



BACHELOR THESIS

# Persuading Dutch students to change behaviour towards the purchase of sustainable food products

Presenting social norms through specific message frames to influence Dutch students' feeling of moral obligation and intention to buy

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## **Abstract**

This study aimed to gain a better understanding of how Dutch students can be persuaded to adapt more sustainable eating behaviour. This namely has positive impacts on both the environment and people's personal health. The effects of different types of social norms and message frames on student's feeling of moral obligation, their attitude and intention to buy vegetarian food products were investigated. Eight versions of a campaign poster containing different combinations of the independent variables were created. In order to test the eight hypotheses, quantitative research was conducted. An online questionnaire with 33 statements was used to measure students' levels of perceived behavioural control, willingness to comply, regulatory focus, their attitude, feeling of moral obligation and intention to buy. The sample size consisted of 161 students. These responses were collected through random sampling. To determine the questionnaire's validity, a factor analysis was conducted. The outcome was that instead of six, five components were measured. Moreover, 15 statements were excluded because of low factor loadings. Reliability was measured through Cronbach's alpha. The lowest Cronbach's alpha was measured for perceived behavioural control (.659), and the highest for intention to buy (.895). The data was analysed by using multivariate analysis of variance (MANOVA). Based on the results of this analysis, a gain frame combined with an injunctive social norm was found most effective for increasing feeling of moral obligation. Descriptive social norms without a certain message frame seemed most appropriate to increase intention to buy. However, these results were not significant. Practical implications of this research include the absence of manipulation check questions, a small sample size and the lack of an elaborate pre-test.

**Key words:** eating behaviour, sustainable, social norm, message frame, theory of planned behaviour

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## 1. Introduction

Persuading consumers to alter their food eating habits is standing on scientists and politicians agenda for over a long time. Consumers need to eat more sustainable food products, in order to reduce CO<sub>2</sub> emissions. More specific, adopting a plant-based diet, or a mainly plant-based vegetarian diet, would help with cutting greenhouse gas emissions. Study of Poore and Nemecek (2018) showed the destructive impact of the meat industry on water use, air and water pollution, and greenhouse gas emissions. Their research established that especially the production of beef production requires 36 times more land, and thereby generates six times more greenhouse gas emissions, than the production of peas. They claim dietary change is the best method to curtail impact on the planet: “Moving from current diets to a diet that excludes animal products has transformative potential, reducing food’s land use by 3.1 billion hectares (a 76 percent reduction), including a 19 percent reduction of arable land” (p. 18). The researchers think communicating information to consumers, e.g. regarding the average product impacts, will enable this dietary change. Shepon, Eshel, Noor, and Milo (2018) support the outcomes of Poore and Nemecek, underlining the significance of changing eating habits for the sake of reducing food loss (Shepon et al., 2018). According to them, the consumption of resource-intensive food items, for example beef, instead of more efficient products that are equally nutritious, can also be considered as a food loss. Their study revealed that “Replacing all animal-based products in the mean American diets using all feed croplands with nutritionally comparable or superior plant alternatives can sustain approximately 350 million additional people” (p. 3806). Therefore, they recommend a dietary shift in order to improve food availability and security.

Besides the positive impact sustainable eating habits has on the environment, it also influences people’s personal health. Namely, a changed food intake pattern including more vegetables and less meat has positive effects on individuals’ physical health. Recently, the Eat-Lancet Commission published a paper (Willett et al., 2019) promoting a sustainable diet. According to this commission, a radical change in our eating pattern is necessary in order to prevent a decreasing life expectancy and irreversible damage to the environment. These recommended eating patterns mainly consists of “a diversity of plant-based foods, low amounts of animal source foods, unsaturated rather than saturated fats, and small amounts of refined grains, highly processed foods, and added sugars” (p. 2). Adopting this lifestyle is presumed to significantly promote human health (Willett et al., 2019). Therefore, it is a logical consequence to take these two together in a research, especially since a large part of the Western world population is experiencing obesity. In summary, current food habits are often not sustainable, neither are they healthy. Research demonstrated how an alteration in food patterns can contribute to the cut of greenhouse gas emissions.

Part of the consumer population understood the consequences of their eating habits, and became more conscious about their eating habits. This resulted in sustainable food and drink sales (Smithers, 2018). Innova Market Insights noted increasing consumer interest in health, sustainability, and ethics caused a raise of 62 percent of products referencing ‘plant-based’ ingredients on its label (Innova Market Insights, 2018). Nevertheless, this group mainly consists of wealthy, educated people that can afford sustainable products (Johnston, Szabo, & Rodney, 2011). Against this background, the purpose of this paper is to find effective methods to influence students eating behaviour. This target group namely often has less access to financial resources. The main focus lays on persuading Dutch students to more often eat vegetarian meals. This study elaborates on the Theory of Planned Behaviour, as proposed by Ajzen (1991). He distinguished social norms and attitude to predict behaviour. For this study, social norms together with message framing are identified as variables resulting in attitude and feelings of moral obligation. Willingness to comply and regulatory focus are taken into account as moderating variables. This study contributes to the understanding of changing consumer intention, and their adoption of sustainable food products. Especially, since existing

Dutch communication means do not primarily focus on altering consumer behaviour regarding sustainable eating. Most Dutch campaigns focus on stimulating food producers to produce in a more sustainable manner (Rijksoverheid, n.d.), or proceed against other impact factors, such as showering too long (Milieu Centraal, n.d.). Therefore, this study provides new insight into possible effective methods to address consumer behaviour. Moreover, this study identifies practical implementations to stimulate consumers to alter their eating behaviour. Social marketers can benefit from this new gained knowledge and implement it in their marketing strategies. Besides, there is almost no evidence on interventions designed to achieve both health and environmental objects. For this reason, researchers investigating the field of sustainable food choices might benefit from this research.

Eventually, the following research questions were formulated:

- a. To what extent do message framing and social norms influence moral obligation, attitude and intention to buy?
- b. To what extent do message framing and social norms interact to influence moral obligation, attitude and intention to buy?
- c. To what extent are the effects of message framing and social norm on the moral obligation, attitude and intention to buy moderated by willingness to comply and regulatory focus, respectively?

This research report is subdivided in several sections. The next section shows a theoretical framework treating relevant theories and concepts, including consumers' drivers to eat sustainable and a description of the independent and dependent variables. Afterwards, the research method is explained. Subsequently, the results of the conducted research are described. Based on these results, conclusions could be drawn. The last section reflects on limitations and implications of the research.

## **2. Theoretical background**

As became evident, change in attitude is necessary in order to ensure the maintenance of the planet, and to attain a healthy world population. This research treats enabling change from a consumer perspective. Thus, the focus lays on reducing food's environmental impacts through consumers. Besides, consumer's health benefits from dietary change since a sustainable, or vegetarian, diet often includes healthy products. Namely, a diet containing less animal products and more plant-based foods are associated with reductions of mortality, obesity and diabetes rates. In addition, diet change is expected to result in emission reduction (Springmann, Godfray, Rayner, Scarborough, 2016). This study concentrates on encouraging and persuading Dutch students to eat more often vegetarian, and ultimately become a vegetarian. According to Poor and Nemecek (2019), producers can only limidly decrease environmental impacts. Consumers, on the other hand, can play a bigger role by changing their eating habits. For example, a diet that excludes animal products reduces land use by 3.1 billion hectares, including a 49 percent reduction of GHG emissions. Moreover, consumers can make an impact by averting eating food with a damaging effect on the environment. This 'boycott' on high-impact producers lessens emissions and land use. For example, there is a 39 percent reduction of high producers' land use when consumers decide to stop consuming discretionary products such as oil, sugar and alcohol by 20 percent. Consequently, consumers can pose great power on the environment, and at the same time improve their own health. Hence, it is most suitable to put effort in changing consumers' attitude towards sustainable and healthy food.

## 2.1 Drivers to eat sustainable

In order to alter consumer behaviour, it is important to review people's possible motives to eat sustainable or vegetarian. Nowadays, more and more people decided to adopt a sustainable eating lifestyle (Basha, Mason, Shamsudin, Hussain, & Salem, 2015). A sustainable eating lifestyle does not only cover a vegetarian diet, but also an organic diet. The first appearing reasons are related to health and environmental consciousness. To illustrate, the term 'organic' is often strongly emotionally related to personal wellbeing and health. Surveys reveal consumers mainly choose to eat organic because they believe it is better for the environment, animal welfare, personal health and the health of their family (Padel & Foster, 2015). Regarding health, Padel and Foster found two main drivers to buy organic food, namely personal illness and food allergies. The same study demonstrated people's concern for the environment affected their purchase choices. However, the strongest reason for buying organic food was health. Lappo, Bjorndal, Fernández-Polanco and Lem (2015) also studied consumers' concerns and drivers in food markets. Besides health and sustainability reasons, they found food safety concerns as an incentive to obtain organic products. Consumers command more transparency regarding the products they eat. Over the years, the complexity of food production increased. Subsequently, consumers want to know the journey their food made, including information regarding origin, transportation and distribution (Pascal & Mahé, 2001). Additionally, consumers that buy sustainable food products are often concerned with Corporate Social Responsibility. They are willing to pay more for 'socially responsible' products produced by transparent companies. Through the commitment to a responsible company, consumers hope to promote ethical goals such as equality and sustainability.

Honkanen, Verplanken, and Ottar Olson (2006) investigated the role of ethical motives in consumers' choice of food. People concerned about ethical issues, for example regarding animal rights and environmentally friendly production, are generally more likely to consume vegetarian food. People's political motives, including fair trade and human rights, also have a positive impact on attitudes towards consuming sustainable food. Ecological motives, such as production without hurting animals and without disturbing nature, were found to have a large influence on attitude as well. People find the consumption of meat morally troublesome, since it implies hurting animals for personal use (Loughnan, Haslam, Bastian, 2010). Hoogland (2005) found that people's willingness to eat meat decreases when they are primed to animal welfare, resulting in a higher focus on ethical treatment of animals during the purchase of meat products. Others fully reject meat in order to resolve their internal cognitive dissonance. This term is highly related to the meat paradox. That is, many people feel uncomfortable when the meat they eat is linked to the death of animals (Loughnan, Haslam, & Bastian, 2010). The majority of humanity believes animals should not be hurt. However, they also have to acknowledge animals are hurt for the steak they prefer to eat.

Not only intrinsic motivations drive people in their decision to buy organic food. Subjective norm also poses a significant effect on intention to buy sustainable food products. As described by Basha et al. (2015), "People tend to follow the reference group, a leader who in turn influences the group towards the certain behaviour and action" (p. 446). Thus, people are pressured by their environment to indulge or not indulge in a certain behaviour. Individuals are highly worried about the views of the reference group, and whether the performed behaviour is approved or not. Therefore, intention to buy is thoroughly dependent on subjective norm.

