

The motives, drivers and barriers towards the protein transition.

*“ A qualitative study about the motives, drivers and barriers for plant based protein in the Dutch food chain”*

**Radboud University**



**Master thesis**

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## **Preface**

Dear reader,

I would like to add a personal note prior to reading my master thesis. My name is Julia Stehouwer, master student in Strategic Management at the Radboud University. I am 24 years old and I live in Nijmegen. Before my master program, I did the bachelor's in Food & Business. Food is still my passion and discipline, therefore I decided to write my thesis concerning an issue in the food industry. Since I am concerned about the environment and I am a vegetarian, the protein transition was an interesting subject I wanted to learn more about. During my research I realized how important the protein transition is and I hope to inspire others to see the urgency of the protein transition as well.

I would like to thank everybody who helped me during the master thesis process. Special thanks to my friend, family and study mates for supporting me during the sometimes tough process, especially with the private circumstances. Moreover, I would like to thank Gerrit Willem Ziggers for providing feedback throughout the study, and the second examiner Peter Vaessen for providing feedback on my research proposal. Finally, I would like to thank all the respondents I have interviewed. It was interesting and knowledge-reaching to interview you.

Enjoy reading my thesis.

Kind regards,

Julia

## **Abstract**

In this qualitative study, the researcher examines the motives, drivers and barriers of the different stakeholders within the food chain in order to contribute to the protein transition. Within this deductive study, the effect of the motives on the drivers and barriers of the company to contribute to the protein transition, has been taken into account. The stakeholders which have been investigated are supermarkets, food wholesalers, meat producers, meat substitute producers, and a Dutch food law expert.

Prior research did not focus on the motives, drivers and barriers of the different stakeholders within the (Dutch) food chain concerning the protein transition. Based on the results of this research, it can be concluded that customer demand for meat, eating habits, and money are the most important barriers to contribute to the protein transition. Important drivers to contribute to the protein transition are demand for meat substitutes, the motives of a company and money.

*Keywords:* protein transition, food chain, drivers and barriers, motives, sustainability, stakeholders, meat (substitutes)

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## 1. Introduction

### 1.1 The role of protein transition in

The human population of the world is growing approximately 1-2% each year (United Nations, 2022). As a consequence of the increase in human population, the CO<sub>2</sub> emissions are increasing along with that (Adam, 2021). The significant increase of anthropogenic greenhouse gasses, such as CO<sub>2</sub>, leading to global warming and climate change (Yoro & Daramola, 2020). Climate change results in a decline in global agricultural output (Yoro & Daramola, 2020). In order to delay global warming, the human population has to decrease its CO<sub>2</sub> emissions (Crippa et al., 2021). Approximately 34% of the CO<sub>2</sub> emissions worldwide are caused by the food industry (Crippa et al., 2021), making the food industry one of the most polluting industries of today's time.

The last few years, a vast amount of research has been conducted concerning the reduction of CO<sub>2</sub> emissions in the food industry. Recent research of Sun et al (2022), showed that dietary change in high-income nations alone can lead to substantial double climate dividend. *“Meat and dairy are generally more resource-intensive to produce than plant-based foods, increasing pressure on land, water and the climate. Small dietary shifts-such as switching from beef to pork, or poultry to beans- can significantly reduce agricultural resource use and greenhouse gas (GHG) emissions.”* (World Resources Institute, 2016) On a global level, the production of beef is the major driver of agricultural resource use, as beef production is responsible for nearly half of greenhouse gas emissions from agricultural production (Ranganathan et al., in press).

#### *Transition in the food industry*

The food transition can be seen as the need to transition from the current unsustainable food system to a healthy, circular and resource-efficient paradigm (Kampers & Fresco, 2017). Sustainability issues concerning meat products and the change to meat free alternatives in the food transition is also known as the protein transition. The protein transition can be defined as: *“New processes to make high-quality proteins more readily available to humans either by producing animal feed solely from protein sources which are unavailable for humans, by turning plant proteins directly into a product that closely resembles real meat, or by partially substituting plant proteins for animal proteins.”* (Kampers & Fresco, 2017).

Meat replacement products based on plant proteins, also known as meat substitutes, are alternatives for meat. Other alternatives for meat are proteins from insects, seaweed or algae.

Even though the environmental impact of meat is known and meat substitutes are widely available for an appealing price, it doesn't mean that the population is willing to change their habits and diets (Askew, 2022). Several studies suggest that supermarkets use nudging strategies to stimulate the consumer to buy specific products. According to Smit & Van der Velden (2022), supermarkets play a big role in stimulating consumers to buy specific products. Moreover, Canadian research found that supermarkets do not use their sources to promote plant-based protein in the same way as they promote, for example, meat (Gravelly & Fraser, 2018). According to Berasetegi (2014), supermarkets prefer selling their own brand products over independent brands therefore they use several nudging strategies in order to stimulate their own brand sales. Supermarkets, thus, play an important role and are one of the key stakeholders in the protein transition.

#### *Role of government and consumers*

Other stakeholders within the food chain have also been studied in scientific literature concerning their responsibility and sustainability. According to Hung et al. (2016), consumers and other stakeholders found the government responsible for the healthiness of food. Nevertheless, according to Hirth et al. (2021), environmental changes in the food chain are consumer demand driven, while companies draw on the authority of scientific experts monitoring methods and standards to seek approval for (more) sustainability. This may help companies develop sustainability strategies against critics (Hirth et al., 2021).

As a result, the meat and meat substitute market is restructuring, and a lot of changes have been made in the meat and meat substitute market in the last few years. The meat processes are more efficient with fewer and larger parties (Barkema et al., 2001), while other more recent research showed that meat substitutes are nowadays cheaper in the Netherlands than meat products (Nijpjes et al., 2022).

### *Stakeholder theory in the food chain*

Since many stakeholders with different interests are involved in the food chain and the protein transition, stakeholder theory is used to select and analyze the most important stakeholders in this research about protein transition. Stakeholder theory, one must note, only charts the different stakeholders, but does not take into account the motivation of the stakeholders to make certain decisions (Mourkogiannis, 2014).

According to Wu et al. (2012), every stakeholder could delay or decline innovations which do not suit their interests. Pro-environmental attitude by upper management is strongly correlated with higher facility environmental management practices and pollution prevention. The environmental attitude of the board of the different stakeholders within the food chain might have a direct or indirect effect on the drivers and barriers to contribute to the protein transition. (Wu et al., 2012) Furthermore, according to Junsheng et al. (2020), employees' motivation to make environmentally friendly choices, has a positive and significant influence on the environmental behavior of the company, however, this research is about sustainability in general within the Malaysian Food Industry.

### *Motives of the stakeholders*

Due to the environmental impact of meat products and because of rapid changes in the food industry, a lot of research has been done related to the protein transition. However, drivers, motives and barriers of the stakeholders within the food chain to contribute or to decelerate the protein transition, has not been investigated comprehensively. In order to further explore these motives the self-determination theory (Deci & Ryan, 1985) will be used in this research as well. The lack of scientific knowledge about the stakeholders in an emerging industry of food and its protein transition, prompted the researcher to do a qualitative study on this topic. Besides that, this research could contribute to the CO<sub>2</sub> emission reduction derived from the protein transition in the food industry that the knowledge from this research should contribute to. Finally, this study is of potential interest to companies who are concerned with the protein transition.

## **1.2 Objective and research question**

The previous paragraph has shown the lack of knowledge in the industry concerned with protein transition and the role of its stakeholders. Palovitta (2021) also emphasizes the need for expanding the knowledge base on this topic, stating that it is important to do more research about the protein transition.

The objective of this study is to find out who are the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition, and to elaborate on the motives, drivers and barriers of these stakeholders that contribute or to decelerate the protein transition, in order to contribute to the existing literature around this topic, deliver insight to relevant policy makers and offer inspiration to other stakeholders in this industry to speed up the transition process.

Succeeding in reaching the objective, will lead to tighten the gap that is not investigated properly in the scientific literature: why the important stakeholders concerning the protein transition in the Dutch food chain do or do not contribute to the protein transition. Besides the scientific relevance for succeeding in reaching the objective, the practical implication will be that it will offer knowledge that policy makers can use to strengthen and underpin their policies, and to inspire stakeholders who are involved in the protein transition, within or outside the Netherlands. The inspiration of the ideas and opinions of the other stakeholders concerning the protein transition may encourage the stakeholder to strengthen their motives towards the protein transition.

The following research question will be answered in this thesis:

**Who are of the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition, and what are their motives, drivers and barriers to contribute or to decelerate the protein transition?**

In order to answer the main research question the following sub questions have been formulated:

- Who are the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition?
- What are the drivers and barriers for the different stakeholders to contribute to the protein transition?
- What type of motivation do the different stakeholders have in order to contribute or not to contribute to the protein transition?
- What effect does motivation have on the drivers and barriers to contribute to the protein transition?

### **1.3 Limitations**

For the protein transition it is crucial people around the whole globe contribute to the anticipation of future changes in the overall food system, in order to avoid creating additional emissions (Crippa et al., 2021). The first reason this research has its focus on the Netherlands is for practical implications. For the researcher it is more practical to recruit participants for interviews since the researcher is from the Netherlands and is familiar with the Dutch food industry. Moreover, as already explained earlier, between countries, there are cultural differences which affect the food habits and therefore the consumer behavior and the assortment in the supermarket (Palovitta, 2021), so every country needs to be researched separately. Furthermore, concerning the limited time while doing qualitative research, only a set amount of interviews will be conducted, which will be further discussed in the research methods in chapter 3. The researcher will interview a few, dominant stakeholders within the Dutch food chain. However, the end consumers are not within the scope of this research, even though they may be a dominant stakeholder. The dominance of specific stakeholders within the food chain will be explained in detail in the theoretical background and research methods.

## 1.4 Outline of the thesis

This research consists of six chapters, The following chapter, chapter two, explains the theoretical framework in which the three concepts, stakeholders, drivers & barriers and motives will be explored. Furthermore, the conceptual model and propositions are explained. In chapter three, the methodology is explained. In this chapter, the deductive qualitative research approach, with semi-structured interviews will be elaborated. Moreover, the sampling strategy, who will be interviewed, and what data analysis will be performed are explained. In chapter four the results of the interviews and additional desk research are described on the basis of three concepts, stakeholders, drivers & barriers and motives. In chapter five the discussion, with the theoretical and managerial implications, a critical reflection on the limitation of the research and directions for further research are elaborated. The conclusion is stated in the final chapter.

## 2. Theoretical background

This chapter contains a detailed elaboration of the concepts of ‘stakeholders’, ‘motives’, ‘drivers’ and ‘barriers’, followed by the analysis of the self-determination theory.

### 2.1 Stakeholders

As already mentioned in the introduction, the food chain consists of several stakeholders, with all its different interests. In order to identify the most relevant stakeholders for this research, the stakeholder theory will be used. Furthermore, with the stakeholder theory the different type of stakeholder can be found.

The stakeholder theory is one of the most known theory for stakeholder mapping. According to Freeman (1985) stakeholders could be seen as “any group or individual that can affect or is affected by an organization”. Figure 1 gives an overview of the most important stakeholder of a “large” organization.

