignificant (P=0,335). This is in accordance with the findings of Apostolidis & McLeay (2016), however, they said that consumer preferences for meat alternatives are very low, while here the meat alternative is not even preferred. All other attributes have a significant effect on consumers' utility. As expected, steak is chosen over minced meat for both texture and flavour, and accessibility in the supermarket is preferred over accessibility in an organic food store. The latter can be explained by the fact that people are normally doing their groceries and buying meat (alternatives) in the supermarket (Appendix C).

As mentioned before, every segment has different preferences, and the purpose of this research is to assess which segment has the highest potential of buying the product. Segmenting the market and testing the attribute effects for each group separately will provide us more meaningful results from which we can draw conclusions that will be useful for writing the marketing strategy. Table 4 presents the effects of the attributes on consumers' utility for people who indicated that they consume meat on a regular basis.

**Table 4** Meat eaters - Effect and significance of attribute levels (n=122)

<b>Attribute</b>	<b>Neutral level</b>	<b>Effect</b>	<b>P-value</b>
<b>Product</b>	Vegetable steak	Steak +0,298	0,000
<b>Price</b>	€3,50	€2,55 +0,726 €2,85 +0,010	0,000
<b>Texture</b>	Steak	Minced meat -0,204	0,028
<b>Flavour</b>	Steak	Minced meat -0,342	0,000
<b>Accessibility</b>	Supermarket	Organic food store -0,302	0,000

While the effect of the product type on utility was insignificant for Table 3 (the total sample), we see that the type of product is significant for the category presented in Table 4. People who regularly eat meat have a preference for steak (+0,298) over vegetable steak. Furthermore, all other attributes have significant effects too; steak is again preferred over minced meat for both texture and flavour, and people rather buy their (vegetable) meat in the supermarket than in the organic food store. For the meat eaters-category, low prices are highly preferred over high prices. They preferred €2,55 for 150 grams over €2,85, and €2,85 over €3,50. The price effect (+0,726) if the price goes from €3,50 to €2,55 is larger than all other effects. This implies that meat eating consumers are price sensitive when it comes to buying meat (alternatives). Since meat is mostly less expensive than meat substitutes, it could be one of the reasons that explain why people prefer meat over its alternatives.

In order to see the extent to which the preferences differ for people who do not eat meat, Table 5 presents the people who are vegetarian, vegan, pescetarian or another category. This is the group of people that do not consume meat.

**Table 5** Vegetarian, vegan and pescetarian - Effect and significance of attribute levels (n=34)

<b>Attribute</b>	<b>Neutral level</b>	<b>Effect</b>	<b>P-value</b>
<b>Product</b>	Vegetable steak	Steak -0,721	0,000
<b>Price</b>	€3,50	€2,55 +1,007 €2,85 -0,098	0,000
<b>Texture</b>	Steak	Minced meat -0,220	0,251
<b>Flavour</b>	Steak	Minced meat -0,060	0,732
<b>Accessibility</b>	Supermarket	Organic food store -0,337	0,036

Obviously, the difference is between Table 4 and 5, is that meat eaters prefer beef steak, and vegetarians, vegans and pescetarians have a strong (-0,721) and significant (P=0,000) dislike for beef steak. Furthermore, a price of €3,50 is quite a bit preferred over a price of €2,85, but the price of €2,55 is highly preferred (+1,007) over €3,50. This implies that vegetarians, vegans and pescetarians are also very price sensitive. What is remarkable is the fact that texture and flavour of meat alternatives do not have significant effects for vegetarians. The accessibility effect is similar to the effect of accessibility for meat eaters, as they also fancy the supermarket over the organic food store.

In this moment, we have analyzed the information about preferences of people who do eat meat on a regular basis, and people who do not eat meat at all. But there is also a category in between; the flexitarians who are reducing their meat consumption. Their

preferences are expected to be different from the earlier categories, since they do consume meat but they are working on reducing it. Table 6 presents their preferences.