Lastly, scholars examined the relation between subjective wellbeing and the purchase of vegetarian, or sustainable, products. Apaolaza, Hartmann, D'Souza, and López (2000) found the consumption of sustainable food led to an increase in subjective wellbeing. Consumers namely associate health and

happiness with the consumption of sustainable food, making them feel good about themselves. This positive physical, psychological, emotional, and social state as a result of adequate food consumption is referred to as 'food wellbeing' (Block, 2011). Consumers experience pleasure from eating sustainable food and perceive a higher degree of emotional wellbeing. This need for wellbeing and health can be derived from Maslow's hierarchy of needs. This theory describes a pattern of needs that drives human motivation (Koltko-Rivera, 2006). Among others, humans seek to satisfy their safety needs. People want to feel safe, which also includes being healthy and having a high level of wellbeing. This information can be used when trying to persuade people to change their eating habits.

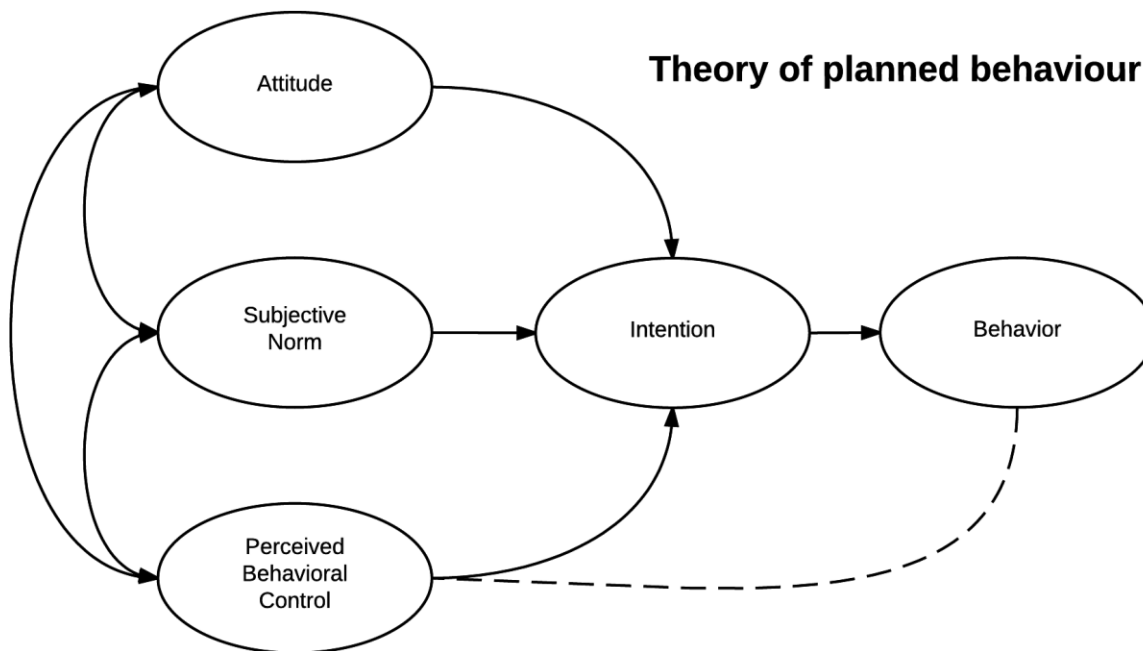
In summary, different reasons exist that lead consumers to purchase sustainable products. Health and environment concerns are the chief motivation to buy and eat sustainable food. Moreover, consumers prioritise ethical consumption. Furthermore, eating sustainable makes people feel good about themselves. However, it must be noted that the consumers discussed in this topic were already concerned with the environment and their health, motivating them to buy organic products. To reach and affect the target audience - students that chose meat and unhealthy food above the recommended sustainable and healthy diet - it is important to examine the factors related to enabling change.

## **2.2 Enabling change**

Convincing people to change their behaviour is a challenging assignment. Research of I&O research investigated the perspective of Dutch people towards global warming (I&O Research, 2019). They found the major part of society (65%) is concerned about global warming. Nonetheless, they do not seem to have intentions to change their own behaviour. According to the respondents of the study, it is the government's and companies' responsibility to counteract climate change. A large part of the research respondents (59%) are convinced their actions will not change anything as long as companies do not reduce their CO<sub>2</sub> emission. A much smaller percentage thinks behavioural change will have an effect. Moreover, almost 60% agrees with the statement "I deserve meat and I do not want to give it up". Thus, most people are not willing to change, either because they do not feel responsible or because they prefer eating meat. Though, one third of the respondents were willing to act in a more sustainable manner, however, they think municipalities do not provide sufficient information on how to do this. Higher educated people belong to the group that is worried about the environment. Therefore, they often refer to themselves as vegetarian or flexitarian. However, in reality these people are responsible for the most CO<sub>2</sub> emission, especially in the categories food and travel (I&O Research, 2019). This illustrates a contradiction between people's attitudes and behavioural patterns. Normally, certain behaviours derive from pre-existing attitudes and intentions. This is described in the Theory of Reasoned Action (Madden, Scholder Ellen, Ajzen, 1992). Later on, this theory was revised, resulting in the Theory of Planned Behaviour (figure 1). This theory explains that attitude towards behaviour, subjective norm, and perceived behavioural control together form intention and behaviour (Ajzen, 1991). The first predictor, attitude towards behaviour, refers to the degree to which an individual has a positive or negative evaluation of the behaviour in question. Subjective norm concerns the perceived social pressure to either perform, or not perform a certain behaviour. Namely, an individual's behaviour is often influenced by the judgement of significant others, i.e. parents or friends. The last factor, perceived behavioural control, refers to the perceived ease or difficulty of performing the behaviour. This evaluation is often based on past experiences. The described theories are relevant in order to try to enable change, since it explains the antecedents of particular behaviour. This has been taken into account during the design of an intervention.



Figure 1. Theory of planned behaviour



However, as mentioned earlier, attitude and behaviour do not always correspond. Vermeir and Verbeke (2006) did research to the gap between favourable attitude towards sustainable behaviour and behavioural intentions to purchase sustainable food. They found more sustainable and ethical food consumption can be stimulated through increasing involvement, perceived consumer effectiveness, certainty, social norms and perceived availability. For instance, information distribution concerning the benefits of sustainable consumption can create more involvement and a higher perceived consumer effectiveness rate. Policy makers could take the role as information distributor. However, political attention for sustainable food styles is barely present. Dutch researchers Dagevos and Voordouw (2013) analysed the concept of meat reduction and flexitarianism. They found politicians and policy makers show almost no interest in strategies to reduce meat consumption and to encourage sustainable eating practices. They recommend the E's policy framework made by Defra to governments, consisting of Enabling, Encouraging, Exemplifying, and Engaging (Dolan et al., 2012). To begin with, facilitating the accessibility, affordability, and availability of sustainable products should lower the threshold for consumers to buy sustainable products. Moreover, consumers should be encouraged to buy sustainable food, for instance through subsidies. Also, governments should exemplify, or highlight, their own good example of eating less meat. Thereby, the government acts as a role model. Exemplifying is often combined with engaging. It would be hypocritical, insincere and unreliable when politicians would not alter their own meat intake. The next section goes more into detail about the independent variables derived from the Theory of Planned Behaviour and the dependent variables that were chosen for this study.

## 2.3 Independent variables

There are many variables influencing human eating habits. Regarding this research, message frames and social norms are investigated as the dependent variables affecting attitude, moral obligation and ultimately intention to buy. First of all, behaviour can externally be influenced by the way the desired change is presented. That is, the target group can be pushed in the right direction through a favourable message frame. It is important to find out which frames result in the most likable effect. Secondly, social norm is proven to be one of the main determinants of attitude (Ajzen, 1991). Just like message frame, social norm is an external factor. Unlike internal predictors, such as perceived behavioural control, external factors are easier to manipulate in an intervention. Therefore, these variables were chosen to be further scrutinised.

### 2.3.1 Message frame

Health and environment concerns are the main motive people have to alter their food consumption. For that reason, the benefits gained by a changed food pattern should be emphasized in an intervention. How the message including these benefits is framed requires careful attention. Message framing techniques are often applied to influence individuals' perception of reality. Different researchers investigated the impact of message framing on the intention to purchase sustainable food products. Gifford and Bernard (2006) examined the effects of positive (gain) and negative (loss) framing on the self-reported change in purchase likelihood of sustainable food. In this case, he examined the change in purchase likelihood of organic food. A gain frame indicates the presentation of the possible benefits that can be gained if a product is purchased or consumed. In contrast, loss framing exemplifies the risks or negative consequences one might experience from not consuming the product. They showed respondents a survey, after which they had to evaluate whether the information had influenced their intention to buy. They discovered respondents who received information through a positive frame, reported a significant increase in the influence of the survey. The same outcome applies to recipients of the negative, although this frame was found to be less effective. Therefore, they concluded a mix of both kinds of framing could be appropriate to influence purchase intention, but with an emphasis on applying positive frames. Hsu and Chen (2014) studied the effects of framing as well, with regard to the influence of regulatory fit on consumer attitudes and purchase intentions towards sustainable food. Regulatory fit refers to the matching of an individual's goal, giving the individual a positive sense of satisfaction, self-assurance and self-worth. This results in the individual to continue doing what feels right to them. Consequently, the individual develops more positive attitudes towards their target. Thus, regulatory fit intensifies people's attitudes and behaviours. Regarding sustainable food purchase, this means that when people experience regulatory fit, their attitudes towards the products improve, increasing the intention to buy. A positive frame enlarges the chance of the occurrence of regulatory fit, and thereby the intention to purchase organic food. Kareklas, Carlson, and Muehling (2012) also focused their study on message framing, mainly aimed at 'green' advertising message framing. Green marketing gained more success in the past years, since companies see business in promoting 'green' products (Dangelico & Vocalelli, 2017). Advertisements often have a green character, that provides information through a green frame to persuade customers.

The effectiveness of frame is related to people's egoistic or altruistic properties. Namely, some people devote a large amount of their time helping others, while others are more interested in gaining personal benefits. Thus, some people are other-focused while others are self-focused. Batson, Ahmad, Lishner, and Tsang (2016) described altruistic humans as the ones motivated to benefit the other, without expecting something in return. In contrast, egoistic actions are motivated by gaining self-benefit. Kareklas et al. (2012) investigated the egoistic and altruistic considerations for purchasing sustainable food. They

tried to find whether an alignment existed between egoistic purchase considerations and consumers' attitudes and intentions to purchase sustainable food. Similarly, they examined factors related to altruistic purchase considerations and its alignment with intentions to purchase sustainable food. Examples of egoistic purchase considerations are a person's health and safety concerns. These people responded better to a message focused on the possible benefits for their own health. Opposed to this notion, the people that are altruistic oriented often show environmental and animal welfare concerns. A message frame focusing on the environmental gains that come with a sustainable eating patterns is then most appropriate (Kareklas et al. 2012). Based on the discussed literature, the following hypotheses were formulated:

*H1*: Positive message frames have a stronger effect on Dutch students' feeling of moral obligation than negative message frames.