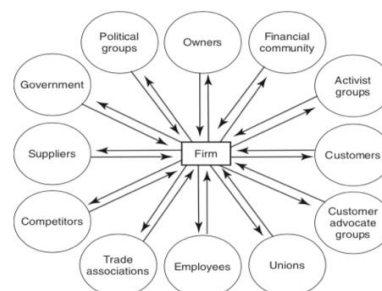


Figure 1: Different stakeholders firm (Freeman, 1985)

However, this thesis is not written about a (large) firm on itself, but about the food chain concerning meat (substitutes). The food chain is from soil, to plants, animals and humans. The food chain could be seen as the series of processes by which food is grown or produced, sold and eventually consumed (Hartikainen, 2005).

In this research the stakeholders who have been investigated are part of the Dutch food chain concerning meat (substitutes). Nevertheless, the food chain has to deal with the same type of stakeholders as a “large” organization (see figure 1: Different stakeholders firm for the stakeholders). Thus, stakeholders are parties that are part of the Dutch meat (substitute) food chain, or parties that can affect or are affected by the Dutch food chain concerning meat substitutes.

Now the different stakeholders for the Dutch food chain concerning meat (substitutes) have been charted, the important stakeholders for this research need to be selected. However, the stakeholder theory (Freeman, 1985) only charts the different stakeholders, but does not take the power of the different stakeholders into account (Mitchell et al., 1997b). Therefore, the view of Mitchell et al. (1997a) will be elaborated in order to find the most relevant stakeholders for this research.

According to Mitchell et al. (1997a), the stakeholder theory of Freeman lacks in stakeholder saliency. Therefore, they suggest evaluating the stakeholders in terms of power, legitimacy and urgency to identify salient stakeholders.

In order to understand which stakeholders should really count, managers must know which entities in the environment hold power and have the intent to impose their will upon the firm (Mitchell et al., 1997b). “Power and urgency must be attended to if managers are to serve the legal and moral interests of legitimate stakeholders” (Mitchell et al., 1997b). Stakeholders could be identified as dormant, discretionary, demanding, dominant, dangerous, dependent, definitive or non stakeholder (Mitchell et al., 1997, p.874).

Power is the relation among social actors whereby one social actor can get another to do something that he/she should otherwise would not have done (Mitchell et al., 1997a). In this study, this could be forcing another stakeholder to sell meat substitutes. Legitimacy is the generalized perception or assumption that an action of an entity is desirable or appropriate within the system of norms, values and beliefs (Mitchell et al., 1997a).

In this study this could be eating meat substitutes instead of meat as the new standard. Urgency is the degree of action which is immediately necessary (Mitchell et al., 1997a). In this study it could be a new regulation concerning meat in the Netherlands, for example, higher VAT rates on meat products.

Jawahar & Mclaughlin (2001) show that at any given organizational life cycle stage (start-up stage, emerging growth stage, mature stage, decline/transition stage), certain stakeholders will be more important than others because of their potential to satisfy critical organizational needs. The particular stakeholder or stakeholders with potential to meet those needs will be perceived as critical to organizational well-being, and their concerns and issues will be addressed proactively, or at least accommodated (Jawahar & Mclaughlin, 2001). Stakeholder strategies of defense and reaction will be used to deal with other stakeholders, depending on the extent to which the organization relies on those stakeholders. Resources and the financial and perceived value of the organization are important indicators. (Jawahar & Mclaughlin, 2001)

Power, legitimacy and urgency are useful in this research in order to tell something about the power and impact the different stakeholders have on the protein transition (Mitchell et al., 1997b). Jawahar & Mclaughlin (2001) suggest that the stage of the company and resources play an important role in determining important stakeholders. However, Jawahar & Mclaughlin (2001) do not take legitimacy into account. Since the protein transition and CO<sub>2</sub> emissions are closely linked (Crippa et al., 2021), legitimacy is also included in this study. Power, legitimacy, urgency, resources and lifecycle stage together, can determine important stakeholders in the protein transition. In paragraph 3.3, the interview selection of the stakeholders and motivation for these stakeholders will be explained.

## **2.2 Drivers and barriers in the food chain**

As already mentioned in the introduction, the meat (substitute) market is restructuring (Barkema et al., 2001). Several researchers suggest that the different stakeholders have different interests and power within the Dutch food chain concerning meat (substitutes) (Gravely & Fraser, 2018 & Berasetegi, 2014). Therefore, the different kinds of drivers and barriers will be charted in this paragraph.

Tziva et al. (2020) did research about the rise of meat substitutes in the Netherlands. According to Tziva et al. (2020) contrary to many other transitions, consumers and changing informal institutions were the driving forces of the plant based meat substitute industry in the Netherlands. Consumers were more environmentally aware and were willing to eat meat substitutes. As a result Dutch meat substitutes producers started to react to the growing demand for meat substitutes. Moreover, NGO's and the government started promoting the consumption of meat substitutes and debunked health hazards of meat substitutes. This all together were the drivers of the increasing meat substitute consumptions in the Netherlands (Tziva et al., 2020).

There were also other limited suggestions about the drivers and barriers concerning the protein transition. For example, De Moraes et al. (2022) did research about the drivers and barriers of sustainable protein in Brazil. However, Brazil is a developing country with a lot of cultural differences and other natural resources and therefore other drivers and barriers. For example, investment is an problem in Brazil; few people have an appetite to invest, whereas the Netherlands is the most competitive economy according to the WEF Competitiveness Index and one of the best countries for business investment in the world (*Competitiveness Index - Countries - List / Europe*, n.d.).

Other researches about the drivers and barriers concerning the protein were focused on the end consumers (Duarte et al., 2020 & Cheah et al., 2020). However, the drivers and barriers of the end consumer are not within the scope of this thesis. Moreover, Palovitta (2021) proposed a framework, in order to focus on micro-macro connections, integration of consumption-oriented and production-oriented perspectives of protein transition in Finland. She indicates that the protein transition probably differs per country due to cultural differences and logistics. However, this research is focused on drivers, barriers and motivation instead of her proposed framework since consumption-oriented perspectives are outside the discipline of strategic management.

In order to chart the drivers and barriers, the framework from Hoffman (2000, p.24) has been used. Hoffman (2000) made this framework in order to make sustainability easier applicable for businesses. Chkanikova & Mont (2012) elaborated on this model by addressing the drivers and barriers concerning sustainability within the food chain. This model is used since it is easily applicable and widely used in the literature.

However, this research is about the drivers and barriers to contribute to the protein transition. The protein transition contributes to sustainability in general, so the drivers and barriers are probably comparable. Nevertheless, the interviews will give more insides on the drivers and barriers for specific the protein transition.

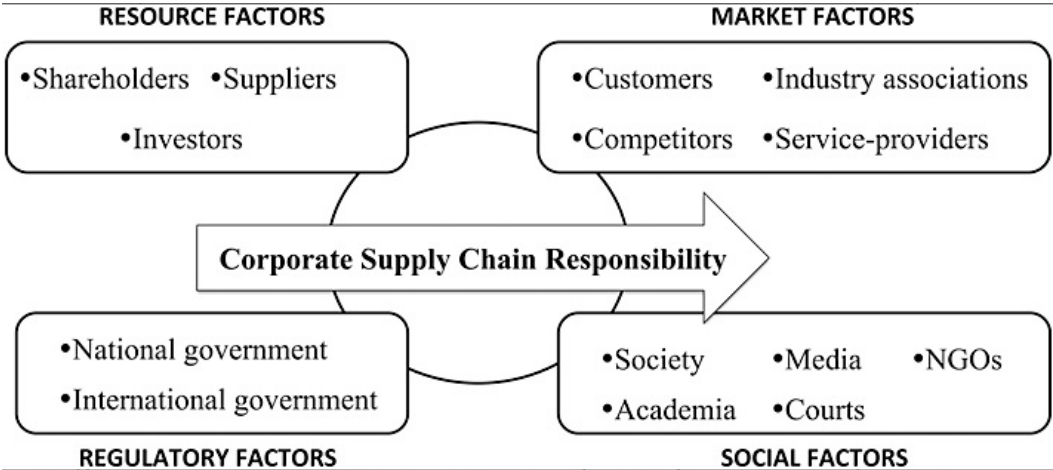


Figure 2: Drivers and barriers for corporate supply chain responsibility (Hoffman, 2000)

In the following paragraph the different factors resource, market, regulatory and social factors will be explained.

**Regulatory factors**

Regulatory factors could be seen as pressure from the government in order to contribute to the sustainability of the food chain (Chkanikova & Mont, 2012).

*Drivers*

The major drivers are pressure from government, realized in form of regulations and policies (Chkanikova & Mont, 2012). Another identified driver in the literature is the largely expectations of carbo management regulation. According to Hoes et al. (2019), “effective food policy should involve policy mixes that include several complementary policy instruments in a range of policy domain at international, national and regional governmental levels”. Policymakers can also play an important role to start initiatives that bring together relevant actors in order to stimulate valuable social and environmental concepts and ideas (Hoes et al., 2019).

### *Barriers*

The barriers are lack of governmental support and mixed and unclear messages from policy makers (Chkanikova & Mont, 2012). Moreover, the different regulations and rules per country makes it more complicated for companies (Chkanikova & Mont, 2012). Besides that, the addition of new policies may lead to incoherent, inconsistent policy mixes (Hoes. et al., 2019).

### **Resource factors**

Resource factors derive from shareholders, suppliers and investors pressure and are critical to a firm's business activities. They include both tangible resources (financial, material) and intangible assets (reputation, knowledge) (Chkanikova & Mont, 2012).

### *Drivers*

The drivers are demands for increasing financial returns and cutting operational costs (Chkanikova & Mont, 2012). Another important driver is reputation and brand name, which could be improved or damaged due to sustainability business tests published by stakeholders (Ytterhus et al., 1999).

### *Barriers*

The barriers are costs, whereby the return on investment seems to be poor for the sustainable option (BIO Intelligence Service, 2009). Moreover, lack of sufficient degree of expertise is a barrier as well (Hall, 2001, p. 112).

### **Market factors**

Market factors derive from customer, competitor, industrial association, and service-provider pressure. They include demands, competition, and norms set by these market actors (Chkanikova & Mont, 2012).

### *Drivers*

Drivers are demand from customers for greener and healthier food (Smith, 2007). Moreover, companies feel the pressure from customers to innovate (Smith, 2007). Besides that, the unequal power in the distribution chain is also a powerful driver to innovate (Smith, 2007). Another important driver are regulations and policies, which forces companies to be more sustainable (Hoffman, 2000).

### *Barriers*

An important barrier is the demand for cheap food by customers (Smith, 2007). Moreover, globalization makes the food chain complex to improve and monitor sustainability (Smith, 2007). Furthermore, the innovation process monitoring using key performance indicators, the use of patents/licensing to protect products and processes and the learning capacity at the end of the innovation process. The rewards and incentives for employees to promote innovation stagnate the (sustainable) innovation within the food chain (Fortuin & Omta, 2009). Moreover, innovation could have some unforeseen negative side effects which damage the interests of stakeholders, groups or individuals (Chkanikova & Mont, 2012).