**Table 6** Flexitarians - Effect and significance of attribute levels (n=47)

<b>Attribute</b>	<b>Neutral level</b>	<b>Effect</b>	<b>P-value</b>
<b>Product</b>	Vegetable steak	Steak 0,046	0,711
<b>Price</b>	€3,50	€2,55 +0,799 €2,85 -0,049	0,000
<b>Texture</b>	Steak	Minced meat -0,409	0,007
<b>Flavour</b>	Steak	Minced meat -0,345	0,002
<b>Accessibility</b>	Supermarket	Organic food store -0,314	0,021

People who consider themselves flexitarians, occasional meat eaters, do not have a significant liking for either steak or vegetable steak. The effect of price is, like for the other categories, significant, and people prefer the lowest price, €2,55, over higher prices. This category also likes buying their products in the supermarket instead of an organic food store. Where texture and flavour did not have significant effects on the utility of people that do not eat meat, flexitarians significantly preferred the texture and the flavour of steak over the texture and flavour of minced meat.

In conclusion, from the overall results appeared that texture does not have a significant effect on consumers' utility if you consider vegetarians, vegans and pescetarians. However, for the meat eaters, the effect of texture is significant and in favour of the steak texture with a difference of +0,204 considering a texture similar to minced meat. For flexitarians, this is effect is even larger (+0,409). This is a great opportunity for Unilever's new product. Given that the majority of flexitarians indicated that they would be open to try a new meat substitute, makes the flexitarian segment the most attractive segment to target the marketing on. This is in accordance with the theoretical framework and we can therefore (partly) accept the hypothesis and conclude that the attribute level "steak texture" has a positive significant effect on consumers utility for people who consider themselves flexitarian and for people who regularly eat meat, however, the effect is not significant for vegetarians, vegans and flexitarians.



### 3.3 SWOTI-analysis

Chapters II and III described the external for the meat (substitutes) market, meat (substitutes) industry and an internal analysis on Unilever as a company, with a focus on the steak substitute. Table 7 consists of an overview of Unilever's strengths, weaknesses, opportunities, threats and issues, and summarizes the abovementioned chapters.

**Table 7** SWOTI-analysis Unilever

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- Successful leading multinational, significant influence and no lack of resources</li> <li>- Innovative. Research and development is very important within the company</li> <li>- Corporate Social Responsibility</li> <li>- Employee commitment</li> </ul>	<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- Planning to sell the margarine industry, causes uncertainty among workers</li> <li>- Having to choose between British and Dutch identity causes uncertainty within the organization</li> </ul>
<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- Perceived health, social and environmental concerns caused stimulation of reducing meat consumption</li> <li>- Meat alternatives industry is growing and developing</li> <li>- Flexitarianism on the rise</li> <li>- Flexitarians do value steak texture</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>- Meat replacers are more expensive than meat products, but WTP is not higher and people are price sensitive</li> <li>- Consumer preferences differ per segment</li> <li>- Vegetarians, vegans and pescetarians do not significantly prefer steak texture over minced meat texture in a steak substitute</li> </ul>
<p style="text-align: center;"><b>Issues</b></p> <ul style="list-style-type: none"> <li>- Consumer preferences differ per segment, so the right marketing strategies should be implemented to target the right segment</li> <li>- How to price the product?</li> <li>- How to take advantage of rising awareness of disadvantages of meat production and consumption?</li> </ul>	



## CHAPTER IV: DISCUSSION

### 4.1 Objectives and strategies

Since Unilever is introducing a new product, the main strategic marketing objectives will inevitably be to build sales and market share (Fahy & Jobber, 2012). The diversification strategy is one of the product growth strategies (Ansoff, 1957) and will occur as we are speaking of a new product that is developed for new markets. The diversification strategy is more likely to work when there is synergy between the existing and new products (Fahy & Jobber, 2012). In this case, I believe that a certain synergy exists; besides the obvious objective to build sales and market share, Unilever has the objective of long-term growth, and the objective of creating value in a sustainable way without it being at the expense of people and the planet (Unilever, 2017). Bringing the new product - which is also a sustainable food product by all means - to the market is therefore something that perfectly suits with the current objectives of the company.