*H2*: Positive message frames have a stronger effect on Dutch students' attitude regarding consuming sustainable food products than negative message frames.

In conclusion, the way a message is framed influences consumers' attitude. Which kind of frame is most suitable to apply, is dependent on an individual's orientation on others or themselves.

### *2.3.2 Social norm*

Apart from the importance of message frame, the interference of social norm is interesting to examine as well. The concept of subjective norm is earlier defined as the social pressure experienced by individuals to either perform, or not perform a certain behaviour. Individuals prefer to act in accordance to the individual's reference group. Various scholars investigated the effect of subjective norms in the context of sustainable food purchase. For example, Smith and Paladino (2010) found that social pressure does influence a consumer's attitude towards sustainable products. Furthermore, Al-Swidi, Mohammed Rafiul Hogue, Haroon Hafeez, and Noor Mohd Shariff (2014) discovered similar results, stating subjective norm moderates the relationship between perceived behavioural control and buying intention toward sustainable food. Furthermore, Bastian and Loughnan (2017) investigated how social norm can contribute to resolving the meat-paradox. Currently, individuals try to reduce their cognitive dissonance by the process of ritualization. Namely, "Meat-eaters can rely on the notion that meat-eating is normal, to justify the meat consumption" (p. 282). Thus, people rely on social norms or external pressure to provide a justification for their actions. However, this knowledge can also be used in order to realise the contrary effect. That is, social norm caused societies to be able to justify their immoral behaviour. This shows social norm has a far reaching effect, and is therefore assumed to be able to foster behavioural change regarding eating behaviour. Thus, sustainable and ethical food consumption can be stimulated through social norm. More specifically, a positive relation is found between consumers with low attitude and high buying intentions, and social norm (Vermeir & Verbeke, 2006). This confirms that social norms affects consumers' intention to buy sustainable products, despite existing low personal attitudes towards buying. Therefore, Rettie, Burchell, and Barnham (2013) propose to use social normalisation in marketing to 'make green normal'. These researchers suggest to alter green marketing methods, which are now mostly targeting a green niche. Instead, green marketing campaigns should focus on portraying a 'green lifestyle' as normal instead of exclusive. Through this, it can play an important role in the social normalisation of sustainable eating patterns. This approach is assumed to be effective, because consumers are more likely to adopt behaviour and products which they perceive to be normal.

In order to make optimal use of the social norm, it is important to make a distinction between the two existing types of social norm: descriptive norm and injunctive norm. Melnyk, Van Herpen, Fisher, and Van Trijp (2013) describe descriptive norms to be motivated “By providing an example of preferred behaviour, and suggesting appropriate actions” (p. 192). These norms derive their power from social proof, and people’s desire to perform adherent behaviour, especially because the performed behaviour provides social evidence that this behaviour is successful. Injunctive norms, on the other hand, are focussed on rules and beliefs, and people might act the behaviour conform to these norms in order to avoid sanctions. For instance, people follow a social request in order to avoid social disapproval or punishment. Thus, the effect of injunctive norms is primarily based on the influence of the expectations held by others. This results in consumers to fulfil their obligations. Melnyk et al. (2013) found descriptive norms to be most effective in order to acquire consumers to perform the desired behaviour. Namely, this type of norm is able to lead people to focus on thoughts that are in favour of the advocated behaviour, at the expense of opposing thoughts. According to Melnyk et al. (2013), “Consumers focus on why others perform a behaviour, which leads to thoughts regarding personal benefits (if most people buy this product, it must be good) and social benefits (if I buy what others buy, I will fit in)” (p. 193). Especially when the others are perceived to perform relevant behaviour, their acts are seen as ‘social proof’ leading them to benefits. Accordingly, the source of a message is important as well. The endorser has an influence on how the sent message is perceived by the target group. Important concepts in this matter are ‘trust’ and ‘credibility’. Trust in the message endorser has a positive impact on attitude toward purchasing behaviour (Hsu & Chen, 2014). What is more, the credibility of the source is a key determinant in the message’s potential to persuade (Vega-Zamora, Torres-Ruiz, & Parres-Rosa, 2019). Especially when people have little knowledge of the particular topic, receiving information from a source that is perceived to be credible has positive impacts on its acceptance. Overall, the effect of descriptive and injunctive norms are interesting to include when investigating changing consumer intention to buy. Descriptive norm in particular is suggested to be the most successful type of norm when trying to promote a certain attitude or intention, especially when the message is brought by a reliable, relevant endorser. Based on the discussed literature, the following hypotheses were formulated:

*H3: Dutch students confronted with a descriptive social norm will have a stronger feeling of moral obligation to buy sustainable food products than those confronted with an injunctive norm.*

*H4: Dutch students confronted with a descriptive social norm will have a stronger attitude towards consuming sustainable food products than those confronted with an injunctive norm.*

## **2.4 Dependent variables**

### *2.4.1 Attitude*

It is expected the two independent variables will have an impact on the dependent variables. In this case, the desired goal is to persuade Dutch students to buy sustainable food products. The corresponding dependent variables are formulated as ‘attitude’ and ‘moral obligation’. Attitude towards behaviour is described as the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question (Ajzen, 1991). Attitude is often applied as a variable to measure when scrutinising behavioural change. As explained in the Theory of Planned Behaviour, attitude is one of the factors driving consumers to a certain intention. Eventually, the intention to a certain behaviour is expressed in the actual behaviour. Beside influencing intention, consumer attitude itself is influenced by different factors as well. For example, the knowledge consumers have regarding health and environment benefits, existing internal ethical and political motives, perceived wellbeing as a consequence of buying sustainable products, and the

influence of the message frame and source. In this research, the influence of message frame and social norm are underlined. These two variables were chosen in order to assess if, and how much, Dutch students can be persuaded, since persuaded students will adapt their attitude. Change in attitude can, for instance, be determined by asking respondents whether their attitude to purchase organic foods is extremely bad or good, whether their attitude is extremely unpleasant or pleasant, and whether they are strongly for or against buying sustainable foods (Hsu & Chen, 2014).

#### *2.4.2 Moral obligation*

In addition to attitude, moral obligation is measured. This is defined as a “Personal feeling of moral obligation or responsibility to perform, or refuse to perform, a certain behaviour” (Ajzen, 1991, p. 1991). Later on, Haines, Street, and Haines (2008) added “The decision making sub-process that occurs after an individual makes a moral judgment and prior to establishing a moral intention” to this definition (p. 391). This can be explained, because ethical consumption is proven to emerge from moral or ethical considerations (Bray, Johns, & Kilburn, 2011). These moral obligations reflect an individual’s altruistic values, and the additional feeling of responsibility results in the individual changing his or her behaviour, because of the given circumstances. Since attitudes are linked to behavioural intention, Anderesch, Arnold, Seemann, and Lindenmeier (2019) included moral obligation in their research to understand people’s purchasing behaviour. They could confirm moral obligation mediates the positive effect of ethical judgement on ethical consumer behaviour. Furthermore, Shaw and Shiu (2002) examined the role of moral obligation - also referred to as ethical obligation - and self-identity in ethical consumer choice. They adapted the Theory of Planned Behaviour model in an extended version, to confirm whether moral obligation mediates intention to buy. They argued the regular model is limited, because the core focus lays on self-interested concerns of respondents and does not include the ethical issues of today’s society. Therefore, a measure that assesses ethical consumer concerns is relevant. Moral obligation is also proven to be possible to measure through a Likert scale, for instance by asking respondents to what extent they feel morally obliged to buy ethical products (Beldad & Hegner, 2018). With this adapted model, Shaw and Shiu (2002) could also conclude that ethical obligation is one of the predictors of intention.

#### *2.4.3 Intention to buy*

The two described variables are assumed to predict the intention to buy sustainable food products. The ultimate goal of this research is to influence consumers intention to engage in a certain behaviour. In this case, consuming more sustainable food products for both health and environment reasons. Intention to buy is a measurable variable, since a difference can be observed between the products types bought before respondents were exposed to an intervention, and the kinds of products obtained afterwards. For instance, people buy less meat, or they choose more often for meat alternatives. Another method is to ask respondents whether they would intend on avoiding or buying sustainable foods, assuming it is available in shops (Hsu & Chen, 2014). In a research setting, participants can also be asked to choose a recipe after being exposed to the intervention. Based on this information, the following hypotheses were formulated:

*H7: Moral obligation predicts Dutch students’ intention to buy*

*H8: Attitude predicts Dutch students’ intention to buy*

## 2.5 Moderators

Not only benefit salience and source exert a certain amount of influence on consumer attitude and intention to buy, other variables do so as well. Defined factors such as people's willingness to comply exert much control on the decisions made. First of all, regulatory focus is perceived as a motivational regulation, that distinguishes two kinds of mindsets. Individuals that are promotion-oriented, focus on hopes and needs related to accomplishment and progress. The same individuals have an independent self-view, focussed on achieving. These individuals thus focus on achieving positive outcomes and benefits, and try to improve their current condition. On the other hand, individuals focussed on prevention care more about safety, responsibility, and security needs. Compatible to this focus is an interdependent self-view, oriented to maintain harmony. In other words, these people try to avoid losses and retain their existing condition from retrograding (Kareklas et al., 2012). Melnyk et al. (2013) explain that a message with information conform to an individual's regulatory focus is "Processed more fluently, feels more right, has a greater influence on actual behaviour, and is more persuasive" (p. 193). More specific, they assume information presented through a gain frame appeals promotion focussed individuals most, because these individuals are driven by gaining personal and social benefits. Similarly, prevention focussed individuals respond best to information presented through a loss frame. Mainly, because these people put effort in preventing loss. Therefore, this consumers' character trait expected to be a moderator of message frame. Based on this information, the following hypothesis was formulated:

*H5: The effect of positive message framing on moral obligation (a) and attitude (b) are moderated by regulatory focus*