### **Social factors**

Social factors derive from society, NGO, media, academia, and court pressure. They include values and expectations of these community actors (Chkanikova & Mont, 2012).

### *Drivers*

Important drivers are Critical consumer pressure in the form of food scares and product boycotts is an important driver for retailers to address sustainability issues (Ytterhus et al., 1999; Piacentini et al., 2000; Smith, 2007). Another driver for sustainability in retailing is active NGO movements and documentaries showing a negative aspect of the food chain (Chkanikova & Mont, 2012).

### *Barriers*

An important barrier is that the retail industry depends on the participation of consumers (ACR, 2010, p.6). Moreover, insufficient consumer interest and awareness of the sustainability issues of their purchases and consumptions (SDC, 2005). Especially in times of economic recessions, (ethical aware) consumers are not committed to sustainable issues (Anstey, 2009).

According to Hoffman (2000) & Chkanikova & Mont (2012), the drivers and barriers could be categorized in social, market, resource and regulation factors. Nevertheless, the interviews will show whether the drivers and barriers can really be divided into categories in this way, or whether some drivers and barriers can be divided into multiple categories.

### **2.3 Self-determination Theory**

As already mentioned in the introduction, drivers, motives and barriers of the stakeholders within the food chain to contribute or to decelerate the protein transition, has not been investigated comprehensively. In order to further explore these motives, the self-determination theory will be used.

According to the Self-Determination Theory (SDT), there is a distinction between different kinds of motivation based on the differences in goals or reasons to rise to an action. Intrinsic motivation could be seen as doing something because it is inherently interesting or enjoyable (Deci & Ryan, 1985). Extrinsic motivation could be seen as doing something because it leads to a separable outcome (Deci & Ryan, 1985). According to Frey and Osterloh (2001), extrinsic motivation serves to satisfy instrumental needs, which is indirectly money.

Intrinsic motivation “is the activity itself or the corresponding end goal satisfies a direct need in its own right” (Frey & Orsterloh, 2001). This can be divided into three forms of intrinsic motivation. First of all the activity itself could be a source of satisfaction, pleasure is derived from the activity itself. Moreover, it could be a matter of meeting standards for their own sake. If employees feel that material or procedural fairness standards are not being met, productivity will fall and the employees are willing to put personal advantage to one side in order to rectify the situation. The final form of intrinsic motivation comes from achieving a goal for one who has set herself, even though to process itself is tough: for example writing an essay or climbing a mountain.

Intrinsic and extrinsic motivation go hand in hand, which could lead to the “crowding out effect”, which could be interpreted as: when we are offered an award for completing an activity we lose an intrinsic desire to perform that task (Gagne, 2015). Which means that there is a trade-off between intrinsic and extrinsic motivation. The “right” intrinsic motivation is hard to create, but is very important for firms to serve the objectives of a firm (Frey & Orsterloh, 2001).

The self determination theory is about motivation in general. However, there is also research conducted about motivation concerning sustainability. Wu et al. (2012) suggests that when the attitude of the board of a company is pro-environmental, it has a positive effect on the pollution prevention of the company. However, there could be several reasons why the board is environmentally aware. The awareness could come from regulatory and competitive pressures (extrinsic motivation) or internal factors: increase their competitiveness, environmental performance (intrinsic motivation). However, external factors, especially policy pressures have a bigger impact since companies are forced to be (more) environmentally aware (Wu et al., 2012). Junsheng et al. (2020) did research about the effect of the motivation of the individual employees to contribute to the CO2 emissions reduction of the company. They conclude that the intrinsic motivation of the employees have a positive effect on the CO2 emissions reduction on the company.

Thus, according to Wu et al (2012), extrinsic motivation has a higher impact on the CO2 reduction of the company. In contrast, intrinsic motivation has an effect on the CO2 emissions reduction (Junsheng et al., 2020). Nevertheless, it seems probable that motivation has an impact on the CO2 reduction of companies. Through the use of interviews the type of motivation, and the effect of motivation, to or not to contribute to the protein transition will be investigated.

## 2.4 Conceptual model

Based on the findings in the theoretical framework, a conceptual model has been conducted as shown in figure 3. The model aims to answer the research question: *Who are of the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition, and what are their motives, drivers and barriers to contribute or to decelerate the protein transition?*

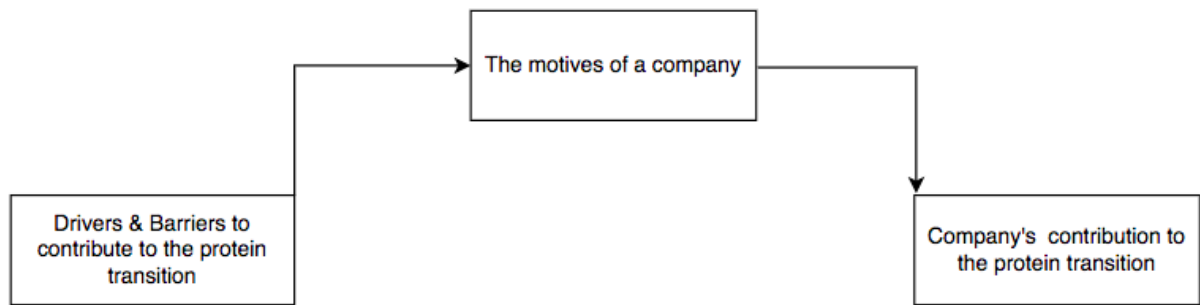


Figure 3: Conceptual model drivers and barriers of plant based protein within the food chain.

The dependent variable in the conceptual model is the company's contribution to the protein transition, as contributing or not contributing to the protein transition is the central theme of the research that needs to be explained. The contribution depends on the motives of the firm, which is the mediator in the conceptual model. The motives of the company presumably determine how the drivers and barriers within the Dutch food chain - the independent variable in this conceptual model - will be seen by the company and how the company then reacts with its motives to the drivers and barriers.

Based on the theoretical framework, presumably the drivers & barriers for the stakeholders to contribute to the protein transition have an effect on the firm's contribution to the protein transition. However, the expectation is that the motives of the firm determine how a company deals and sees the different drivers and barriers. Nevertheless, it might be the case that the drivers & barriers do not have an effect on the motives of a company. In order to test this expectation, propositions have been conducted.

Based on the research question and the conceptual model, the following proposition will be tested with this research:

**p0:** The motives of a company do not have an effect on how a company reacts to the drivers and barriers to contribute to the protein transition within the food chain.

**p1:** The motives of a company do have an effect on how a company reacts to the drivers and barriers to contribute to the protein transition within the food chain.

### **3. Methodology**

In this chapter the chosen research method will be explained. Furthermore, the data collection and analysis will be discussed. Besides that, the limitations and the research ethics will be clarified.

#### **3.1 Research method**

A qualitative research approach, consisting of semi-structured interviews has been chosen for this thesis, since it helps getting deeper insights into a specific field, business or industry by transferring the complex situations into the context of the underlying theory (Eisenhardt & Graebner, 2007). In this study, the objective is to find out who are the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition, and to elaborate on the motives, drivers and barriers of the most relevant stakeholders within the Dutch food chain to contribute or to decelerate the protein transition. Since motives contain a high degree of subjective perception from the various stakeholders, this qualitative study was able to identify these motives in an interview setting (Eisenhardt & Graebner, 2007).

The interviews had a semi-structured design, which has several advantages. First of all, this method has greater control over respondent selection and depth, context and flexibility within the interview (Cassell & Symon, 2004).

However, since the interviews were semi-structured, the interviewer asked the same questions to all the respondents that gave the interviewer greater control over the framework and outcome of the interviews. As a result, the reliability of the data collection increased (Bleijenbergh, 2015).

The respondents were allowed to give their opinion and the interviewer was able to ask follow-up questions to gather more information about a subject or opinion. The researcher was able to steer toward preferential outcome, in terms of depth and information that can yield (Walker, 1985).

Hence, as can be concluded from these advantages, semi-structured interviews were useful for this research since the researcher had greater control over the outcome of the interviews, and therefore specific information about motives, drivers and barriers concerning the protein transition within the Dutch food chain could be collected. Furthermore, in-depth knowledge could be obtained by asking specific questions during the interview. Several semi-structured interviews were conducted with relevant stakeholders within the food chain in order to get more insights in the motives, drivers and barriers of the stakeholders to contribute or to decelerate to the protein transition. In this way, the different motives, drivers and barriers per stakeholder were compared and analyzed.

This research aims to find out who are the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition, and to elaborate on the motives, drivers and barriers of the most relevant stakeholders within the Dutch food chain to contribute or to decelerate the protein transition. To do so, Bleijenbergh (2015) mentions that the research objective should be approached with a clearly defined theoretical framework. Therefore, using existing literature for this evaluation is the usual approach, resulting in a deductive approach.

Before the interviews were conducted, the operationalization was made in order to code the interviews ('Appendix 8.1' presents the operationalization). The updated version by Chkanikova & Mont (2012) of the framework "drivers and barriers for corporate supply chain responsibility" (Hoffman, 2000) has been used for the operationalization. This framework was used since the four categories of Hoffman (2000) (resource, market, regulatory and social factory) connected well with this study and were easy to convert into interview questions. The interviews got transcribed, and patterns were found through coding based on the indicators and dimensions used, as presented in appendix 8.1. All the answers to the interview questions and other statements the respondents gave are labeled in one of the categories of the updated version by Chkanikova & Mont (2012) of the framework "drivers and barriers for corporate supply chain responsibility" (Hoffman, 2000). All the interview data could be divided into the four categories. The updated version by Chkanikova & Mont (2012) of the framework "drivers and barriers for corporate supply chain responsibility" (Hoffman, 2000) were easily applicable and covered all the data. Thus, the approach of this qualitative research is deductive (Myers & Myers, 2019a). The quotes and codes from the empirically gathered data are discussed in chapter four.

As already mentioned, the researcher used this framework since the research was about implementing sustainability in the food chain, and the protein transition could be seen as a part of implementing sustainability in the food chain. In this way, the inductive approach was not applicable since there is already comparable research about the protein transition and the drivers and barriers of stakeholders concerning sustainability within the food chain available. However, the amount of research whereby the motives were included in the study was limited.

### **3.2 Data collection**

The data were collected through semi-structured interviews, in order to get insights in the motives, drivers and barriers of the different stakeholders. For these semi-structured interviews, an interview guideline was constructed with the interview questions, which can be found in appendix 8.2. The interview guideline had the aim to make sure the interviews process had a predetermined path, whereby all the relevant questions were asked, but since the interviews were semi-structured, the researcher could adapt the questions to the individual participant and the course of the interview (Flink, 2007). Furthermore, several rules for qualitative research were followed in this research (Eisenhardt, 1989). First, the “24-hour rule” was followed, which states that within 24 hours after the interview, detailed notes and impressions should be written down, since the impressions are still top of mind. The second rule that has been followed was that all data must be included in the research. Finally, impressions from the researcher during or after the interview should be added, but separate from the respondent’s information - a rule that was followed as well. The last rule was done by using memo’s in Atlas.ti, the coding programme which was used in this research.