In the context of corporate social responsibility and sustainability, the Unilever Sustainable Living Plan (USLP) is created seven years ago, and drives “growth through brands with purpose, taking out costs from our business, reducing risks and helping us to build trust” (Unilever, 2017). One of the values for their business and society is more growth. In 2016, the 18 “sustainable living brands” have delivered 60% of Unilever’s growth and are growing over 50% faster than the rest of the business.

Apparent from their annual report of 2016, the company is well aware of the digital revolution, and anticipates to this. “Unilever’s own Consumer and Market Insights (CMI) group has created People Data Centres which analyse data from social media, consumer carelines and digital marketing to turn millions of conversations into business decisions to maximise sales and revenue” (Unilever, 2017). The CMI group provides data which drive product innovations and behaviour change programmes. Furthermore, Unilever advertised across their digital platforms, direct-to-consumer, e-commerce channels and their social and digital communications to make marketing faster, more efficient and effective.

## 4.2 Suggested strategies

First of all, consumer preferences differ per segment, so the right marketing strategies should be implemented in order to target the right segment. In this paper, the population is segmented on the basis of eating habits regarding meat. From the survey appeared that only meat eaters and flexitarians, considered as groups, have a significant preference for steak texture over a minced meat texture for a steak alternative. However, solely among the group of flexitarians, a large proportion indicated to be open to try (new) meat substitutes. If the focus is put on the new characteristic of the product (its steak texture), it is suggested that marketing strategies should then be targeted towards the flexitarians, since they are probably the most profitable target group.

Since the product will be the pioneer in the market, and Unilever is known for its high quality A-brands, this product should also have a high quality position. Being the pioneer is beneficial in the sense that they can set the rules for following brands, regarding the price of the product for example. Since Unilever and Wageningen University & Research will probably have a patent for the innovative technology which makes the product, their position as market leader is assured for a certain period of time. For the physical positioning, the product should be sold in the supermarket in order to reach the target group, as this is the location where most people do their groceries. Additionally, the supermarket also appeared to be significantly preferred over the organic food store.

As seen from the results of the conjoint analysis, every group from the sample - so also the group of flexitarians - was very price sensitive. Taking the effect and the P-value (Table 6) into account, we can conclude that a price of €2,55 instead of €3,50 adds more utility than a steak texture instead of minced meat texture. However, as €3,50 is slightly preferred over €2,85 (+0,049), any price between that range should not make a difference in utility. The product should be priced so that at least the costs are covered, but should not exceed the prices of the comparable meat alternatives that are sold in the current market, otherwise the comparable advantage might be too small. Besides, from the fact that flexitarians did not have a significant for meat or meat alternatives, the price of conventional steak has to be taken into account as well. Considering this and the fact that the utility difference between €2,55 and €2,85 is comparatively high, I suggest the price setting between €2,55-€2,85 per 150 grams of steak substitute.

In order to reach the flexitarian segment, close collaboration with the Consumer and Market Insights (CMI) group is required. Nowadays, much social interaction occurs digitally, so it is a good move to use the information the CMI gathers. This information is derived from online platforms and consists of sustainability insights, which drive product innovations and behaviour change programmes (Unilever, 2017). Furthermore, advertising and

communicating with (potential) consumers through social media platforms and other digital platforms is a great opportunity, because more and more people are active on these digital platforms, which could make it faster and more efficient to reach them.