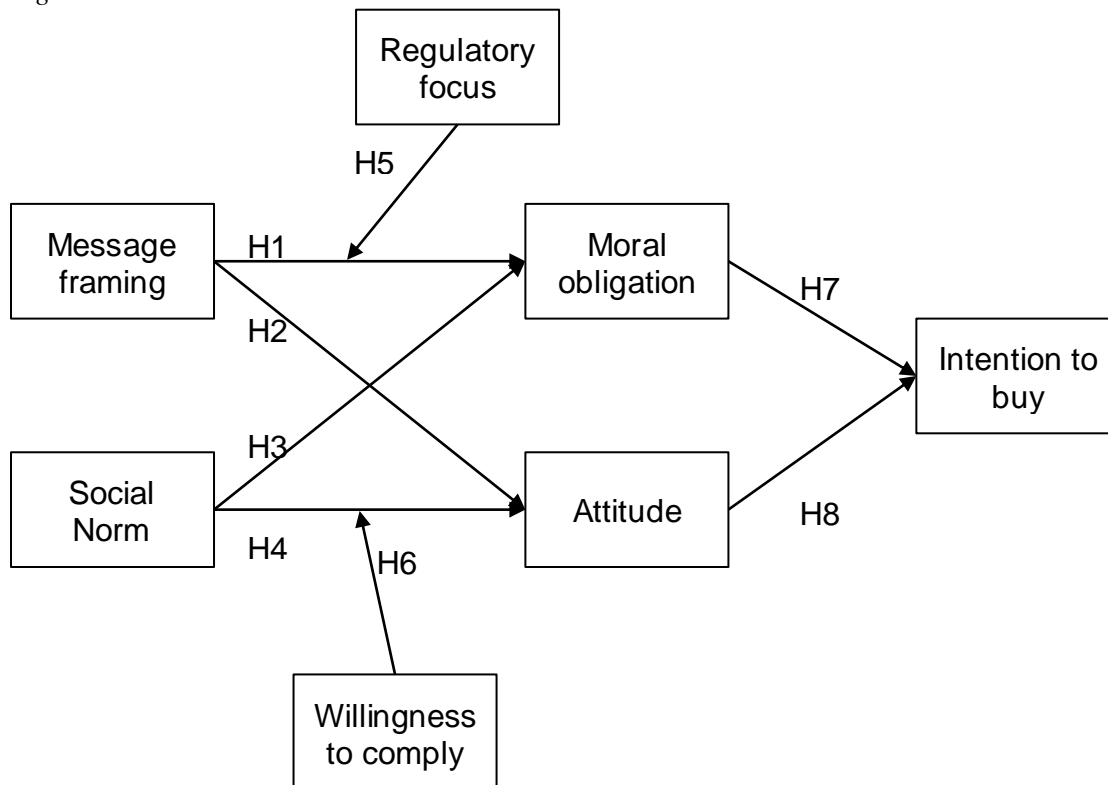
Moreover, the consumers' willingness to comply should be taken into account when investigating the factors that influence intention to buy. A high willingness to comply indicates that the individual is willing to act in accordance with, among other things, requests, requirements and demands. Willingness to comply probably moderates the effect of social norms on consumers' moral obligation and attitude, since people that prefer to comply to social demands are presumed to be more sensitive for social norms. This notion that high compliance moderates social norm is confirmed by Vermeir and Verbeke (2006). They defined social norm as the willingness to comply with the opinion of others. They discovered that the respondents sensitive for social norms showed high intentions, despite having rather low personal attitudes towards buying sustainable products. Hence, a person's willingness to comply moderates social norm, which affects intention to buy sustainable products. Based on this information, the following hypothesis was formulated:

*H6: The effect of descriptive social norm on moral obligation (a) and attitude (b) are moderated by willingness to comply*

## 2.6 Research model

In conclusion, emphasizing social norm and taking into account a message's frame are assumed to be helpful in promoting sustainable products to the broader public. In order to better visualise the experiment conducted to test the effect of the independent variables and moderators, a research model is created. This schematisation of the process is displayed in figure 2. The image shows how message framing both influences moral obligation and attitude. Moreover, social norm is expected to have an impact on moral obligation and attitude as well. In addition, regulatory focus and willingness to comply, that are hypothesised to have a moderating role, are included. Finally, the predicting character of moral obligation and attitude to intention to purchase is visualised.

Figure 2. Research model



## 3. Method

### 3.1 Research design

A between-subject experimental study was conducted. In order to test the hypotheses, a survey was chosen to be the most appropriate research method. Conducting surveys is a quick and effective method to collect a large amount of data. Particularly because it is possible to reach a broad audience through survey distribution, which is advantageous since a larger sample size better represents the total population (Alessi & Martin, 2010). The conducted research was a 2 factor experiment in which social norm and message frame were manipulated. Students who participated in the study were exposed to one of the eight campaign poster versions (see appendix C). The posters contained an image of a meal holding lots of vegetables, and a sentence. This sentence covered the expression of the two factors social norm and message frame. Social norm was presented first, for example “Veel studenten eten al vaker vegetarische maaltijden” (Many

students already eat more often vegetarian meals), and the message frame came second, for instance “Aangezien het CO<sub>2</sub>-uitstoot en de kans op ziektes verkleint” (since it decreases CO<sub>2</sub> emissions and the likelihood of getting diseases). This specific sequence was chosen after enquires had been made. The survey included demographic questions and several statements. Respondents had to indicate to what extent they agreed on those statements on a 7-point Likert scale. The scales were mostly inspired by existing scales developed by scholars. In order to measure perceived behavioural control, attitude, and behavioural intention, modified versions of statements by Sparks and Shepherd were used (Sparks & Shepherd, 1992). They, for example, measured perceived control by asking “How much control do you have over whether you do or do not eat organic vegetables?”. To measure the construct ‘attitude’, statements such as “Eating organic vegetables is extremely pleasant” were adjusted and included. Furthermore, behavioural intention was measured by adapting and including Sparks and Shepherd’s questions “I intend to eat organic vegetables during the next week” and “I intend to eat organic vegetables tomorrow”. The items to measure regulatory focus were adapted from Lockwood, Jordan and Kunda’s (2002) Regulatory Focus Scale. This scale included eighteen items. The seven items that were best applicable to this particular study were included, for example “In general, I am focused on preventing negative events in my life”. In order to measure moral obligation, statements from Shaw, Shiu, and Clarke (2000) were used as an inspiration, for example “I feel that I have an ethical obligation to purchase fair trade grocery products”. Moreover, Beldad and Hegner’s (2018) items were modified.

### **3.2 Data collection procedure**

In order to collect data for analysis, Dutch students were asked to fill in an online survey created by using the Qualtrics software. Part of the respondents were approached personally with the request to click a link and fill out the questionnaire. Moreover, the link to the online survey was shared on social media platforms such as Facebook and Twitter. Before participating, they were told the survey concerned students’ food choices, and that filling in the questionnaire would approximately take ten minutes of their time. The main objective of this study is to change attitude and behaviour. Therefore, respondents that indicated to be vegan or vegetarian were excluded, since these individuals already changed their behaviour, and already have a favourable attitude towards eating vegetarian food. Measuring intention to purchase vegetarian products was therefore irrelevant. Hence, an exclusion question (“How would you describe yourself”) was asked, directly after the participant started the survey. The questionnaire started with a brief introduction about the topic and its purpose. This introduction ended with an informed consent, informing respondents about their rights and the risks they would be exposed to. Agreeing on this meant they voluntarily participated in the research. The questionnaire started with eight demographic questions, regarding age, gender, highest level of education, current study, whether or not the respondent has a side job, whether or not the respondent did groceries by him or herself, how much money was spent on groceries, and religion. After answering these questions, the respondents were shown several 7-point Likert scale statements regarding their perceived behavioural control, willingness to comply and regulatory focus. Then, the participants were randomly assigned to one of the eight conditions. The respondents were asked to carefully read the text depicted on the poster. Questions regarding moral obligation, attitude and intention to purchase were asked afterwards. At the end of the questionnaire, respondents were thanked for their time.

### **3.3 Stimulus materials**

To create the eight conditions, several texts were used, all accompanied by the same image of a vegetarian meal, see figure 2. The text designed to measure descriptive social norm consisted of “Veel studenten eten



al vaker vegetarische maaltijden” (Many students already eat more often vegetarian meals). In order to measure injunctive social norm, the text “Wij zouden vaker vegetarische maaltijden moeten eten” (We should more often eat vegetarian meals). The third option was to have neither a descriptive social norm, nor a injunctive social norm. The text was finished by a version of a text intended to measure message frame. Regarding the gain frame, the used text was “aangezien het CO2-uitstoot en de kans op ziektes verkleint” (since it decreases CO2 emissions and the likelihood of getting diseases). The text representing a loss frame was “Want vlees eten draagt bij aan CO2-uitstoot en vergroot de kans op ziektes” (since eating meat contributes to CO2 emissions and increases the likelihood of getting illnesses). Table 1 shows the different combinations.



*Figure 2.* Image of a vegetarian meal

Table 1

*Stimulus materials*

Social norm	Message frame
Veel studenten eten al vaker vegetarische maaltijden (descriptive)	Aangezien het CO <sub>2</sub> -uitstoot en de kans op ziektes verkleint (gain)
Veel studenten eten al vaker vegetarische maaltijden (descriptive)	Want vlees eten draagt bij aan CO <sub>2</sub> -uitstoot en vergroot de kans op ziektes (loss)
Veel studenten eten al vaker vegetarische maaltijden (descriptive)	- (no message frame applied)
Wij zouden vaker vegetarische maaltijden moeten eten (injunctive)	Aangezien het CO <sub>2</sub> -uitstoot en de kans op ziektes verkleint (gain)
Wij zouden vaker vegetarische maaltijden moeten eten (injunctive)	Want vlees eten draagt bij aan CO <sub>2</sub> -uitstoot en vergroot de kans op ziektes (loss)
Wij zouden vaker vegetarische maaltijden moeten eten (injunctive)	- (no message frame applied)
- (no social norm applied)	Vaker vegetarische maaltijden eten verlaagt CO <sub>2</sub> -uitstoot en de kans op ziektes (gain)
- (no social norm applied)	Vlees eten draagt bij aan CO <sub>2</sub> -uitstoot en vergroot de kans op ziektes (loss)