#### *Additional desk research*

Due to the difficulties with finding suitable candidates, the researcher decided to perform additional desk research with the aim of triangulation, in order to deliver a more reliable research (Heale & Forbes, 2013). One of the respondents gave that as a suggestion, since in the annual reports of companies can be read a lot about the mission and vision of the company and the CO2 emissions and the protein assortment products over the years.

The mission statements of several companies with an assortment containing only meat and or meat substitutes were analyzed. The desk research was focused on meat (substitute) brands, since it is easier to compare the assortment over the years and to check if there is a relation between the mission statement of the company and their contribution to the protein transition. The reasoning behind analyzing the mission of companies is that a company's mission says something about the purpose, values and goals of the company (Bart, 1997). Bartkus and Glassman (2007) found that there is a positive relation among environmental strengths and mission content. Whereby they are stating that relatively few firms mention the environment in their mission statement, but when firms do include a reference to the environment they have more environmental strengths (Bartkus & Glassman, 2007). Thus, companies who only have meat substitutes or both, probably have a more green mission than companies who only have meat products.

### **3.3 Interview selection**

In this paragraph the motivation of the chosen stakeholders for this research will be explained.

#### *Supermarkets and wholesalers*

The supplier side in this research are the suppliers of the meat (substitutes) to the end-consumers which are supermarkets and wholesalers in the Dutch food chain. Small shops such as deli counters, mini markets and marketplaces were excluded in this research.

Supermarkets and food wholesalers were included due to their power and urgency (Mitchell et al., 1997a), but also due to their life cycle stage and resources (Jawahar & McLaughlin, 2001).

Power, resources, urgency - they are the intermediary between the consumers and suppliers and decide what the assortment is where the consumers can choose from (Smit & Van der Velden 2022). If they decide to make a change in the assortment, all the other stakeholders have to deal with the consequences immediately, as long as the changes are in line with the regulations. Supermarkets have their own brands and a very wide assortment of products (Berasetegi, 2014). Supermarkets and wholesalers have limited financial damage when one supplier does not want to deliver to them compared to suppliers (resources). Moreover, they are big companies who are not new to the market (life cycle stage).

On the side of the suppliers, there is a difference between the owners of a shop, for example the supermarket manager of the local Albert Heijn, a supermarket chain and the head office of a certain supermarket chain. In this research, the researcher wanted to include both the “strategic” and “operational” side of a supermarket, in order to get more insight to which extent supermarket managers have the choice to adapt the meat (substitute) assortment to anticipate local preferences (Kloosterman et al., 2021). However, due to difficulties with finding respondents, the supermarket head office was not included in this study. The consequences will be further explained in the discussion.

### *Governance*

Governance could play a big role in the food transition (Kampers & Fresco, 2017). With regulations (resources) the government can force or stimulate sustainable choices (power) at any given time (urgency) (Hoes et al., 2019). Moreover, with making (food) laws the government determines the standard (legitimacy) (Chkanikova & Mont, 2012). Therefore, the researcher involved the stakeholder governance concerning food law and regulations (NVWA or another party who is involved with regulations and laws concerning food in the Dutch food chain) in this research. This way, more information about the motives, drivers and barriers of certain non-profit organizations and how they can stimulate the stakeholders to contribute to the protein transition could be obtained.

### *Meat and meat substitute manufacturers*

Meat and meat substitute manufacturers could be seen as the suppliers of the supermarkets and food wholesalers which manufacture meat (substitutes). Meat and meat substitute producers/brands can decide to stop selling meat or to extend or to focus on the assortment of meat substitutes (power). The norms and values decide if their actions are appropriate (legitimacy).

The lifecycle stage of a company and resources differ per company. However, since this research is about the protein transition, it was valuable to add the stakeholders who make the products concerned with the protein transition: meat and meat substitutes.

### *Stakeholder who were excluded in this research*

Consumers were not included in this research, since research about the drivers and barriers of consumers to buy, or not to buy, plant based food is already widely available. Moreover, with the scope of this research aimed at the drivers and barriers in relation to the direct suppliers of supermarket chains and supermarket chains itself - with influence of regulations - the farmers, NGOs and other parties were excluded.

The interviewees were approached via the network of the researcher. Since the researcher has a background in the Fast Moving Consumer Goods, she used her professional and personal network to recruit participants. The researcher approached potential participants via LinkedIn and e-mail.

### **3.4 Data analysis**

In order to analyze the data, the interviews were firstly transcribed using the recordings of the interviews. Afterwards, coding was used in order to find the different types of drivers and barriers per stakeholder. For the coding, the researcher used the software program ATLAS.t, and the codings were based on the tree structure which was made beforehand (see appendix 8.1). The tree structure is based on the framework for “Drivers and barriers for corporate supply chain responsibility” (Hoffman, 2000), complemented by (Chkanikova & Mont, 2012). While coding, the researcher asked fellow students to check the coding process, to improve the quality of the analysis. Finally, the data were analyzed and the results were defined.

For the additional desk research, the researcher checked the mission of the several meat (substitute) companies and companies who have both meat products and meat substitute products. It was checked whether the mission has an element which says something about the contribution to the environment, the population or society. According to Bartus & Glassman (2007), when firms do include a reference to the environment they have more environmental strengths, with the extra deskresearch is checked if this is applicable for the companies concerning the protein transition. The analysis can be found in Appendix 8.3.

### **3.4 Limitations**

Several limitations come up when using semi-structured interviews to collect data. The information gained is filtered through the views of the interviewees and not collected in a natural setting but in a designated place (Creswell, 2014). Moreover, the sample was chosen by the researcher, which probably affected the sample as a result of biases of the researcher (Creswell, 2014). The researcher tried to overcome biases in interpreting the outcomes by selecting interviewees she did not know. However, it was still possible to bias the responses (Creswell, 2014) and to receive social acceptable responses (Myers & Myers, 2019b). By specifying the aim of the research and the promise to process the data anonymously, the researcher has tried to keep errors in the research design and analysis low (Myers & Myers, 2019b).

Since the interview has been designed and done by humans, and the researchers' biases are inevitable, ensuring objectivity is difficult within qualitative research (Myers & Myers, 2019b). By doing the additional desk research triangulation was obtained (Heale & Forbes, 2013), and hereby the findings obtained with the small amount of interviews were confirmed, enhancing the validity and credibility (Heale & Forbes, 2013). However, the information was still filtered since the respondents were probably not completely objective (Creswell, 2014), which is also applicable for the extra desk research (Creswell, 2014), as the mission and vision of a company is something the company wants to emanate.

### **3.5 Research ethics**

While doing semi-structured interviews, there were some important research ethics that had to be taken into account. First of all, the researcher had to comply with the general principle of academic research. Moreover, the researcher has followed the principles of the Radboud University code of conduct on Scientific Practices.

Furthermore, since people and companies, and therefore sensitive data, were involved in this research, it was important to respect the research ethics. In order to address the research ethics, the researcher has communicated the aim of the research by approaching participants. Besides that, the privacy of the interviewees and companies were guaranteed. In addition, the researcher asked for permission to record the interview and to publish the results anonymously before they start the interview. Besides that, the researcher mentioned that when the interviewee did not feel comfortable or did not want to continue the interview, they were

allowed to exit the interview whenever they want (Bleijenbergh, 2015). To conclude, the researcher was honest about the findings and method of the research (Myers & Myers, 2019b).

#### **4. Results**

In this chapter the results collected by means of interviews will be discussed. The most important findings per subject will be shown and analyzed. Moreover, the findings of the additional desk research will be clarified. Finally the sub questions will be answered.

##### **4.1 Introduction of the stakeholders**

The researcher conducted five interviews with five different stakeholders. In this paragraph a short introduction about the different stakeholders will be given. The names and companies are not mentioned since the interviews contain business-sensitive information.

*Wholesaler:* The first respondent was a category manager of a wholesaler who is active in the Netherlands.

*Supermarket:* The second respondent was a supermarket manager of a Dutch supermarket chain. The supermarket manager “owns” three supermarkets, in three different areas in terms of demographic characteristics. The supermarket manager explains: “The supermarket is located in a relatively large city; this is also the largest store of the three. The second supermarket is located in a village and is an important supermarket for the villages around it and the third supermarket is located in a residential area of a fairly normal city, in this residential area many families live. At the village supermarket you have customers from all age groups and in the city there are mainly a lot of young people, I estimate that most customers are between 20-35. The students and the hard-working people.” (Supermarket, personal communication, July 4, 2022)

*Meat producer:* The third respondent was a product manager of a Dutch meat producer who also makes meat substitutes. The company is Dutch, but exports to other countries as well.

*Meat substitute producer:* The fourth respondent was a marketing employee of a meat substitute company. The company sells worldwide and has only meat substitutes in its assortment.

*Dutch food law expert:* The last interview was with an advisor, quality assurance and allergic expert. She also has given the course food law at the HAN University of Applied Science.

## **4.2 Assortment meat (substitutes) & demand**

In this paragraph, the interview outcomes concerning the assortment of the interviewed stakeholders will be explained. Moreover, there will be an elaboration on the demand for the different kinds of products.

The wholesaler and supermarket are both stating that they have a wide assortment meat and meat substitutes. “I sometimes see products come along that I think, well, what do you do with that? But if there is a demand for those products we have them in our assortment.” (Wholesaler, personal communication, July 12, 2022) “In terms of meat and meat substitutes, we have a wide range. We have the products fresh, frozen as semi-finished products but ready to serve. So that they can be used immediately.” (Wholesaler, personal communication, July 12, 2022) “Yes especially in the last two years you notice a shift. The supply of meat substitutes has increased and you can see this in the sales. (Supermarket, personal communication, July 4, 2022)

The wholesaler and supermarket both said the assortment is based on the demand. The demand differs per region and they adapt the assortment to the regional disparities. “In certain regions there is more demand for certain products, but this is mainly with online orders. For example, in Amsterdam you have a lot of vegan restaurants that are customers of ours. And in the provincial small areas even more meat is eaten so then basically more meat is purchased there.” (Wholesaler, personal communication, July 12, 2022)

“But I also get some freedom myself, for example, I always have some regional products in all the stores, such as cherries from the farmer. And of course you have those special offer shelves in the store, for example at the beginning of an aisle. I am free in what I put there. I know, for example, that in the city, so in my branch in X, there is more demand for barista oat milk, but in rural X I don't have to buy that much, they just buy regular cow milk.” (Supermarket, personal communication, July 4, 2022)

“It sounds very stereotypical but in the city I sell proportionally more meat substitutes than in the village. Although I must say that in the village supermarket there are also many tourists, so I sell many baguettes in the summer as well. People often go barbecuing on the campsite and you can see that in the sales.” (Supermarket, personal communication, July 4,2022)

Based on these outcomes, it can be said that the wholesaler and supermarket determine their assortment based on the customer demand, which is a market factor according to Hoffman (2000) and could be seen as extrinsic motivation according to Frey & Orsterloh (2001).