The matter that the awareness of the disadvantages of meat production and consumption is rising, is beneficial for the meat alternatives industry, so also for Unilever's new product. This awareness can also explain why flexitarianism is on the rise nowadays. Unilever should capitalize on this matter, by really focusing on the benefits of meat alternatives in their advertising. An option for this could be a collaboration with the government or interest organizations, such as Wakker Dier, by having jointly published advertisements, in which they have to stress the importance of sustainability and/or animal rights. A certain type of partnership with the government or non-governmental organizations (NGOs) could make the given information more trustworthy for the customer (Dahan, Doh, Oetzel, & Yaziji, 2010). Furthermore, NGOs can offer competencies and resources, such as market knowledge and expertise and brand value with their own clients. A collaboration with the government or with a NGO could therefore be very beneficial for the (long-term) profitability of the steak substitute.

The product is besides environment and animal friendly, also very sustainable. Given that Unilever is strongly emphasizing their corporate social responsibility and sustainability objectives, the marketing (campaigns) of the product should definitely rely on this and also put focus on sustainability. An idea could be an additional project within their Sustainable Living Plan, and relating the sale of the product to the development of a similar cause. An example could be giving training and support to people in developing countries on how to get enough proteins and other nutrients. Unilever could use a certain part of the profit obtained from the sale of the new product to organize these kind of trainings, with the purpose of improving the world in the long term while growing the company and earning money. This will in some way have the chance to be a successful strategy, as earlier research found out a strong correlation between corporate social performance and financial performance (McWilliams, 2000).



## CHAPTER V: CONCLUSION AND LIMITATIONS

### 5.1 Conclusion

The plant based meat substitutes industry is an industry that has been developing throughout the centuries. Nowadays, there is an extensive list of different types and brands of (commercially made) meat alternatives, but there is no steak substitute with a respective texture yet. Considering a regular supermarket, there is a relatively small supply of vegetable protein-rich food products compared to meat products. However, the compound annual growth rates of the meat substitute market are quite high, and the industry is dynamically developing.

The increasing concerns regarding health, environment and social interest caused a stimulation of reducing the quantity of meat we eat. This is also strengthened by the Dutch government and other non-governmental organizations, such as Wakker Dier. The meat consumption in the United States and in Europe is stagnating. Also, there is a rise in flexitarianism, the phenomenon that an individual consciously chooses to reduce his or her meat consumption, sometimes with the aim of transitioning into vegetarianism. According to the survey, people who categorized themselves in the groups flexitarians, pescetarians, vegetarians or vegans are more open for trying new meat substitutes than meat eaters. However, some people indicated that they would never buy a fabricated meat substitute.

Unilever is a highly successful and innovative multinational enterprise that attaches importance to research and development. Furthermore, the company is known for their corporate social responsibility and their historic concern for employees and communities. However, recent events of a takeover bid of Kraft Heinz, the elimination of the margarine industry and the choice they have to make between Dutch and British, caused much uncertainty within the company.

The most attractive target group is the group of flexitarians. This is the group of people who are trying to reduce their meat consumption, but not (yet) eliminating it out of their diet. The reason why I categorized this group as most attractive, has to do with the information from the theoretical framework in combination with the results of my survey. I hypothesized that the attribute level "steak texture" had a positive significant effect on consumers' utility, at least for people who consider themselves flexitarian. From the survey, it appeared that the group of flexitarians indeed significantly valued the steak texture. Therefore, we can partly accept the hypothesis and conclude that flexitarians attach value to the texture of a steak substitute.

Bringing a new product to the market has to meet the company's objectives. Since they will be introducing a new product in a new market (diversification strategy), their main

strategic marketing objective will be building sales and market share. The core values of Unilever as a company are long-term growth and creating value in a sustainable way without it being at the expense of people and the planet. In practice, Unilever has set up the Sustainable Living Plan to meet these objectives. Moreover, the company is aware of the rise of the use of digital platforms and increasingly anticipates to this.