**3.4 Pre-test**

Prior the the actual experiment, a small pre-test was conducted in order to test the effectiveness of the designed manipulation. A few persons were asked to indicate to which extent they agreed on several statements. The goal was to find out whether the respondents perceived the stimulus material the way it was presumed. Four statements were posed per independent variable, meaning the questionnaire consisted of eight statements (Appendix D). Four questionnaires were created in Qualtrics, each showing two of the eight versions, followed by the eight statements. These statements included for example ‘De campagneposter beschrijft wat andere mensen doen’ (the campaign poster describes what other people do) and ‘De campagneposter benadrukt dat de meeste studenten vegetarisch eten’ (the campaign poster emphasizes that most students eat vegetarian). In total, eight acquaintances of the researcher gave their opinion. The results of the questionnaire showed that the manipulations were clear. Regarding the manipulation depicting descriptive social norm and a gain message frame, both independent variables were noticed. This could be concluded because respondents said they totally agreed to the statements “De campagneposter beschrijft wat andere mensen doen” (the campaign poster describes what other people do) and “De campagneposter benadrukt dat de meeste studenten vegetarisch eten” (the campaign poster emphasizes that most students eat vegetarian). In regard to the gain frame, the respondents totally disagreed to the statement “De campagneposter benadrukt de negatieve consequenties van vegetariër worden” (the campaign poster emphasizes the negative consequences of becoming vegetarian). Furthermore, the respondents totally agreed to the statement “De campagneposter benadrukt de positieve consequenties van

vegetariër worden” (the campaign poster emphasizes the positive consequences of becoming vegetarian). Regarding the manipulation depicting a text with descriptive social norm and a loss frame, the respondents agreed that the intervention encouraged them to eat vegetarian food. The respondents that were shown a campaign poster containing an injunctive social norm and a gain frame, said they agreed to the statements “De campagneposter moedigt me aan om vegetarisch te gaan eten” (the campaign poster encourages me to eat vegetarian) and “De campagneposter adviseert mij om in actie te komen” (the campaign poster advises me to act). Besides, the respondents totally agreed to the statement “De campagneposter benadrukt de positieve consequenties van vegetariër worden” (the campaign poster emphasizes the positive consequences of becoming vegetarian). The respondents that were shown the manipulation containing an injunctive social norm together with a loss frame, reported to agree to the statement “De campagneposter adviseer mij in actie te komen” (the campaign poster advises me to act). Moreover, respondents that got showed a manipulation containing only a version of social norm or message frame, clearly reported to miss something. For instance, respondents to which a manipulation only containing descriptive social norm was presented, totally disagreed to the statements “De campagneposter benadrukt positieve consequenties” (the campaign poster emphasizes positive consequences) and “De campagneposter benadrukte de negatieve consequenties van vegetariër worden” (the campaign poster emphasizes the negative consequences of becoming vegetarian). On the other hand, these respondents totally agreed to the statement “De campagneposter beschrijft wat andere mensen doen” (the campaign poster describes what other people do). Respondents who gave their opinion regarding the manipulations only containing a message frame, reported to totally disagree to statements that checked social norm, for example “De campagneposter benadrukt dat de meeste studenten vegetarisch eten” (the campaign poster emphasizes most students eat vegetarian). Concludingly, the manipulations were not altered after conducting the pre-test.

### **3.5 Respondents**

The target audience for this research consisted out of students. Youngsters are perceived to care a lot about climate change, and are worried about the future. However, I&O Research (2019) found that youngsters can still improve their behaviour regarding sustainable living. For example, youngsters make extensive use of the facility to fly. Especially youngsters between the ages of 18 and 24, often students, eat the most meat and shower the longest (I&O Research, 2019). On top of that, students are higher educated. I&O Research discovered higher educated individuals think sustainable, they for example talk more often about climate change and how they can contribute, but do not act sustainable. Instead, they contribute most to CO<sub>2</sub>-emissions. For instance, higher educated individuals intend to eat less meat. However, they approximately eat more meat (I&O Research, 2019). Therefore, this group was chosen to be targeted in the research. In addition, youngsters are said to be the future. Since the effects of climate change will be visible in the future, changing eating habits is most relevant and convenient for the younger generation.

In total, 224 individuals participated in the study. Not all of the recorded responses were relevant for the analysis. 21 of the responses were excluded after answering the exclusion question. These participants reported to be either vegan or vegetarian. Furthermore, 42 respondents did not complete the survey, making their response not useful. Therefore, these responses were excluded from the data as well. Of the 161 respondents whose data were used for analysis, 57 respondents (30%) saw themselves as flexitarian, while 58 respondents (36%) indicated to unconsciously not eat meat every day. Flexitarians were included because a change can still be made in their food pattern as well. Furthermore, 40 respondents (25%) described themselves to be daily meat-eaters. Lastly, 6 respondents (4%) reported to find it important to eat meat on a daily basis. Regarding gender division, 66 participants were males (41%) and 95 were

female (59%). The respondents' age ranged from 17 to 34 years, with a mean age of 22 (SD = 2.35). The respondents were all students, who studied at different institutes and at different levels of education. The highest level of completed education ranged from voortgezet onderwijs to WO. The complete demographic information of the questionnaire respondents are displayed in Table 2. Their responses were collected via various methods. Partially, students responded to an online request on social media (e.g. Facebook). Others were personally approached with the question to fill out the survey. The eight different versions of the created campaign poster were evenly presented to the respondents. Thus, the respondents were equally assigned to one of the eight versions to test the hypothesis, meaning approximately twenty respondents were assigned to each version.

Table 2

*Demographics of the respondents*

Demographic categories		Frequency (N)	Percentage
Age	17-20	42	26.10
	21-23	72	44.72
	24-26	36	22.35
	27-30	11	6.83
Gender	Male	66	41.00
	Female	95	59.00
	Rather not say		
Highest education	Voortgezet onderwijs	21	13.00
	MBO	13	8.10
	HBO	36	22.40
	WO	87	54.00
	Other	4	2.50
Side job	Yes	108	67.10
	No	53	32.90
Doing own groceries	Yes	132	82.00
	No	29	18.00
Average spent money on groceries (weekly)	0-50 <sup>a</sup>	33	22.50
	51-100 <sup>a</sup>	26	16.15
	101-150 <sup>a</sup>	32	19.86
	151-200 <sup>a</sup>	43	26.71
	201-300 <sup>a</sup>	17	10.56
	301-400 <sup>a</sup>	4	2.48
Religion	Christianity	34	21.10
	Hinduism	2	1.20
	Buddhism	1	.60
	None	120	74.50
	Other	4	2.50
Total		161	100

<sup>a</sup> 6 respondents did not answer this question

### 3.6 Validity and reliability

In order to assess the validity of the instrument, a factor analysis was conducted, see table 3 (see appendix D for the factor analysis comprising the original items written in Dutch). This analysis identifies the underlying factors that are measured. Instead of the intended six components (willingness to comply, regulatory focus, attitude, moral obligation and intention to buy), five components were distinguished. Component 1 comprised 4 items reported on a 7-point Likert scale that explained 28.73% of the variance with factor loadings from .793 till .836. Component 2 was comprised of 5 items reported on a 7-point Likert scale that explained 13.78% of the variance with factor loadings from .695 to .745. Two items were excluded from this component section, since these items loaded on multiple components. Moreover, component 3 contained 3 items reported on a 7-point Likert scale that accounted for 9.92% of the variance with factor loadings from .648 to .878. Furthermore, component 4 comprised 3 items reported on a 7-point Likert scale that explained 8.63% of the variance with factor loading from .615 to .804. Additionally, component 5 contained 3 items reported on a 7-point Likert scale that accounted for 5.32% of the variance with factor loadings from .702 to .775.

Table 3

#### *Factor analysis*

Item	Factor Loadings				
	1	2	3	4	5
I like to do what I think other people in a group want me to do		.75			
I think the opinion of others is important		.76			
I tend to act the same as the people around me do		.75			
I normally base my actions on what I think most people would approve of		.78			
I use the behaviour of others as the basis of my own behaviour		.70			
I am more focused on preventing losses than gaining profits			.65		
I often think about how things can go wrong			.67		
I focus more on success than on preventing possible failures			.88		
I think it is immoral to buy meat				.80	

If I can choose between a vegetarian and non-vegetarian food product, I would feel morally obligated to choose the vegetarian option		.62
I would feel bad if I eat meat product		.75
I would more often choose for vegetarian food products	.84	
If there would be a vegetarian alternative for a meat product in the grocery store, I would choose for the vegetarian option	.81	
I would like to buy vegetarian food products on a regular basis	.82	
I intend to eat a vegetarian meal the next week	.79	
I have complete control about whether or not I eat vegetarian		.77
It is extremely simple for me to eat vegetarian		.70
If I would, I would easily eat vegetarian		.78

Cronbach's alpha was calculated to test the consistency across items, also referred to as internal consistency. The Cronbach's alpha of all the components were considered acceptable. Namely, component 1 had a Cronbach's alpha of .895. This component contained statements originally dedicated to measure intention to buy. Secondly, the items that were subdivided to component 2 measured willingness to comply. The conforming Cronbach's alpha was .826. Component 3 contained questions measuring regulatory focus, and had a Cronbach's alpha of .702. The 3 items subdivided component 4 measured moral obligation. This component had a Cronbach's alpha of .821. The Cronbach's alpha of component 5, that comprised questions measuring perceived behavioural control, was .659. Table 4 depicts the new constructs created after conducting a factor analysis, including the corresponding Cronbach's alpha, mean and standard deviation.

Table 4

*Summary of new constructs*

<b>Construct</b>	<b>Cronbach's alpha</b>	<b>M (SD)</b>	<b>Items</b>
Intention	.895	17.21(6.16)	1. In de toekomst zal ik vaker voor vegetarische voedingsmiddelen kiezen

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			<ol style="list-style-type: none"> <li>2. Als er in de supermarkt een vegetarisch alternatief voor een voedingsmiddel zou liggen, zou ik voor de vegetarische variant gaan</li> <li>3. Ik zou vaker op een reguliere basis vegetarische voeding willen kopen</li> <li>4. Ik ben van plan om komende week een vegetarische maaltijd te gaan eten</li> </ol>
Moral obligation	.821	8.22(4.01)	<ol style="list-style-type: none"> <li>1. Ik vind het immoreel om vlees te kopen</li> <li>2. Ik zou me slecht voelen als ik vleesproducten eet</li> <li>3. Als ik kan kiezen tussen een vegetarisch en niet vegetarisch voedingsproduct, zal ik mij moreel verplicht voelen te kiezen voor de vegetarische optie</li> </ol>
Willingness to comply	.826	17.80(5.88)	<ol style="list-style-type: none"> <li>1. Ik doe graag wat ik denk wat een groep mensen wil dat ik doe</li> <li>2. Ik vind de mening van anderen belangrijk</li> <li>3. Ik neig hetzelfde te doen als wat de anderen om mij heen doen</li> <li>4. Ik baseer mijn acties doorgaans op wat ik denk wat de meeste mensen zullen goedkeuren</li> <li>5. Ik gebruik het gedrag van anderen als het fundament voor mijn eigen gedrag</li> </ol>
Regulatory focus	.702	11.62(3.73)	<ol style="list-style-type: none"> <li>1. Ik ben meer gericht op het voorkomen van verliezen dan op het behalen van winst</li> <li>2. Ik denk vaak na over hoe dingen mis kunnen gaan</li> <li>3. Ik focus me meer op succes dan op het voorkomen van mogelijke mislukkingen</li> </ol>
Perceived behavioural control	.659	14.30(4.15)	<ol style="list-style-type: none"> <li>1. Als ik zou willen, zou ik erg makkelijk vegetarisch kunnen eten</li> <li>2. Het is voor mij extreem eenvoudig om vegetarisch te eten</li> <li>3. Ik heb complete controle over of ik wel of niet vegetarisch eet</li> </ol>

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## 4. Results

### 4.1 Main effects

In order to be able to analyse the responses, one-way MANOVA tests were conducted to measure the main effects. These tests were used to assess whether statistically significant differences are present between the means of the independent variables social norm and message frame. Moreover, Wilks' Lambda (table 5) was used to ascertain whether the MANOVA was statistically significant. The results of the MANOVA test revealed that there were no statistically significant differences between the independent variable social norm and dependent variable intention to buy ( $p \Rightarrow .05$ ), as illustrated in table 6. Additionally, there were no statistically significant differences detected between social norms and moral obligation ( $F(2,152) = .49$ ,

$p = .61$ ,  $M = 2.65$ ,  $SD = 1.33$ ). Furthermore, no significant main effect of message frame on intention to buy vegetarian food products was found between message frame and moral obligation ( $F(2,152) = .49$ ,  $p = .61$ ,  $M = 4.31$ ,  $SD = 1.60$ ).