The meat substitute producer has a small assortment, 100% plant based products. “We actually only sell completely plant-based products. We really don't have any meat products. We started with the X burger, a meat substitute burger and we also have a sausage. We really focus on that vegetarian, vegetable market and we do Research and Development for new meat substitutes in order to make everything. We think that meat no longer fits in our current society, not even in the Netherlands.” (Meat substitute producer, personal communication, July 5, 2022) The meat substitute producer made the deliberate choice to produce and sell only meat substitutes, in order to contribute to the protein transition. Their assortment is based on their motives, which could be seen as intrinsic motivation according to (Frey & Orsterloh, 2001).

The meat substitute producer has experienced more demand in recent years, as a result the company has grown. “We are originally not Dutch. But now available in the Netherlands, we are also growing more and more. We're actually on sale at other companies as well. Supermarkets, hospitality industry sell us. So we do experience real growth.” (Meat substitute producer, personal communication, July 5, 2022) The growing demand for meat substitutes is a market factor according to (Hoffman, 2000) and could be seen as extrinsic motivation according to Frey & Orsterloh (2001). However, it seems that the meat substitute producer has intrinsic and extrinsic motivation for their 100% plant based assortment, which can result in the “crowding out effect”, which could be interpreted as: when we are offered an award for completing an activity, in this case demand and money, we lose an intrinsic desire to perform that task (Gagne, 2015).

The meat producer has a large range of meat products, but also an assortment of meat substitutes. “We have many products but most contain meat, think of those tapas trays, fresh and canned meats. We have a large assortment of what we sell under different brands, we have some own brands and the better known A brands. We also have meal sauces and several products. We have a vegetarian and some I believe even a vegan variant of some meat products. And we also have meal components in our portfolio.” (Meat producer, personal communication, June 30, 2022)

The portfolio of the meat producer is based on the demand for the products, which is a market factor according to Hoffman (2000) and could be seen as extrinsic motivation according to Frey & Orsterloh (2001) “We started making meat and meat substitutes because we saw that there was demand for them. Meat substitutes are also attractive products in terms of margins and, of course, the CO<sub>2</sub> impact on the environment.” (Meat producer, personal communication, June 30, 2022)

The respondent stated that the company noticed the growing demand for meat substitutes in the Netherlands compared to the other countries they deliver to. “In the Netherlands the demand for meat substitutes is somewhat greater, vegetable burgers for example. In southern Europe you see that a lot of meat and fish is still eaten, just look at the menu in Greece, where I was recently, almost every dish has meat. And if it doesn't contain meat, it's not replaced by a meat substitute and I think that happens more in the Netherlands.” (Meat producer, personal communication, June 30, 2022)

To conclude, based on outcomes of the interviews combined with the theory findings it seems like demand (market factor) is the reason to sell meat. The meat substitute producer made the choice to sell only meat substitutes based on their motives to contribute to the protein transition. However, they experience a growing demand for their products as well, thus market factors can be the reason for the meat substitute producer to sell as well nowadays.

#### **4.3 Contribution to the protein transition**

An outcome of the interviews is that all the parties are aware of the urge to contribute to sustainability in general. “Supermarket chain X is very busy with sustainability, because the food industry is so polluting it is important that we set a good example. But also the customer expects this more and more from us.” (Supermarket, personal communication, July 4, 2022)

Moreover, all the interviewed stakeholders try to contribute to the protein transition with plant based products in their assortment. “Those vega products, it comes more and more. You notice more and more that it is on the rise. But we also do something with it as X. We organize the X inspiration day. Customers can come and be inspired by chefs who, for example, make delicious dishes using only vegetables or meat substitutes or whatever.” (Wholesaler, personal communication, July 12, 2022)

“We have several vegetarian products and sometimes even a vegan version.” (Meat producer, personal communication, June 30, 2022)

However, only the meat substitute producer feels the urgency to actively contribute to the protein transition by only providing meat substitutes. “We actually think it is very important that the transition is made. Meat is really a big burden on the environment and actually our future. The future is plant-based as far as we are concerned. Yes and we think that meat no longer fits in our current society, not even in the Netherlands. We actually want to make the world a little better by focusing on plant-based products and therefore the protein transition.” (Meat substitute producer, personal communication, July 5, 2022) Which could be a result of the intrinsic motivation of the employees to contribute to the protein transition, which has a positive effect on the CO<sub>2</sub> emissions reduction on the company according to Junsheng et al. (2020).

Based on outcomes of the interviews combined with the theory findings, it seems like the meat substitute producer only feels the urgency to actively contribute to the protein transition. The other interviewed stakeholders do take actions to improve the sustainability of the company, but they do not take actions which immediately contribute to the protein transition. They leave the choice to the customer whether or not to contribute to the protein transition.

#### **4.4 Barriers to contribute to the protein transition**

All the parties state that money, which could be seen as a resource factor (Hoffman, 2000) and demand for meat products which could be seen as a market factor (Hoffman, 2000), are important barriers to contribute to the protein transition. Demand and money together could be seen as extrinsic motivation according to Frey and Osterloh (2001). “Of course we get demand for meat. The customers are very eager to buy meat, so therefore we sell meat. (Wholesaler, personal communication, July 12, 2022) “Yes, it's all about money. So if you say we don't sell meat anymore, then you lose customers.” (Wholesaler, personal communication, July 12, 2022)

The meat producer says that the main reason why they have meat products in their assortment but also the reason why they have meat substitute products in their assortment is the demand for the products, which could be seen as a market factor (Hoffman, 2000). "I think the fact that we earn money from meat products is in itself a major barrier. Look, we can say we're going to stop tomorrow, but the demand will still be there and our customers will just buy their meat somewhere else, you know? We started making meat and meat substitutes because we saw that there was more demand for them. Meat substitutes are also attractive products in terms of margins and, of course, the co2 impact on the environment." (Meat producer, personal communication, June 30, 2022) According to the meat substitute producer the meat industry is the barrier for the protein transition. "So what we find is that the meat industry is large and present. On multiple levels of course. In the market, but also at the government level. However, we do see that more and more is being done. Especially younger generations find meat substitutes appealing. So we can also reach those quite easily. For example, through our marketing campaigns and things. But yes we don't really have a barrier I think. Well, we don't have the biggest market yet. But it's growing and I think that's a good first step." (Meat substitute producer, personal communication, July 5, 2022)

The supermarket did not really give an answer based on the protein transition, but more on sustainability in the food chain in general. "I think the whole chain makes it complicated. We can separate waste very neatly, etc., but you don't know what happens on the plantations and factories in faraway countries. Each country has its own rules and not all of them live up to those rules. Basically, sustainability only costs money, or at least that's the image it has, I think that's a barrier. And often good initiatives end up being greenwash practices, so my confidence in them is often not very high." (Supermarket, personal communication, July 4, 2022)

Thus, money could be seen as a resource factor according to Hoffman (2000) and demand which could be seen as a market factor according to Hoffman (2000) are the most important barriers for the interviewed stakeholders to contribute to the protein transition. Demand could be a result of the fact that consumers are used to their diets with meat products (Askew, 2022). Together, demand and money are factors which lead to extrinsic motivation according to Frey and Osterloh (2001).

#### **4.5 Most important stakeholder within the Dutch food chain**

All the stakeholders mentioned the end-consumers as the most important stakeholder since all the stakeholders respond to the customer demand, which could be seen as a market factor (Hoffman, 2000). "In our case, I think it's the buyers. They expect certain products from us and preferably as fast as possible, they would like to receive their order the same day at a competitive price. So yes we do have to live up to these expectations in order not to lose customers." (Wholesaler, personal communication, July 12, 2022). "Yes I would say the consumer. Actually every company responds to that anyway. The consumer is influenced of course, by price and information and the supply of course. In the supermarket and catering industry they determine what is offered and at what price. I regularly go out to eat and when you see what vegetarian food is on offer it is often not very attractive and relatively expensive." (Meat producer, personal communication, June 30, 2022)

"I find that is difficult to answer. Not necessarily one stakeholder, but just in general, that meat still has a very large share in the consumption of the Dutch, for example. I think that's the hardest thing for us. The customer needs to make the switch to meat substitutes." (Meat substitute producer, personal communication, July 5, 2022) According to Mitchell et al. (1997a), this indicates that the (end)consumer is an important stakeholder concerning power.

However, the supermarket manager said that the supermarkets are powerful as well in determining the range of products from which the customer can choose. "Supermarkets determine the range from which consumers can choose, so indirectly supermarkets can encourage consumers to make certain choices." (Supermarket, personal communication, July 4, 2022) This was already suggested in the literature by Smit & Van der Velden (2022) Moreover, the meat producer mentioned the power of the supermarket as well.

"Supermarkets have the power to determine the price they will pay for your products. The same applies in the supermarket, although there is a large selection there nowadays, I'm talking about meat substitutes. The supermarket chains buy products from us, but here too you noticed that the supermarkets have power over stakeholders. The supermarket chains want X number of products, delivered at a certain price, and in that respect we have a difficult negotiating position. You want to deliver to the supermarket chains since they are big customers with large orders, but the margins on orders from these powerful supermarket chains are often very small." This indicates that the supermarket is an important stakeholder concerning power and urgency, according to Mitchell et al. (1997a)

Thus, the end consumer and supermarket are determined as powerful stakeholders within the Dutch food chain concerning power, based on the stakeholder theory of Mitchell et al. (1997a) The end consume and supermarket are powerful since they get another stakeholder, in this case the meat (substitute) producers doing something they otherwise would not have done: Supermarkets determine the assortment and the have the power and resources (Jawahar & Mclaughlin, 2001) to decide to pay the suppliers less change the assortment and shelf plan. The supermarkets are influenced by end consumers - at the end they decide if they buy the products.

#### **4.6 Future plans in order to contribute to the protein transition**

The interviewed stakeholders expect to expand their assortment of plant based protein in the future. “You do see that meat substitutes are on sale more and more often compared to a few years ago. X now also has its own brand of meat substitutes. I expect that this will only increase in the coming years, but I can't think of any concrete targets. Most of it will have to come from the head office.” (Supermarket, personal communication, July 4, 2022)

However, it seems like the reason to do so varies per stakeholder. The wholesaler and meat substitute producer would like to inspire people to contribute to the protein transition. “Especially the inspiration sessions that I mentioned earlier. Informing customers what's possible. But also sharing more plant-based recipes and more meat substitutes in the assortment.” (Wholesaler, personal communication, July 12, 2022) “We do really want to grow. But we do want to do it responsibly. We really do stick to our vegan assortment, so really no meat or other animal based product. So that especially and yes inspire, get even more people to plant-based.” (Meat substitute producer, personal communication, July 5, 2022) Inspiring others could be seen as intrinsic motivation, according to Frey & Orsterloh (2001).

While the meat producer does not really see the urgency to contribute to the protein transition, since that has a negative impact on the profitability of the company. Urgency is the degree of action which is immediately necessary according to Mitchell et al. (1997a) . “For the profitability and future of the company, we still have to anticipate the changes that are slowly taking place. If consumers start eating less meat because of the environment or if, for example, higher taxes are introduced, we really do have to do something about our business plan to remain profitable in the future.” (Meat producer, personal communication, June 30, 2022) Profitability could be seen as a resource factor according to Freeman (2000) and money could be seen as extrinsic motivation according to Frey & Orsterloh (2001).