Taking the concluding remarks from this chapter into consideration, I believe that I can answer to the main research question, which was how to appropriately strategically market Unilever's vegetable steak substitute. The product definitely has the potential to obtain high sales and profits. As I segmented the market according to people's eating habits/lifestyle towards meat, I found out that the segment of flexitarians will be the most attractive as target group. Since Unilever is a pioneer with this product, the company could position the product according to their objectives, which will be a high quality and sustainable product. The steak substitute should be offered in supermarkets, against a price in the range of €2,55-€2,85 per 150 grams. The (digital) marketing campaigns should focus on the comparative advantages of the product, which are mainly its sustainability and steak texture. Collaborating with their (internal) Consumer and Market Insights group, and with the government or NGOs, could be desirable for accurately reaching the target group.

## **5.2 Limitations and recommendations for further research**

One of the limitations in the survey, is that the choice-based conjoint analysis could lead to confusion for the respondent. Some combinations of attributes are hypothetical and are thus not realistic in real life, for example a steak with the texture of minced meat. Besides, for people that do not consume beef or artificial meat, irrespectively if that is because they do not like it or do not eat it for religious purposes, it is hard or even impossible to fill in which option they preferred. In the question in which I asked people to indicate whether they have further comments to support their answers, there were indeed people who responded that they preferred no meat at all over a meat substitute.

Another thing that should be reconsidered in further research, is the term "flexitarian". In my research, the respondents could indicate whether they would consider themselves flexitarian, thus, it was quite based on their own interpretation. One could consume meat five or six times a week and consider themselves either flexitarian or meat eater on a regular basis. It would therefore recommend following researches to set certain requirements before people categorizing themselves either one of them, so that the difference between the categories become more clear.

Furthermore, the sample is not entirely representative for the whole Dutch population (Appendix B). The age groups were not equally distributed. A representative sample for this



population is something that would have been extremely difficult to obtain, since I only had a few weeks to carry out my research and since I lack the resources to achieve this. However, this is definitely something that has to be taken into consideration in further research. The male-female ratio in the sample was unequal as well. On the first sight, this seems unrepresentative, however, this is justifiable since the average minutes spent per day on (grocery) shopping is higher for women than for men in the Netherlands (Balancing paid work, unpaid work and leisure, 2014).



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## APPENDIX

### Appendix A - Orthogonal Design of Experiments (DOE)

*Orthogonal Design of Experiments (DOE)*

<b>Choice set</b>	<b>Product</b>	<b>Price (€)</b>	<b>Texture</b>	<b>Flavour</b>	<b>Accessibility</b>
1	Vegetable	3,50	Steak	Minced meat	Organic food store
1	Vegetable	2,85	Minced meat	Minced meat	Supermarket
2	Vegetable	3,50	Minced meat	Steak	Supermarket
2	Vegetable	2,55	Steak	Steak	Supermarket
3	Vegetable	2,85	Minced meat	Minced meat	Organic food store
3	Steak	3,50	Minced meat	Steak	Organic food store
4	Steak	2,85	Steak	Minced meat	Supermarket
4	Steak	2,55	Steak	Minced meat	Supermarket
5	Vegetable	2,55	Minced meat	Steak	Supermarket
5	Steak	2,85	Steak	Minced meat	Supermarket
6	Steak	3,50	Steak	Minced meat	Supermarket
6	Vegetable	2,85	Steak	Steak	Organic food store
7	Steak	2,85	Steak	Steak	Organic food store
7	Vegetable	3,50	Steak	Minced meat	Organic food store
8	Vegetable	3,50	Steak	Minced meat	Organic food store
8	Vegetable	3,50	Steak	Minced meat	Supermarket

## Appendix B - Descriptive statistics

Descriptive statistics of the sample (n=203)