Table 5

*Multivariate tests*

	$\Lambda$	F	p
Social norm	.98	.71	.59
Message frame	.99	.23	.92
Social norm * Message frame	.98	.55	.77

Table 6

*Main effect of social norm and moral obligation*

	Moral obligation		Intention	
	F	p	F	p
Social norm	.49	.61	.49	.62
Message frame	.36	.70	.13	.88
Social norm * Message frame	.93	.43	.73	.53

The means (M) and standard deviations (SD) were examined in order to find out which condition is most effective. In table 7 the means and standard deviations of moral obligation and intention to buy are presented. The table shows that a loss frame would be most effective frame to increase a feeling of moral obligation ( $M = 2.78$ ,  $SD = 1.20$ ,  $p = .70$ ). However, it was assumed gain message frames would have a stronger effect on Dutch students' feeling of moral obligation than loss frames. This means hypothesis 1 cannot be accepted. Secondly, when observing the different types of social norms, a descriptive social norm seems most effective to increase levels of moral obligation ( $M = 2.82$ ,  $SD = 1.28$ ,  $p = .65$ ), compared to an injunctive social norm ( $M = 2.47$ ,  $SD = 1.39$ ,  $p = .47$ ). This means hypothesis 3, which expected that Dutch students confronted with a descriptive social norm would have stronger feelings of moral obligation to buy sustainable food products than those confronted with an injunctive norm, seems to be supported. However, this effect is not significant ( $p = .65$ ), meaning hypothesis 3 is rejected. Moreover, the table shows a loss frame is most appropriate to apply in order to increase students' intention to purchase vegetarian food products ( $M = 4.34$ ,  $SD = 1.56$ ,  $p = .99$ ). In addition, Dutch students' intention to buy was increased most when a descriptive social norm was applied to the poster ( $M = 4.68$ ,  $SD = 1.36$ ,  $p = .49$ ). However, these results were not significant, and should therefore be handled with care. Besides the discussed hypotheses, hypotheses concerning the effects of the independent variables on attitude were formulated as well. Concerning Dutch students' attitude, it was assumed positive frames would have a positive effect on their attitude regarding consuming sustainable food products. Furthermore, Dutch students confronted with a descriptive social norm would have a stronger attitude towards consuming sustainable food products than those confronted with an injunctive norm. Nevertheless, these hypotheses were formulated anticipating three dependent variables could be identified after data analysis. This was not the case, since only 'moral obligation' and 'intention' could be derived from factor analysis. For this reason, hypothesis 2 and



hypothesis 4 could neither be accepted nor rejected. Similarly, it cannot be said with certainty moral obligation (H7) and attitude (H8) predict Dutch students' intention to buy.

Table 7

*Descriptive statistics moral obligation and intention to buy*

	Moral obligation		Intention to buy	
	M	SD	M	SD
Gain frame	2.40	1.16	4.06	1.61
Loss frame	2.78	1.20	4.34	1.56
No frame	-- <sup>a</sup>	-- <sup>a</sup>	-- <sup>a</sup>	-- <sup>a</sup>
Descriptive norm	2.82	1.28	4.68	1.36
Injunctive norm	2.47	1.39	3.93	1.77
No norm	-- <sup>a</sup>	-- <sup>a</sup>	-- <sup>a</sup>	-- <sup>a</sup>

**4.3 Interaction effects**

MANOVA tests were performed to measure the interaction effects between social norm and moral obligation. Table 6 shows there is no statistically significant interaction between social norm and message framing for moral obligation ( $F(3,152) = .93, MSE = 1.83, p = .43, M = 2.74, SD = 1.34$ ). Additionally, there is no significant interaction effect for intention to buy ( $F(3,152) = .73, MSE = 2.38, p = .53, M = 4.30, SD = 1.54$ ). The means and standard deviations of the interaction effect are presented in table 8. Regarding moral obligation, an injunctive social norm combined with a gain frame was valued with the highest mean ( $M = 3.19, SD = 1.54$ ). However, these results were not significant. Hence, it can only be suggested that a campaign poster with a text including an injunctive norm and a gain frame would be most convincing. Furthermore, a combination of injunctive norm and a gain frame is also most effective to increase students' intention to buy ( $M = 4.64, SD = 1.42$ ). However, when taking into account the highest means of the main effect (see table 7), a campaign solely displaying a descriptive norm, without a specific message frame, would be most effective ( $M = 4.68, SD = 1.36$ ).

Table 8

*Descriptive statistics moral obligation and intention to buy*

	Moral obligation		Intention to buy	
	M	SD	M	SD
Descriptive * Gain	2.77	1.84	4.34	1.44
Injunctive * Gain	3.19	1.54	4.64	1.42
Descriptive * Loss	2.68	1.17	4.30	1.50
Injunctive * Loss	2.76	1.09	4.11	1.73

**4.4 Moderating effect message frame and regulatory focus**

The moderating effect of regulatory focus on message framing was measured using ANOVA. There was no significant effect between these two variables ( $F(1,159) = .37, p = .55$ ). Consequently, hypothesis 5 can be rejected. Table 9 shows that participants who are prevention focussed responded most on message frame ( $M = 1.17, SD = .78$ ).

Table 9

*Descriptive statistics message frame*

	Message frame	
	M	SD
Prevention	1.17	.78
Promotion	1.10	.79

**4.5 Moderating effect social norm and willingness to comply**

Secondly, the moderating effect of willingness to comply on social norm was measured. ANOVA was also used for this analysis. A significant interaction effect between social norm and willingness to comply was found ( $F(1,159) = 12.31, p = .01$ ). These results support hypothesis 6. The descriptive statistics, as presented in table 10, show respondents with low compliance ( $M = 1.37, SD = .72$ ) perceive the highest social norm, compared to respondents with high compliance ( $M = 1.08, SD = .78$ ).

Table 10

*Descriptive statistics social norm*

	Social norm	
	M	SD
Low compliance	1.37	.72
High compliance	1.08	.78

## **5. Discussion**

### **5.1 Summary results**

The aim of this research was to influence the eating patterns of Dutch students. Through presenting different versions of campaign posters, it was hoped to find the most effective method to affect their decision-making. Research to persuading students to revise their eating habits and possibly adapting these habits is important, especially because of current environmental changes. Consumers need to eat more environmentally friendly food products, in order to reduce CO<sub>2</sub> emissions. Moreover, an eating style including sustainable and/or vegetarian products, is proven to increase individuals' health situation. Communicating information to consumers, for example about the benefits of an adapted eating pattern, will enable dietary change. This particular study was directed at the effects of social norm and message frame on attitude, moral obligation and intention to buy. During literature research it became apparent a gain frame would be most effective when trying to convince individuals to change their eating patterns. According to Kareklas et al. (2012), a message that is focussed on the environmental gains and health gains would be the most suitable. Regarding social norm, a descriptive social norm is suggested to be most successful (Vega-Zamora et al., 2019). This type of norm makes use of people's tendency to perform behaviour adherent to proven successful behaviour. Moreover, the moderating effect of willingness to comply on social norm and the moderating effect of regulatory focus on message frame were taken into account. Most of the results were not significant. First of all, the results reject that gain message frames would have a stronger effect on Dutch students' feeling of moral obligation than loss frames, meaning hypothesis 1 was not supported. Hypothesis 3, predicting Dutch students confronted with a descriptive social norm would have stronger feelings of moral obligation to buy sustainable food products than those confronted with an injunctive norm, was rejected as well. Furthermore, the results did not confirm there was a moderating effect of regulatory focus on message framing, meaning hypothesis 5 was rejected. Lastly, there was in moderating effect of willingness to comply on social norm, meaning hypothesis 6 was supported. Hypothesis 2, 4, 7 and 8 could not be assessed, since the variable attitude was excluded after as a result of the factor analysis. Overall, descriptive norms seem to be the most effective type of social norm when trying to affect Dutch students' intention to buy, however, this could not be said with certainty because of a high p-value. Some results were contradicting to the assumptions that were made based on literature research. First of all, no frame would be more effective when aiming to increase intention to buy, than applying a frame. In addition, an injunctive social norm combined with a gain frame emerged to be most powerful to increase levels of moral obligation, instead of a descriptive norm together with a gain frame. These unexpected results could have been caused by the lack of manipulation questions and misinterpretation by the participants of the study. The following sections discusses these design and execution flaws more in-depth.

### **5.2 Reflection on theoretical and practical implications**

The hypotheses that were based on scientific research could not be accepted, even contrary results were found. Melnyk et al. (2013) found descriptive norms to be most successful, because consumers seem to get convinced by social proof. Moreover, Hsu and Chen (2014) and Kareklas et al. (2012) found gain frames emphasizing positive aspects to be most effective. This research does reinforce the notion that a descriptive norm is more effective when trying to increase an individual's intention to buy sustainable products than an injunctive norm. Furthermore, a gain frame was suggested to be effective, but only combined with an injunctive norm, which is contrary to the hypothesis that a combination of a gain frame and a descriptive norm. Nonetheless, the combination of these two was not proven by literature. Accordingly, it might be possible that, when combined with a certain message frame, an injunctive social norm is more effective.

However, as mentioned earlier, the outcomes were not significant. Meaning the data provided almost no real evidence the null hypothesis is false. However, researchers discussed in the theoretical framework obtained significant results. One possible explanation for the absence of an effect of social norm is that Dutch individuals are considered to have an individualistic character. Fischer (1999) noted that values related to individualism were rated as highly important in the Netherlands. This might have affected the impact of social norm, since individualistic individuals are less likely to be influenced by social norms that gain their power from social pressure. Instead of focussing on social norms, it might be interesting to further explore the effects of personal norms, as proposed in the Norm Activation Model. This model, created by Schwartz, explains the causal relationship between personal norms and prosocial behaviour (Schwartz, 1977). Personal norms stem from, among other things, ascription of responsibility, which reflects feelings of responsibility for the consequences of not performing prosocial behaviour. The Norm Activation Model has been proven to be helpful in predicting proenvironmental behaviour (De Groot & Steg, 2009). A manipulation targeting individuals' feeling of responsibility, and thereby addressing personal norms might be an effective way to change behaviour of Dutch students. Not only social norm did not obtain the expected results, the hypotheses regarding message frame were also not supported. The messages were directly addressed to students, for example "Veel studenten eten al vaker vegetarische maaltijden, want vlees eten draagt bij aan CO<sub>2</sub>-uitstoot en vergroot de kans op ziektes". Schneider et al. (2001) dedicated their study to the effects of message framing and ethnic targeting on convincing low-income women to let themselves be screened. Women were exposed to either a gain or loss framed video, that was either targeted to a specific ethnic group or a multicultural group. They found loss framed, multicultural messages to be most persuasive. Thus, messages targeted to everybody instead of a specific group might be more successful than messages designed for a specific group.