To conclude, an important barrier for making future plans to contribute to the protein transition are resource factors (Hoffman, 2000), which is a result of not seeing the urgency of the protein transition. The wholesaler and meat substitute producer want to inspire, and it seems like they see more urgency to contribute, which probably has a link with the motives of the company.

#### **4.7 Regulations**

The regulations concerning meat are stricter than the regulations concerning meat substitutes. “There's not a lot of regulation on our products yet. The regulations are stricter for animal products of course.” (Meat substitute producer, personal communication, July 5, 2022)

However, especially the differences in regulations per country is something which makes the regulations complicated according to the stakeholders. “The laws and regulations can put a lot of pressure on things, yes. I'm not completely at home with the rules, but from what I gather within our company, the laws and regulations don't always make it easy to become more sustainable. And what is also difficult for us as a company is that the laws and regulations are so different in each country. Look, it's different in America than it is here in the Netherlands, which is logic. But Germany is just around the corner and you notice that they look at certain things so differently than the Netherlands, even though they are both European Union countries.” (Meat producer, personal communication, June 30, 2022) “If you look at America, the laws are very different. There you have much more room to do what you want, in my opinion. And yes in the European Union, of course, it's getting stricter, with the green deal.” (Meat substitute producer, personal communication, July 5, 2022)

According to the Dutch food law expert, regulatory factors (Hoffman, 2000) can have a negative and positive impact on the protein transition. “The advantage is that you can encourage companies with legislation to promote certain choices. You often see that for most companies profitability is still important. Of course, they have all kinds of marketing tricks to seduce consumers. Consumers themselves sometimes come up with initiatives but you can also quite easily create demand.” (Dutch food law expert, personal communication, June 28, 2022)

However regulations also lead to fraud, moving of business to other countries and it takes a while before a regulation is implemented. “The disadvantage is that you always have ways to circumvent the law, with legal actions such as going to a market where the rule does not apply or illegally by selling products on the black market or through clever tricks. Another disadvantage is the time between the idea of a certain legislation and the actual implication, which can take years, making the impact visible only later.” (Dutch food law expert, personal communication, June 28, 2022)

Thus, regulatory factors (Hoffman, 2000) can have a negative and positive impact on the protein transition. An important advantage is that you can force companies to make certain choices. However regulations also lead to fraud, moving of business to other countries and it takes a while before a regulation is implemented.

#### **4.8 Percentage revenue from meat-substitutes**

Only the meat substitute producer had a concrete answer to the question of how many percent of the turnover comes from meat substitutes. “We actually only sell completely plant-based products. We really don't have any meat products.” (Meat substitute producer, personal communication, July 5, 2022).

However, all respondents indicated that sales have increased significantly in recent years, which shows that the meat and meat substitute market is restructuring, as already apparent from the literature (Barkema et al., 2001). “Yes I don't have the exact numbers, I think it is a very small part of the total revenue. Less than 5%. I don't really know. We have seen an increase in recent years. I can't tell you the exact numbers.” (Wholesaler, personal communication, July 12, 2022)

“Especially in the past two years I noticed a shift. The supply of meat substitutes has increased and this is also reflected in the sales. I think sales of meat and fish have decreased by about 5% and sales of meat substitutes have increased by about 20-30% in the same two years.” (Supermarket, personal communication, July 4, 2022) “Between 2 and 4 percent? It's difficult to say. We mainly deliver vegetarian products in the Netherlands and we see an enormous growth in these products. But a large proportion of our products also go abroad. We also have all kinds of sauces and soups that do not contain meat, these are not meat substitutes or vegetarian products or conscious choice or something like that but that's just the way the product is, think of the cheese sauce. That is of our global sales. If you look at just the Dutch market it is a bit higher, around 7%, but that is a wild guess.” (Meat producer, personal communication, June 30, 2022)

Based on the responses, it can be said that the percentage revenue from the meat substitutes is still very small, which indicates that even though the meat and meat substitute market is restructuring, meat is still an important product for the companies' revenue.

#### **4.9 How does the protein transition get more priority within the organization**

Due to the (foreign) demand for meat products, which is a market factor according to (Hoffman, 2000), it is hard for companies to prioritize the decrease of the meat sales and the increase of the meat substitute sales. “If the demand for meat products would decrease. And I'm talking mainly about the foreign market. In my opinion, the Netherlands is a forerunner in the production of meat substitutes. If the demand from abroad were to increase, it would be a good extrinsic motivation for us to stop selling meat, so to speak.” (Meat producer, June 30, 2022) Resource factors and market factors could be seen as extrinsic motivation according to Frey & Orsterloh (2001).

According to Wu et al. (2012), every stakeholder could delay or decline innovations which do not suit their interests, which is confirmed by the interviewed stakeholders. The companies are afraid reducing or deleting their meat assortment has a negative impact on the financial outcomes of a company and or customer satisfaction, that are resource factors and market factors according to Hoffman 2000).

“If I decide not to put any more meat on the shelves tomorrow, I will have the head office on my back and my customers will not be happy either. As long as it is normal to eat meat and whether that is every day or once a week, the supermarkets will still sell it. Only the Ekoplaza, I believe, does not sell meat, but of course that's not your average supermarket.” (Supermarket, personal communication, July 4, 2022)

Moreover, the mission and board of the company are important barriers to contribute to the protein transition according to the interviewed wholesaler and meat producer, which could be seen as the intrinsic motivation according to Frey & Orsterloh (2001) “On the one hand a piece of demand. Demand from the customer, but also a bit of mission and vision from the management of X. But to be honest, I don't think they're very busy with that. We are very busy with sustainability, the use of electric vehicles for supplies, solar panels and collaborations with other partners to supply our customers more efficiently. But I do miss the protein transition in higher priority for the time being. Maybe in the longer term but not for now and if it will come I don't know. You just see Hospitality and meat and fish are inseparable for the time being. As long as there is demand for a nice piece of meat, we will continue to supply it. If cultured meat or suchlike comes on the market and there is a demand for it, we will of course include it in our range. But I absolutely cannot see us stopping selling meat. That is still unthinkable in my eyes. Then you just have a very different vision of your own business.” (Wholesaler, personal communication, July 12, 2022)

The statement of the wholesaler is in line with the statement of Junsheng et al. (2020), who are stating that when employees who are unmotivated to make environmentally friendly choices, it has a negative impact on the environmental impact of the company. This is confirmed by the meat producer. “Of course we are already working on it ourselves, but that is something the management and R&D etc. are working on. I am not really involved in that, I provide the input they ask for and I make suggestions, but otherwise I am more operationally busy with my brand for the Dutch market, not on a strategic level.” (Meat producer, personal communication, June 30, 2022)

Furthermore, social factors (Hoffman, 2000) can stimulate the protein transition. “Meat is often portrayed badly by the media and organizations such as 'Wakker dier Nederland'.” (Meat producer, personal communication, June 30, 2022) However, social factors are only mentioned once by only one respondent. Which indicates that social parties as the news and NGO’s don’t have much power and urgency according to Mitchell et al. (1997a)

To conclude, the market and resource factors could be seen as extrinsic motivation according to Frey & Orsterloh (2001). The motives of the board and the company concerning sustainability and the protein transition could be seen as the intrinsic motivation to contribute to the protein transition according to (Frey & Orsterloh, 2001). The market factors, resource factors and motives of the board and company together determine how the company identifies the urgency to contribute to the protein transition. Which is in line with the conceptual model and propositions which are conducted.

#### **4.10 Results additional desk research**

The mission and vision of a company is an indicator about the way they do business and their future perspective, according to Bartus & Glassman (2007), and confirmed by the interviewed wholesaler and meat producer. Therefore, the mission statements of several meat producers of meat substitutes were investigated, and from that it could be observed that the substitutes producer companies have in general a more green mission than the meat producer companies.

The investigated meat substitute companies only have meat substitutes in their assortment. Moreover, they are relatively young (maximal 62 years old), which could be the result of the fact that the negative results of the meat on the environment and the nurture shortage has only received attention in the recent years (Crippa et al., 2021).

8 out of 10 meat substitute companies have a clear “green” mission statement, which means that the mission has an element which says something about the contribution to the environment, the population or society. The other two companies who do not explicitly have a “green” mission do have an indirect green mission. The first indirect green mission is to become the greatest “butcher”, which means they want to contribute to the environment by being the best vegetarian butcher, whereby they contribute to the environment, thus indirectly have a “green” mission. The second indirect “green” mission is the mission statement: pure, honest, delicious which could be seen as contributing to the society as well by delivering fair products.

However, that the companies have a green mission does not mean that their actual goal is not to make money, which is an example of the crowding out effect (Gagne, 2015). The reward, in this case the money, the stakeholders lose the intrinsic desire to perform their motives and tasks (the mission). The green mission could also be a marketing trick to mislead consumers whereby the company smartly responds to consumer demand, whereby the aim of the company is driven by the demand for a product (Frey & Orsterloh, 2001).

In the mission statements of the meat companies, high quality, responsible and climate are frequently used. Moreover, most of the meat companies started to make meat substitutes versions of their meat products in the last few years by starting a new brand in their portfolio, or just expanding their assortment with a meat substitute. This could be demand driven due to customer demand for a plant based version of the meat, that can be seen as a market factor according to Freeman (2000). But it could also be the result of the (changing) motives of a company to contribute to the protein transition (Frey & Orsterloh, 2001).

It was checked whether the mission has an element which says something about the contribution to the environment, the population or society. The table of investigated companies can be found in appendix 8.3. The exact motivation to do the business the way they are doing is not traceable by desk research. However, based on the differences between the mission of meat substitute companies and meat companies, there seems to be a link between a company's assortment of meat (substitutes) and their motives expressed in the mission statements.

#### **4.11 Answers to the sub questions**

In this paragraph the following sub questions will be answered based on the analysis which has been conducted in chapter 4:

- Who are the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition?
- What are the drivers and barriers for the different stakeholders to contribute to the protein transition?
- What type of motivation do the different stakeholders have in order to contribute or not to contribute to the protein transition?
- What effect does motivation have on the drivers and barriers to contribute to the protein transition?

*What are the drivers and barriers for the different stakeholders to contribute to the protein transition?*

#### **Drivers**

In general, all the stakeholders respond to the demand, which is a market factor of the company according to Freeman (2000). According to Frey & Orsterloh (2001), demand could be seen as an extrinsic motivator. As a result, demand for meat substitutes could be seen as a driver for the companies to contribute to the protein transition. However, for most of the stakeholders the demand for meat products, as a result of consumer habits, is more attractive to respond to than the demand for meat substitutes. An exception is the meat substitute producer, it seems like they feel more urgency (Mitchell et al. 1997a) to contribute to the protein transition.

A link between the mission statement of the meat substitute company and the contribution to the protein transition have been detected during the interviews. The additional research has strengthened this finding. All the investigated meat substitute companies have a “green” mission, which could be seen as the motivation to contribute to the protein transition. Table 1 gives an overview of the different drivers which have been found.