Age	Frequency	Percentage
<18	15	7,39%
18-24	108	53,20%
25-34	17	8,37%
35-44	22	10,84%
45-54	32	15,76%
55-64	5	2,46%
>65	4	1,97%
Gender	Frequency	Percentage
Female	126	37,93%
Male	77	62,07%
Education level	Frequency	Percentage
Basisonderwijs	1	0,49%
Vmbo	8	3,94%
Havo	14	6,90%
VWO	13	6,40%
MBO	34	16,75%
HBO	51	25,12%
Universiteit	82	40,39%
Household size	Frequency	Percentage
1	43	21,18%
2	54	26,60%
3	36	17,73%
4	47	23,15%
5	16	7,88%
≥6	7	3,45%
Eating habits	Frequency	Percentage
Regular meat eater	122	60,10%
Flexitarian	47	23,15%
Pescetarian	6	2,96%
Vegetarian	19	9,36%
Vegan	5	2,46%
Other	4	1,97%
Responsible for groceries	Frequency	Percentage
Agree	97	47,78%
Neutral	46	22,66%
Disagree	60	29,56%



<b>Meat days per week</b>	<b>Frequency</b>	<b>Percentage</b>
0	28	13,79%
1	5	1,97%
2	12	5,91%
3	23	11,33%
4	17	8,37%
5	33	16,26%
6	42	20,69%
7	44	21,67%

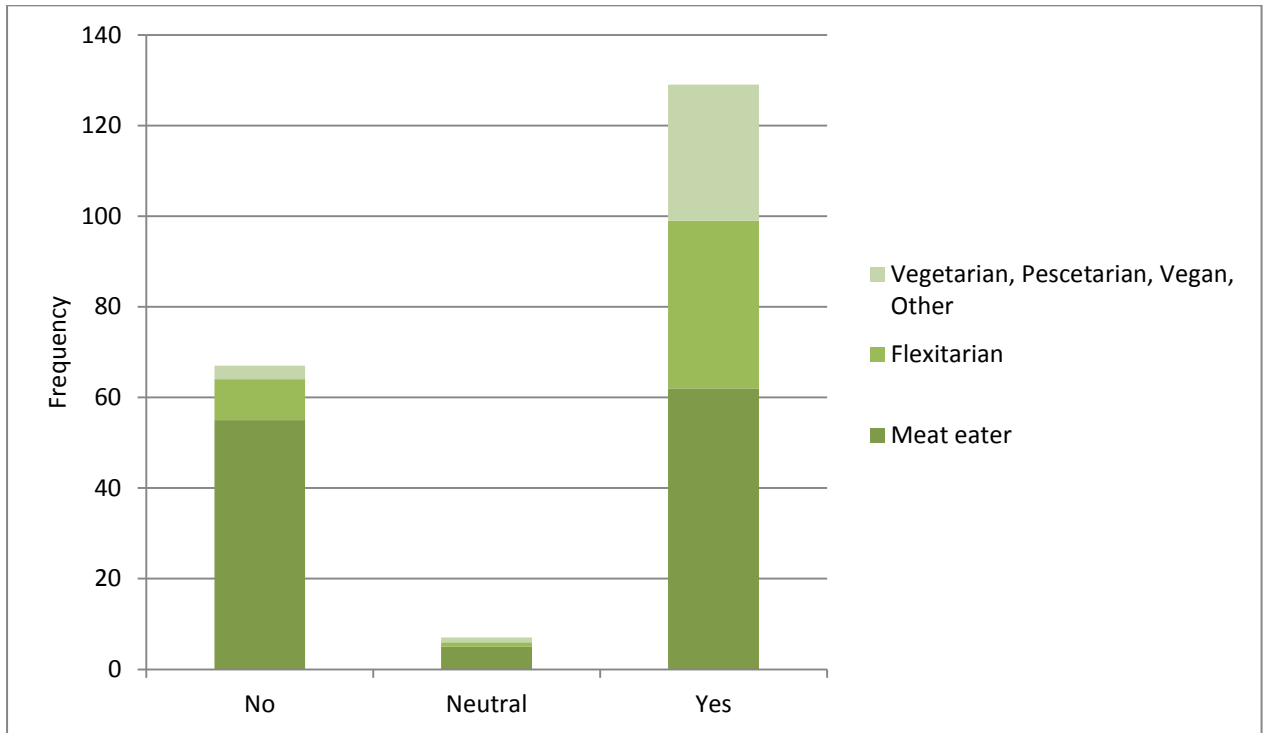
## Appendix C - Sales location

Where do you usually buy meat (substitutes)?