Accordingly, this study contains several implications. First of all, the lack of manipulation check questions. Respondents could have misinterpreted the statements without the researcher knowing. Furthermore, the research lacks an elaborate pre-test. A pre-test with more respondents could have prevented misinterpretations of the manipulation and the given statements. Moreover, respondents were mostly recruited from a social media web page meant for exchanging surveys. This might have led to respondents not taking the questionnaire seriously. Correspondingly, the respondents might not have carefully read the questions, and might have instead filled in random inconsistent answers. Another implication of this research is the incorporation of the covariate perceived behavioural control. This variable was, however, later included to the research and thus not discussed in the theoretical framework. Therefore, it was not fully clear what the role of this covariate was.

### **5.3 Reflection on methods and instruments**

This study made use of a questionnaire, in which respondents were asked to give their opinion after seeing a campaign poster. For the statements, scales from Spark and Shepherd (1992), Lockwood, Jordan and Kunda (2002), Shaw, Shiu, and Carke (2000), and Beldad and Hegner (2018) were used. Some of their items were directly copied, while other items served as an inspiration. These scales were proven to measure certain dependent variables, however, this was not the case for this experiment. That is, attitude and moral obligation loaded as one component during factor analysis. The items seemed similar, explaining the correlation. Because of the similarity, respondents possibly misinterpreted the items. Another flaw of the method was the addition of 'I don't know' as an answer option. This means that instead of seven options, there were eight options. This could have affected median and mean outcomes. In addition, later on it was

discovered the research design lacked one condition. As could be seen in table 1, a total of eight conditions were checked. A control group with no social norm and no message frame should have been included.

#### **5.4 Limitations**

The study as conducted has several points of improvement. To start with, inexperience and misinterpretation led to the absence of manipulation check questions in the actual questionnaire. These questions were necessary to test whether the independent variables have been manipulated correctly, and that the respondents understood the variables, in this case the various types of social norm and message frame. Because of these missing questions, it could not be determined whether the independent variables were recognised as they were intended. This means something different could have been measured, making this a huge flaw of the study. Secondly, the size of the sample should have been larger. A larger sample size better represents the population as a whole. The intended sample size for this research consisted out of an estimate of 200 participants. This response rate was reached, however, many of the respondents did not completely fill out the survey. This missing data made the responses not useful for analysis and were therefore eliminated. In this regard, time also formed a limitation. More time to conduct the study and to collect data would give more reliable results, since the sample size would better represent the total population. Another limitation can be found within the researcher's convictions. The researcher's vegetarian lifestyle may have contributed to a biased, less objective, tone and biased questioning with questions steering in a certain, favourable, direction. What is more, the items used in the questionnaire were adapted from papers written in English. However, the survey itself was in Dutch. Wrong translations might have led to wrong interpretations of several questions, partially explaining insignificance results. For example, the word 'advantageous' was translated in 'voordeling', which could also be interpreted as 'cheap'.

#### **5.5 Future research**

Regarding possible future research to the topic of eating style persuasion, some suggestions can be made. First of all, the target group for this research could be expanded to other nationalities besides solely Dutch students. This might provide new insights into how students in general can be convinced to adjust their eating pattern. In the same manner, it is recommended include various age groups. Maybe youngsters are more affected by injunctive social norms than, for example, adults. Furthermore, it is advised to expand the sample size. The results of this research are based on the responses of 161 students. A wider range of samples might lead to new, more accurate results. A larger sample size also increases the accuracy of the results and provides a smaller error margin. Likewise, the amount of versions per manipulation condition could be extended, meaning more versions of the same condition could be presented to participants in order to increase the validity of the study. Due to the time frame of this study, one version of each condition was created. However, campaign posters with various texts that include the social norms and message frames is recommended. For example, five campaign posters that all contain a gain frame and descriptive norm, but represented with different texts. Then, it could also be measured which campaign text is most effective. Similarly, various designs of the poster could be created, to examine which design is most appealing to the target audience. With the present time frame, the design of the campaign poster did not have the highest priority. However, a message would be better received if its presentation is appealing. Robins and Holmes (2008) investigated the importance of a first impression. Their results demonstrated that content with a higher aesthetic treatment was considered to have a higher credibility. Hence, a more appealing visual design would probably have more impact on students and can influence their attitude. Moreover, people's

character poses a great influence on their decisions. As described by Batson et al. (2016), people with egoistic properties are primarily focussed on gaining self-benefit, while people who are considered to be more altruistic are motivated to benefit another. Egoistic people might therefore not be affected by a manipulation focussed on the benefits for the environment, but are more appealed by a manipulation with a focus on personal gains. On the contrary, altruistic people might respond better to messages focussed on environmental benefits. Therefore, it is interesting for future researchers to include this character trait as a moderator of message frame. Further, message source could be an interesting variable to investigate. Vega-Zamora et al. (2019) found the credibility of a source to be a key determinant in a message's potential to persuade. Hence, it could be valuable to examine which type of source would be most credible. For instance, an expert on the field can be convincing because they know what he or she is talking about. On the other hand, a fellow student might be considered more credible because he or she is talking out of personal experience. Thus, it is recommended to include endorser as a moderator. Additionally, during the literature search, the influence of benefit presentation sequence on persuading students came up. Students might be sensitive to the order in which the benefits of changing eating style are presented. Some benefits might be more salient than others, and the best flow in which benefits are introduced might have an effect on students' attitude. Moreover, for future researchers it might also be valuable to consider modification of the manipulation. That is, instead of showing participants a campaign poster, a sticker could be stuck on 'good' food products. For example, a sticker informing the potential buyer that many Dutch students chose this food item because of its health benefits and because it was produced in an environmentally friendly way. Through this, consumers are rewarded for buying a 'good' product, which they might have picked anyway. This can make them conscious of the good aspects within their own eating behaviour, and thereby be encouraging to buy such kinds of products more often. This experiment would not only emphasize the 'good' in people, but also highlight how relatively easy it is to eat sustainable products.

## **6. Conclusion**

Change in people's eating behaviour is crucial for reducing CO<sub>2</sub> emissions. At the same time, it is necessary for people to change their food pattern in order to improve their health. Therefore, a vegetarian diet is advocated. In summary, the results of this research did not validate the hypotheses formulated at the beginning. Although the results were not significant, it is suggested that the most effective method to increase Dutch students' level of moral obligation is to combine an injunctive social norm combined with a gain frame. Furthermore, the highest intention to buy was obtained by a message including a descriptive norm and no specific message frame.

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## Appendix

### Appendix A: Literature log

Prior to starting literature research, concepts and ideas regarding the information I wanted to collect already existed. Some questions regarding the literature study were formulated:

- What are the effects of a **plant-based diet**?
- What are **drivers** to eat **sustainable**?
- How can people's **behavioural change** be enabled?
- How can **message frames** contribute to behavioural change?
- What is the effect of **social norm** on behavioural change?

The concepts that are most important are emphasized in a bold font.

In order to gain more knowledge, scientific literature was thoroughly examined. Scientific articles and books that could be found on scientific search engines were preferred. These information was often written in English. During the orienting phase, Dutch articles were also examined, in order to get a better picture of the current situation in the Netherlands. For example, research of Dutch agency I&O research, found that higher educated people are worried about the effect of climate change, but do not act according to these worries. The same applies for youngsters. Therefore, higher educated students were determined to be an appropriate target audience. Recent articles were also preferred, since this information was most up to date. However, regarding models and theories, the original source was desired.

#### Relevant terms

<b>Concepts</b>	<b>Related terms</b>	<b>Smaller terms</b>	<b>Broader terms</b>
Sustainable	Environmental friendly	Eco-friendly, environment	Sustainability
Vegan	Herbivorous, plant-based diet, vegetarian	Vegan community, cognitive dissonance, health benefits, environmental benefits	Lifestyle
Intention to buy	Purchase intention, buying intention, intention to purchase	Price, advertising, packaging, intrinsic values, external factors	Behaviour
Moral obligation	Ethical obligation, moral duty, moral responsibility, ethical motives, sense of justice	Eating less meat	Obligation
Message frame	Frame, framing effect, agenda setting	Gain frame, loss frame, emotional frame	Social framing
Environmental concerns	Climate concerns, environmental worries	CO2-emission, global warming	Environment
Regulatory focus	Regulatory fit,	Promotion-focus,	Decision making

	regulatory focus theory	prevention-focus	process
Social norm	Social roles	Injunctive, descriptive	Norm
Ethical eating	Ethical consumption, conscious eating, food ethics	Environmental concerns, Fair Trade	Ethical consumerism

#### Search actions

	Date	Database/ setnumber	Search action + technique	Total hits
1	March 1, 2019	Google Scholar	Food choices AND health beliefs OR subjective wellbeing	555,000
2	March 1, 2019	Google Scholar	Benefits AND plant-based diet OR sustainable diet AND Climate change	17,500
3	March 1, 2019	Google Scholar	Cognitive dissonance AND Vegan	1,530
4	March 12, 2019	Scopus	Sustainable food AND Climate change	3,256
5	March 12, 2019	Google Scholar	Green eating AND advantages	258,000
6	March 25, 2019	Google Scholar	Consumer attitude AND behavioural change	203,000
7	March 25, 2019	Google Scholar	Purchase intention OR intention to buy AND sustainable AND food	120,000
8	March 25, 2019	Scopus	Ethical eating OR Ethical consumerism OR Ethical consumption AND Moral obligation	4,233
9	April 4, 2019	Google Scholar	Message framing AND food purchase	77,700
10	April 10, 2019	Google Scholar	Social norm AND consumer behaviour	548,000
11	April 22, 2019	Google Scholar	Regulatory focus AND message framing OR message frame	80,600
12	May 8, 2019	Google Scholar	Self-identity AND Theory of Planned Behaviour	1,880,000

To gain the above results, numerous choices were made during the search process. The idea for this bachelor assignments topic oriented from internal interests and actualities found on news sites. This formed the foundation for further orientation. In the months that followed, adaptations to the research goal, the target audience and investigated variables were made. For example, the target audience changed from Dutch employees that lunch in staff canteens to Dutch students. The term ‘sustainable’ was often used, as well as ‘veganism’ and ‘healthy’. These were all still generic terms, that were explicitly useful for getting familiar with the subject. These terms were often combined with words, such as ‘environment’, ‘intention to buy’, ‘attitude’, ‘ethical eating’ or ‘moral obligation’. The database that was most often used to find literature for this research assignment, was Google Scholar. The primary reason for using this database includes many scientific articles, and is perceived to be one of the most substantial academic search engines (Gusenbauer, 2018). Besides, it is easy accessible and practical in use. The use of research engine was supplemented by Scopus when the inserted search terms did not result in useful scientific papers. The relevance of these papers was assessed by certain factors. First of all, if the examined paper contained many words corresponding the inserted search terms, there was a large chance the paper was relevant. In addition, the paper’s source, author and publishing year were inspected. Namely, the relevance of a paper is dependent on whether the content is credible, reliable and contemporary. For example, Icek Ajzen is a social psychologist who is best known for his research on the theory of planned behaviour. Therefore, his scientific papers are presumably relevant when studying this theory. Besides, examining actually is important in order to gain the most current information regarding the topic. A paper containing out of date information is irrelevant. For instance, the paper written by the EAT-Lancet commission was published in the end of 2018. This report thus includes up-to-date information and is therefore perceived to be relevant. When a paper was assessed to contain qualitative good information, the reports that were referenced in that specific paper were mostly also examined. These referenced authors were expected to have written reports that could be helpful as well. Through this, one combination of search terms could lead to various interesting papers, which contained new information that in their place could lead to new search terms. For next search operation, this method of finding new information content should stay in use. However, it can be useful to keep track of how the information was found. For this thesis, I did not keep track of the total amount of used search terms, their results, and the new references and search terms that were deviated from the original search term. This ‘standardization’ of literature search could be beneficial to apply in next search operations.