Stakeholder	Drivers
Wholesaler	<ul style="list-style-type: none"> <li>- Demand for meat substitutes.</li> <li>- Inspire customers to use more meat substitutes.</li> </ul>
Supermarket	<ul style="list-style-type: none"> <li>- Demand for meat substitutes.</li> <li>- They want to be a role model as a powerful stakeholder.</li> </ul>
Meat producer	<ul style="list-style-type: none"> <li>- Meat substitutes could also be attractive products in terms of margins, environment and demand.</li> <li>- Profitability and the future of the company concerning the changes that are slowly taking place.</li> <li>- Demand for meat substitutes.</li> </ul>
Meat substitute producer	<ul style="list-style-type: none"> <li>- Motives of the company, which are also expressed through their mission statement.</li> <li>- Demand for meat substitute products.</li> </ul>
Government	<ul style="list-style-type: none"> <li>- With regulations you can encourage companies to make “green” choices.</li> </ul>

*Table 1: Drivers of the different stakeholders within the Dutch food chain to contribute to the protein transition.*

## **Barriers**

In general, all stakeholders respond to the demand. The demand for meat products is the biggest barrier to contribute to the protein transition. The stakeholders who sell meat are afraid to lose profit and or customers when they decide to sell less or no more meat due to the high demand of meat products as a result of the eating habits of (Dutch) consumers. Another barrier is that it takes a while before regulations in order to stimulate the stakeholders to contribute to the protein transition are implemented. And of course, there are always ways to circumvent the law.

Finally, a link between the mission statement of the meat company and the contribution to the protein transition has been detected during the interviews. The additional research has strengthened this finding. All the investigated meat companies do not have an explicit “green” mission like the meat substitute companies have. The mission statement and motives of meat companies could be seen as a barrier to contribute to the protein transition. Table 2 gives an overview of the different drivers which have been found.

Stakeholder	Barriers
Wholesaler	<ul style="list-style-type: none"> <li>- Demand for meat products (eating habits consumers and preferences cooks).</li> <li>- Afraid to lose profit and customers.</li> <li>- Mission and vision and priorities of the company’s board.</li> </ul>
Supermarket	<ul style="list-style-type: none"> <li>- Demand for meat products (eating habits consumers).</li> <li>- Afraid to lose profit and customers.</li> <li>- The food chain is complicated, difficult to check whether suppliers are good for the environment and employees.</li> </ul>
Meat producer	<ul style="list-style-type: none"> <li>- Demand for meat.</li> <li>- Profitability of the company.</li> <li>- Mission and vision of the company.</li> </ul>
Meat substitute producer	<ul style="list-style-type: none"> <li>- Consumer behavior (demand for meat).</li> <li>- Size of the meat industry.</li> </ul>
Government	<ul style="list-style-type: none"> <li>- There are always ways to circumvent the law. With legal actions such as going to a market where the rule does not apply or illegally by selling products on the black market or through clever tricks.</li> <li>- Implementing laws and regulations are time consuming.</li> </ul>

*Table 2: Barriers of the different stakeholders within the Dutch food chain to contribute to the protein transition.*

*- What type of motivation do the different stakeholders have in order to contribute or not to contribute to the protein transition?*

As already mentioned in paragraph 2.3 Self-determination theory, distinction is made between different kinds of motivation based on the differences in goals or reasons to rise to an action. Intrinsic motivation could be seen as doing something because it is inherently interesting or enjoyable (Deci & Ryan, 1985). Extrinsic motivation could be seen as doing something because it leads to a separable outcome (Deci & Ryan, 1985). According to Frey and Osterloh (2001), extrinsic motivation serves to satisfy instrumental needs, which is indirectly money. Intrinsic motivation “is the activity itself or the corresponding end goal satisfies a direct need in its own right” (Frey & Osterloh, 2001)

As already explained in the previous paragraph, demand for meat products is the biggest barrier that meat selling companies restrains to contribute to the protein transition, except for the meat substitutes companies. There is a reason why meat substitutes producers feel more urgency to contribute to the protein transition than meat producers. A link between the mission statement of a company and the contribution to the protein transition have been detected during the interviews and have been further investigated by doing additional deskresearch. All the invested meat substitute companies have a “green” mission, while the meat companies missions were not as “green”. Thus, the mission statement and motives of a company could be seen as the driver to overcome the barriers in order to contribute to the protein transition.

*-What effect does motivation have on the drivers and barriers to contribute to the protein transition?*

The motives of a company have a mediating effect on the drivers and barriers of a company to contribute to the protein transition. The motives of a company determine how companies see and react to the drivers and barriers, which is in line with the proposition which has been conducted beforehand. So, based on the results of this research p0 can be rejected and p1 can be accepted.

**p0:** The motives of a company do not have an effect on how a company reacts to the drivers and barriers to contribute to the protein transition within the food chain.

**p1:** The motives of a company do have an effect on how a company reacts to the drivers and barriers to contribute to the protein transition within the food chain.

## **5 Discussion**

In this chapter the scientific and practical implications are explained. Moreover, there is an elaboration on the limitations of the research, and suggestions for future research will be given.

### **5.1 Scientific implications**

Multiple scientific implications can be identified within this study. First, this research is an extension of the study by Freeman (2000) and Chkanikova & Mont (2012) concerning sustainability within the food chain. This study shows the drivers and barriers to contribute to the protein transition are in line with the drivers and barriers for sustainability within the food chain in general (Chkanikova & Mont, 2012). This framework has been used as a footing to conduct the coding of the interviews, with the idea that other factors could be seen as drivers and barriers. However, the framework covered all the given drivers and barriers explained by the framework. Moreover, this research showed the effect the motives have on the company's contribution to the protein transition, which was a gap in the literature.

Another important note is that this research is based on relatively old models Hofmann (2000) and Chkanikova & Mont (2012). Since the food industry is changing rapidly, and the effects of meat consumption have recently been discovered (Crippa et al., 2021), a probable scientific implication is that investigating the protein transition cannot be addressed by a model which has been conducted in a period whereby the effects of meat consumption were not considered to be this big. Moreover, the rapid growth of the internet has allowed the stakeholders involved to create a framework of informing and thinking that is beyond the scope of the models that have been used, implying that there is a need for a framework that is suiting the requirements of explaining today's big issues like meat consumption at the current scale.

Nevertheless, even though the researcher was objective, she expected, based on the desk research, that the power of the regulatory system would affect the respondents more. Most of the respondents said that they just follow the rules and do not perceive it as a burden - sometimes only as inconsistent, especially within Europe. The result is that all the parties just respond to the demand of their customers.

## **5.2 Practical implications**

The practical implications deriving from the study are widespread. These implications could be split up in several groups. First of all, the respondents of this study were very curious about the opinions and implications of the other interviews. They were all interested in receiving the results of the research in order to learn and get inspired by the analysis of the other respondents.

The outcome of this research could inspire others in the field to do more research concerning drivers and barriers of the different stakeholders within the (Dutch) food chain. Even though a lot of research on the food transition in general and the protein transition and the potential effects on the environment have been conducted, a small amount of research has been collected concerning the drivers and barriers of different stakeholders to contribute to the protein transition. Especially in the Netherlands, a frontrunner in terms of meat substitutes, limited research has been conducted. This study could be seen as useful for the theory concerning the protein transition and could inspire others within the field to continue building on this study (subject).

Moreover, for organizations who are considering implementing strategies or policies in order to contribute to the protein transition it can be important to gather knowledge about the drivers, barriers and motives of the different stakeholders and the effects on their contribution to the protein transition. Those can be used in order to inform and convince the board and or investors of the company of the tangible and intangible advantages to contribute to the protein transition.

## **5.3 Limitations**

One of the main limitations of this research is the amount of respondents. Only one supermarket, one wholesaler, one meat substitute brand, one meat producer and one Dutch food law expert have been interviewed. Moreover, supermarket headquarters did not want to cooperate with this research, so only a supermarket manager was interviewed. Headquarters of a supermarket might give other perspectives and information.

The researcher approached a lot of potential respondents, but most of them did not reply or are saying they do not want to talk about the protein transition (especially the meat producers) or they are approached all the time since the subject is upcoming (especially the meat substitute producers).

Second, the respondents were not able to answer all the questions. Especially the question “Do you have to pay money for a spot on the shelf at a wholesaler or supermarket? If so, does the price differ between meat products and meat substitutes?” was hard to answer for the respondents because this was not part of their role or they did not want to provide the information. The answers might give different views and new information concerning the drivers and barriers to contribute to the protein transition.

Third, the inconsistency of the chosen respondents. The researcher did not make a selection on for example the size of the company, year of founding or gender. As long as the potential respondents were working for a company who did belong to the target group and his or her function seemed to be interesting and valuable for the research, the respondents were suitable for this research.

Fourth, is the one time collecting data. This study did not study the mission and assortment over the years. In order to find out, a longitudinal research is needed to measure the potential changes over the years.

The last limitation is the limited number of stakeholders who have been investigated in this research.

## **5.4 Future research**

The limitations of this research provide opportunities for future research. The researcher has various suggestions for future research.

First of all, even though the reason to not interview NGOs and other interest groups in this research has been explained, it might give valuable information to take all the stakeholders concerning the protein transition into account in future research. Mapping all the stakeholders and their motives, drivers and barriers gives a complete overview of the state of affairs, and the distribution of power within the (Dutch) food chain concerning the protein transition.

Moreover, since the eating habits of the end consumers have an impact on the demand for products, it could be interesting to conduct this research in another country in order to get insights of the effect of eating habits on the protein transition.

Furthermore, since demand for meat is the main barrier to contribute to the protein transition, it is valuable to conduct more research concerning the consumer perspective on the protein transition.

Research on the customer side preferably has a quantitative design that allows for representative results over the whole population. Whereas this research offers first insights into the protein transition thanks to a qualitative design, the largest gap of information lies on the customer side, and the industry of meat consumption - with its large scope of interests - would benefit most from insights that represent a vast amount of respondents, for example to convince higher up policy makers.

## 6. Conclusion

The purpose of this thesis was to find out who are the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition, and to elaborate on the motives, drivers and barriers of these stakeholders that contribute or to decelerate the protein transition. The research question is as follows: *“Who are of the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition, and what are their motives, drivers and barriers to contribute or to decelerate the protein transition?”*

Deductive qualitative research has been carried out, conducting five semi-structured interviews with relevant stakeholders. By means of a deductive analysis, it was found that demand for meat products is the most important barrier to contribute to the protein transition. However, the motives of a company determine how a company deals with the barriers. In addition, it is suggested by the additional desk research that the green mission statement has a link with the company’s contribution to the protein transition.

The power of the supermarket and wholesalers has an influence on the assortment the producers are allowed to deliver and the consumers can choose from. Holding on to customer demand could be a resistor in the protein transition. An important driver is that they determine the range of products the customer can choose from, so they can steer the customer in what they buy. However, the demand for meat products is an important barrier. They are afraid to lose profit and customers if they do not provide a (wide) range of meat products. Nevertheless, they have a growing assortment of meat substitutes every year, thanks to demand from customers, even though the supermarkets and wholesalers stating that they are working on their sustainability in general rather than specific on contributing to the protein transition.

The wholesalers and supermarkets determine the assortment and the price they pay to the suppliers and the price the end consumer has to pay for the different kinds of products. The end consumers determine the demand for the products, and all stakeholders are responding to that.