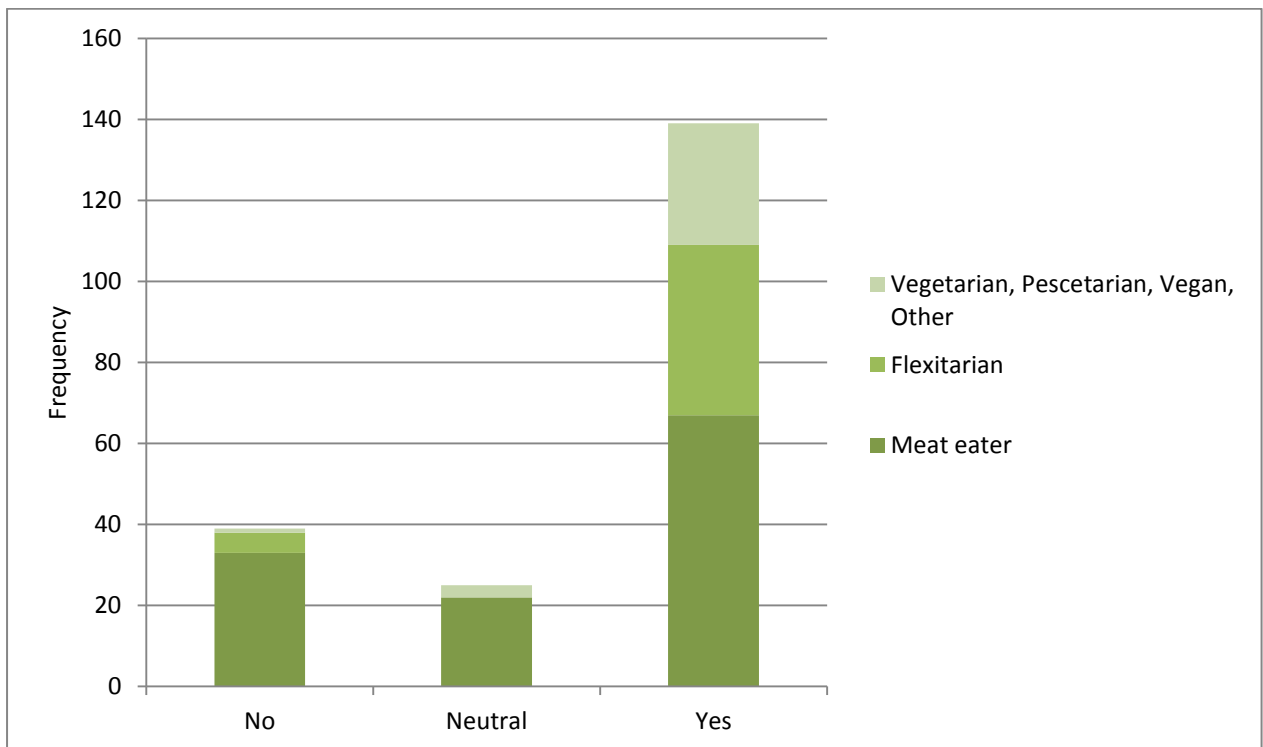
## Appendix D - Previously tried a meat substitute

Have you ever tried a meat substitute?



## Appendix E - Willingness to try a new meat substitute

Are you open to try a (new) meat substitute?



## Appendix F - Awareness environmental impact

*"Meat substitutes are better for the environment than meat."*