## Appendix B: Questionnaire

Beste deelnemer,

Allereerst wil ik je bedanken voor jouw interesse in mijn onderzoek. Mijn naam is Joëlle Willemsen en ik studeer Communication Science aan de Universiteit Twente. Momenteel ben ik hard bezig met mijn bacheloronderzoek.

Dit onderzoek richt zich op de levensstijl van studenten, en specifiek over de keuzes gemaakt met betrekking tot eten. Zo direct krijg een aantal stellingen te zien, waarna je aangeeft tot in hoeverre je het eens bent met deze stellingen. Het duurt ongeveer 10 minuten om deze vragenlijst in te vullen. De data wordt enkel gebruikt om mijn hypothesen te testen.

Door op '-->' te klikken, stem je in met jouw vrijwillige deelname aan dit onderzoek. Je kan echter altijd stoppen, zonder dat hierover vragen gesteld worden.

Er zitten in geen enkele zin risico's verbonden aan jouw deelname aan mijn onderzoek. Daarbij zal er vertrouwelijk omgegaan worden met de door jou gegeven informatie: jouw antwoorden zijn anoniem en zullen enkel gebruikt worden voor dit onderzoek.

Mocht je nog vragen hebben, twijfel dan niet contact met mij op te nemen (c.j.willemsen@student.utwente.nl).

Met vriendelijke groet,

Joëlle Willemsen

N.B. Mocht je na het invullen van de eerste vraag gelijk doorgestuurd worden naar het einde van de enquête, dan is dit met opzet (dus schrik niet).

### Part 1: Exclusion question

Hoe zou jij jezelf beschrijven?

- Ik ben veganist
- Ik ben vegetariër
- Ik ben flexitariër (bewust één of meerdere dagen per week geen vlees eten)
- Onbewust eet ik zo nu en dan geen vlees
- Ik eet eigenlijk elke dag wel vlees
- Ik vind het belangrijk elke dag vlees te eten

## Part 2: Demographics

Hoe oud ben je?

---

Wat is je geslacht?

- Man
- Vrouw
- Zeg ik liever niet

---

Wat is jouw hoogst genoten opleiding?

- Voortgezet onderwijs
- MBO
- HBO
- WO
- Anders

---

Wat studeer je momenteel?

---

Heb je een bijbaantje?

- Ja
- Nee



Doe jij zelf je boodschappen?

- Ja
- Nee

---

Hoeveel geld besteed je ongeveer gemiddeld per maand aan boodschappen?

---

Wat is jouw religie?

- Christendom
- Jodendom
- Islam
- Hindoeïsme
- Boeddhisme
- Geen
- Anders, namelijk

### Part 3: Statements regarding perceived behavioural control, willingness to comply, regulatory focus

Geef aan in welke mate jij het eens bent met onderstaande stellingen:

	Volledig mee oneens	Mee oneens	Een beetje mee oneens	Neutraal	Een beetje mee eens	Mee eens	Volledig mee eens	Weet ik niet
Ik kan zelfstandig de keuze maken om vegetarische voedingsproducten te kopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik heb complete controle over of ik wel of niet vegetarisch eet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Het is voor mij extreem eenvoudig om vegetarisch te eten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Als ik zou willen, zou ik erg makkelijk vegetarisch kunnen eten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Geef aan in welke mate jij het eens bent met onderstaande stellingen:

	Volledig mee oneens	Mee oneens	Een beetje mee oneens	Neutraal	Een beetje mee eens	Mee eens	Volledig mee eens	Weet ik niet
Ik doe graag wat ik denk wat een groep mensen wil dat ik doe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik vind de mening van anderen belangrijk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mijn keuzes hangen in geen enkele mate af van wat anderen vinden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik neig hetzelfde te doen als wat de anderen om mij heen doen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik baseer mijn acties doorgaans op wat ik denk wat de meeste mensen zullen goedkeuren	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik gebruik het gedrag van anderen als het fundament voor mijn eigen gedrag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Geef aan in welke mate jij het eens bent met onderstaande stellingen:

	Volledig mee oneens	Mee oneens	Een beetje mee oneens	Neutraal	Een beetje mee eens	Mee eens	Volledig mee eens	Weet ik niet
Ik probeer negatieve gebeurtenissen te voorkomen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik zie mezelf als iemand die voornamelijk streeft naar een 'ideale zelf', door mijn wensen en aspiraties na te jagen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben meer gericht op het voorkomen van verliezen dan op het behalen van winst	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben bang dat ik mijn verantwoordelijkheden en verplichtingen niet kan nakomen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik stel me vaak voor dat goede dingen mij zullen overkomen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik denk vaak na over hoe dingen mis kunnen gaan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik focus me meer op succes dan op het voorkomen van mogelijke mislukkingen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### Part 4: statements regarding moral obligation, attitude and intention to buy

Geef aan in welke mate jij het eens bent met onderstaande stellingen na het zien van de poster.

	Volledig mee oneens	Mee oneens	Een beetje mee oneens	Neutraal	Een beetje mee eens	Mee eens	Volledig mee eens	Weet ik niet
Ik heb het gevoel dat het mijn ethische verplichting is om vegetarische voedingsmiddelen te kopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik voel een morele verplichting om vegetarische producten te kopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik vind het immoreel om vlees te kopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Als ik kan kiezen tussen een vegetarisch en niet vegetarisch voedingsproduct, zal ik mij moreel verplicht voelen te kiezen voor de vegetarische optie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik zou me slecht voelen als ik vleesproducten eet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Het is goed om vegetariër te worden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Geef aan in welke mate jij het eens bent met onderstaande stellingen na het zien van de poster.

	Volledig mee oneens	Mee oneens	Een beetje mee oneens	Neutraal	Een beetje mee eens	Mee eens	Volledig mee eens	Weet ik niet
Vegetarisch eten is verstandig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vegetarisch eten is voordelig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vegetarisch eten is aangenaam	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vegetarisch eten is goed voor me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik heb een goedgezinde houding tegenover vegetarisch eten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mijn houding tegenover vegetarisch eten is positief	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Geef aan in welke mate jij het eens bent met onderstaande stellingen na het zien van de poster.

	Volledig mee oneens	Mee oneens	Een beetje mee oneens	Neutraal	Een beetje mee eens	Mee eens	Volledig mee eens	Weet ik niet
In de toekomst zal ik vaker voor vegetarische voedingsmiddelen kiezen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Als er in de supermarkt een vegetarisch alternatief voor een voedingsmiddel zou liggen, zou ik voor de vegetarische variant gaan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik zou vaker op een reguliere basis vegetarische voeding willen kopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben van plan om komende week een vegetarische maaltijd te gaan eten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Bedankt!

**Appendix C: Campaign posters**



Veel studenten eten al vaker  
vegetarische maaltijden,

aangezien het CO<sub>2</sub>-uitstoot  
en de kans op ziektes  
verkleint.

**Descriptive x Gain**



Veel studenten eten al vaker  
vegetarische maaltijden,

want vlees eten draagt bij  
aan CO<sub>2</sub>-uitstoot en  
vergroot de kans op ziektes.

**Descriptive x Loss**



Veel studenten eten al vaker vegetarische maaltijden.

**Descriptive x None**



Wij zouden vaker vegetarische maaltijden moeten eten,

aangezien het CO<sub>2</sub>-uitstoot en de kans op ziektes verkleint.

**Injunctive x Gain**





Wij zouden vaker  
vegetarische maaltijden  
moeten eten,

want vlees eten draagt bij  
aan CO<sub>2</sub>-uitstoot en  
vergroot de kans op ziektes.

**Injunctive x Loss**



Wij zouden vaker  
vegetarische maaltijden  
moeten eten.

**Injunctive x None**





Vaker vegetarisch eten  
verlaagt CO<sub>2</sub>-uitstoot  
en de kans op ziektes.

**Gain x None**



Vlees eten draagt bij  
aan CO<sub>2</sub>-uitstoot en  
vergroot de kans op  
ziektes.

**Loss x None**

## Appendix D: Factor analysis with the original items

Item	Factor Loadings				
	1	2	3	4	5
Ik doe graag wat ik denk wat een groep mensen wil dat ik doe		.75			
Ik vind de mening van anderen belangrijk		.76			
Ik neig hetzelfde te doen als wat de anderen om mij heen doen		.75			
Ik baseer mijn acties doorgaans op wat ik denk wat de meeste mensen zullen goedkeuren		.78			
Ik gebruik het gedrag van anderen als het fundament voor mijn eigen gedrag		.70			
Ik ben meer gericht op het voorkomen van verliezen dan op het behalen van winst			.65		
Ik denk vaak na over hoe dingen mis kunnen gaan			.67		
Ik focus me meer op succes dan op het voorkomen van mogelijke mislukkingen			.88		
Ik vind het immoreel om vlees te kopen				.80	
Als ik kan kiezen tussen vegetarisch en niet vegetarisch voedingsproduct, zal ik mijn moreel verplicht voelen te kiezen voor de vegetarische optie				.62	
Ik zou me slecht voelen als ik vleesproducten eet				.75	
In de toekomst zal ik vaker voor vegetarische voedingsmiddelen kiezen	.84				
Als er in de supermarkt een vegetarisch alternatief voor een voedingsmiddel zou liggen, zou ik voor de vegetarische variant gaan	.81				

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Ik zou vaker op een reguliere basis vegetarische voeding willen kopen	.82	
Ik ben van plan om komende week een vegetarische maaltijd te gaan eten	.79	
Ik heb complete controle over of ik wel of niet vegetarisch eet		.77
Het is voor mij extreem eenvoudig om vegetarisch te eten		.70
Als ik zou willen, zou ik erg makkelijk vegetarisch kunnen eten		.78

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