Furthermore, the influence of the regulation on the protein transition has been investigated. The results of the effect of regulations were diverse. Regulations could force companies to make certain choices. However, strict regulations could also lead to fraud or relocating business to other countries as long as the regulations are not on European/global level. The fact that the rules are different in every country, even in the European country makes the regulations complicated for stakeholders to follow. Another barrier is that it takes a while before an idea for regulation is implemented which causes delays.

Thus, the most relevant stakeholders within the Dutch food chain that are concerned with the protein transition are the supermarkets/wholesalers, regulators and end consumers.

To conclude, this thesis suggests that the motives of a company have an influence on how a company interprets the drivers and barriers to contribution, and as a result determines the company's contribution to the protein transition.

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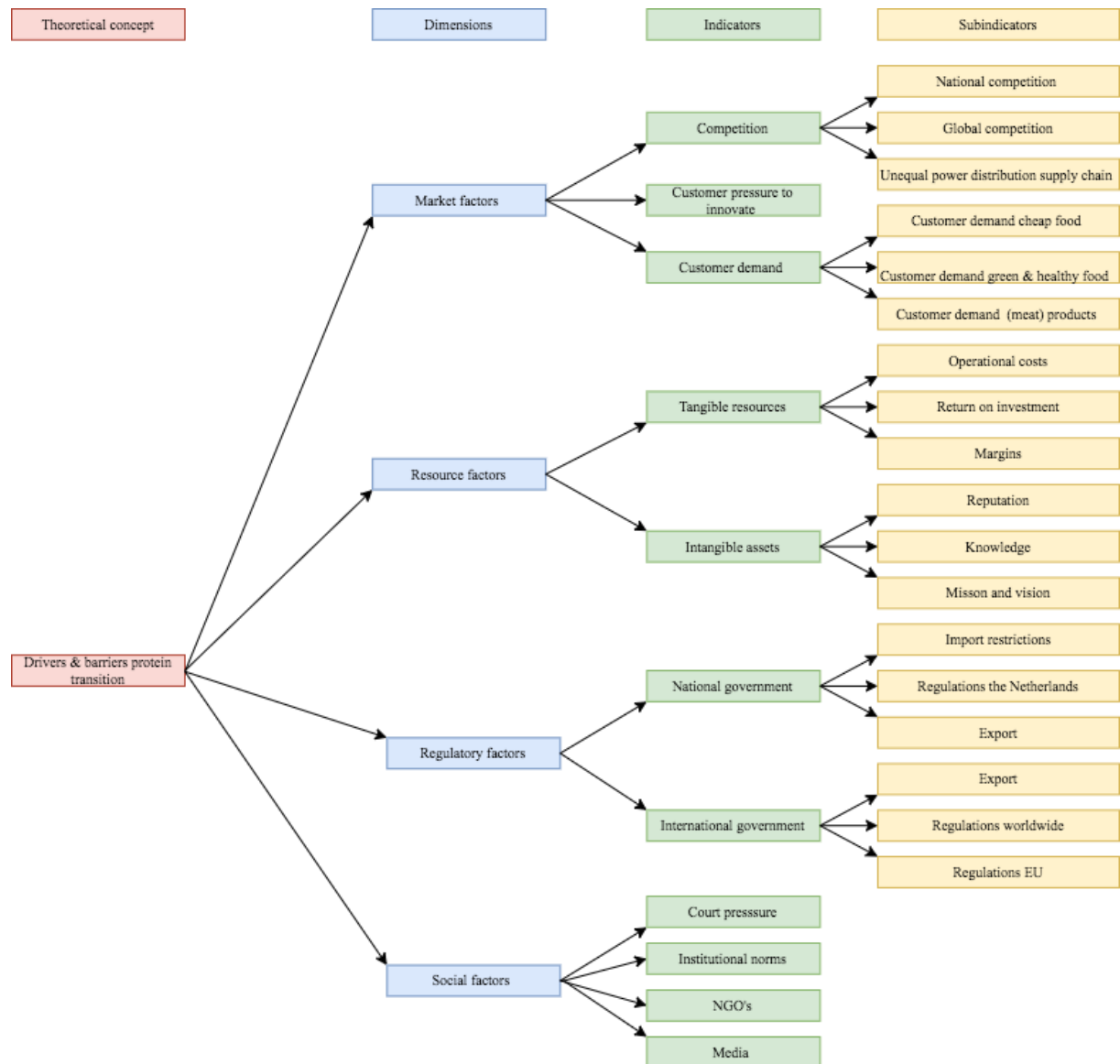
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## 8. Appendixes

### 8.1 Tree structure



## 8.2 interview Questions

All the interviews were held in Dutch, therefore all the questions were in Dutch as well. The interviews were, as mentioned before, semi-structured. Thus, the questions and the information concerning the research could be seen as a guidance for the interview.

*Introduction and information study.*

Beste..... Bedankt dat u mee wilt doen met mijn interview voor een onderzoek wat ik uitvoer ter behoeve van mijn master scriptie. In dit onderzoek kijk ik naar de drijfveren en barrières van de verschillende stakeholders om bij te dragen bij de eiwittransitie. De eiwittransitie is de omschakeling van dierlijke (vlees)producten naar plantaardige eiwitproducten. Denk hierbij aan vleesvervangers zoals vegetarische wok stukjes of bijvoorbeeld groenteburgers ter vervanging van vlees.

De resultaten worden anoniem verwerkt. Mocht u hier in geïnteresseerd zijn dan kan ik de uitslagen van het onderzoek met u delen. Ik wil u vragen om zo eerlijk mogelijk te antwoorden. Indien u ergens geen antwoord op weet of u het interview vroegtijdig wilt beëindigen geef dit dan vooral aan.

*General questions:*

- Wat is uw functie binnen het bedrijf X?
- Welke producten maakt/levert of verkoopt uw organisatie die impact hebben op de eiwittransitie?
- Wat is voor het bedrijf een belangrijke drijfveer om bij te dragen aan de eiwittransitie?
- Wat is voor het bedrijf een belangrijke barrière om bij te dragen aan de eiwittransitie?
- Ervaart uw bedrijf druk vanuit andere stakeholders om bepaalde keuzes wel of niet te maken? Welke stakeholders zijn dit? En welke richting proberen ze het bedrijf op te sturen?
- Wat is volgens u de stakeholders met de meeste macht binnen de voedselketen en waaruit blijkt dat?
- Welke plannen heeft het bedrijf de komende vijf jaar om de ecologische voetdruk te verminderen op het gebied van dierlijke eiwitten?
- Hoe ervaart uw bedrijf de wet en regelgeving rondom de eiwittransitie? (Zorgt dit voor een versnelde eiwittransitie of maken (extra) regels het lastiger om bij te dragen aan de eiwittransitie?)

- Hoeveel procent van de omzet van het bedrijf is afkomstig uit vleesvervangers?
- Hoe zou binnen uw organisatie de eiwittransitie een hogere prioriteit kunnen krijgen?

*Specific question for Dutch Food law expert:*

- Welke aanpassingen zijn er recent geweest op het gebied van wet- en regelgeving en wat is het gemeten effect hiervan?

*Specific questions for supermarket/wholesaler*

- Is uw supermarket /groothandel een franchise of onderdeel van de keten zelf?
- In hoeverre bent u vrij in het bepalen van het assortiment vlees en vleesvervangers?
- Opvolgende vraag: Zijn er regionale verschillen ?
- Heeft u een verandering in de vraag (vlees)vervangers gemerkt de afgelopen jaren en zo ja, waar blijkt dat uit?
- Wat is de verhouding verkopen vleesvervangers ten opzichten van vlees?
- Welk product is voor jullie, wat betreft marges, aantrekkelijker om te verkopen?
- Moeten fabrikanten geld betalen voor een plek in het schap? Zo ja, verschilt de prijs tussen vleesproducten en vleesvervangers?

*Specific questions for meat (substitute) producent:*

- Welk product is voor jullie, wat betreft marges, aantrekkelijker om te verkopen? Vlees of vleesvervangers?
- Aan welke bedrijven levert u uw producten? Merkt u verschil tussen de vraag naar uw product tussen verschillende bedrijven? Waar komt dit verschil in vraag, volgens jullie, vandaan?
- Moeten jullie geld betalen een plek in het schap? Zo ja, verschilt de prijs tussen vleesproducten en vleesvervangers?

### 8.3 Investigated companies additional desk research

Company	Mission	Founded	Owner
<i>meat substitutes</i>			
Vegetarische slager	To become the greatest “butcher” (De Vegetarische Slager, n.d.).	2012	Unilever (2018)
Valess	100 % taste and aim for 0% waste (Valess, n.d.).	2005	FrieslandCampina
Garden Gourmet	We want to inspire everyone to vary more with dishes without meat. Eating more vegetable proteins and less animal proteins is good for you and for the environment. (Garden Gourmet, n.d.).	1986	Nestlé (2017)
The veggie lover	To convince as many people as possible that vegetarian and organic food can also be enormously delicious, in addition to being healthy and meat-free. We also want to steer the consumption of food in the right direction: towards a better world. Our own world (The Veggielovers, n.d.).	2019	Future Food Group (founded in 2019), part of Jan Zandbergen Group
Greenforce	Helping everyone lead a healthy, sustainable lifestyle with our vegan, animal-free and delicious products to help secure the food supply (Greenforce, n.d.).	2020	Greenforce
Vivera	Life is better when you eat less meat (Vivera, n.d.).	1990	JBS (2021)
Rootzz of Nature	Pure, honest, delicious (Rootzz of Nature, n.d.).	unknown	unknown

Quorn	To reduce meat consumption by developing delicious meat-free products (Quorn, n.d.).	1960	Monde Nissin Corporation (2015)
Beyond Meat	We believe there is a better way to protect our future (Beyond Meat, n.d.).	2009	several shareholders
The Weed Burger	Challenge the taking culture, nature the giving culture and create a future where all life thrives (The Weed Burger, n.d.).	2012	Live Kindly Collective (2021)
<i>Meat products</i>			
Ter Beke Fresh Food group <i>(Meat and ready meals)</i>	Putting delicious quality products on every dining table (Ter Beke, n.d.).	1948	Listed since 1986
Vion Food Group <i>(several meat products)</i>	To anticipate needs, to fulfill those needs and wherever possible to exceed them by providing high-quality food products, ingredients and healthcare products made from natural materials of agricultural origin (Vion Food Group, n.d.).	1930	SBT is the only shareholder
Jan Zandbergen <i>(mainly meat but also meat substitutes)</i>	To provide honest, high quality products that combine animal protein with plant protein and to demonstrate sound leadership in the food industry (De Jan Zandbergen Group, n.d.).	1927	The Jan Zandbergen Group
Van drie Group <i>(products derived from cows)</i>	Create maximum customer value through our unique chain while taking responsibility for our people and our impact on animals and climate (Van Drie Group, n.d.)	1960	Shareholders

Stegeman <i>(mainly meat but also meat substitutes)</i>	Because meat can be different (Stegeman, n.d.).	1858	Sigma Food Group (2015), since 1980 several owners
Unox <i>(Mainly meat but also meat substitutes)</i>	Dutch stamppot should always be delicious, now and in the future (Unox, n.d.).	1937	Unilever