The Effects of Cultural, Social and Personal Norms on Meat Consumption and Diet

Master's thesis

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Abstract

High meat consumption is responsible for roughly 14% of all Greenhouse House Gas Emissions, which have devastating consequences on the environment. This paper analyses the various norms which influence consumers' meat eating decisions. With the use of a survey, 134 respondents answered questions regarding their meat consumption, beliefs and other key meat predictors. This thesis examines how our norms impact our dietary choices. It takes into account both weekly meat consumption and diet groups, e.g. vegetarian and non-vegetarian. The main predictors for meat consumption are not social norms but rather, belief in meat as necessary, cultural norms and personal norms such as gender and age. Recall of having seen Plant-Based Meat Alternatives (PBMA) and the amount of meat given as a child is also somewhat influential.

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I- Introduction

Throughout most of human history, meat was a common but rare and luxurious food product. The period following the Second World War was marked by a large increase in wealth and population size. Between 1960 and 2020, the world population increased from 3 to 7.5 billion and global GDP increased from 1.4 to 85 trillion current US dollars causing an increase in consumption, including meat (World Bank, 2021). During this period, meat production increased from 70 million tonnes per year to 350 million tonnes per year. This high demand originates mostly from developed countries with an average consumption between 75 and 120 kg/person/year. However, demand for meat is also increasing drastically in emerging countries with a growing middle class, such as Brazil and China. Brazil is now the fourth largest meat consumer per capita and China is the largest in absolute terms (Our World in Data, 2018). Excessive meat production and consumption poses several ethical and scientific problems. First, demand has caused intense factory farming to become common practice and is now under increasing scrutiny by animal welfare activists and NGOs for its mistreatment of animals. In addition, high intakes of meat, especially red meat, poses various health issues such as certain forms of cancer and cardio-vascular problems (James et al, 2021) . Finally, and most importantly for this research topic, the overconsumption of meat has severe negative repercussions on the environment by draining natural resources, for example in the form of overfishing or deforestation for land-clearances. Meat production is an important contributor to GHG emissions because it requires various high-emitting inputs: land clearance, natural GHG emissions from livestock, land erosion and transport (Laestidius et al, 2016). Meat production and consumption is now responsible for 14.5% of global emissions (FAOUN, 2017).

Despite ample evidence surrounding the issues of meat and its overproduction, most consumers in wealthy and emerging countries continue to over-consume meat. For example, the UK department of health reports that meat consumption needs to drop by approximately 70% in order to reach healthy levels (Apostolidis & McLeay. 2016). One important cause of sustained high intake is because it has gained a large significance in our dietary cultures and norms and is now often regarded as the base of a meal (Elzerman et al 2011). Despite the increasing media attention, policy reports and academic literature highlighting the dangers of over meat consumption, research that takes consumers' behaviour perspectives has been limited and little is known about consumers' meat preferences(Apostolidis & McLeay. 2016). Because meat still plays a central part in a meal, one's social surroundings and norms have a great impact on their meat consumption and vice-versa. Many academics argue that meat consumption behaviour is greatly shaped by our norms (Higgs, 2015).

Our norms have great influence over our beliefs and consumption behaviour. These norms can take various shapes such as injunctive, cultural, social, etc (Nguyen, & Platow, 2021). Many

social scientists have argued that a large component of food and therefore meat consumption is cultural (Swatland, 2010). For example, many religious and national holidays are marked by the consumption of certain foods (consumption of turkey on Christmas and Thanksgiving, lamb on Eid). Another way norms dictate our eating behaviour is in the way our social lives are built. Food has played an important part in our social lives. Meals are often enjoyed as a family or with friends as a simple bonding activity (Kley et al, 2022). Our personal norms and how we self-identify has also been linked to different levels of meat consumption. For example, meat consumption has come to serve as a symbol for "masculinity, high socioeconomic status (SES) (Allen & Baines, 2002). Meat consumption is thus representative of much more than just a source of calories and hedonistic pleasure (Kheel, 2004). Despite increased acceptance for vegetarian (veg) and vegan diets (veg), there are still widespread negative perceptions generated by those who are opposed to these new norms (Cole & Morgan, 2011). Because of varying norms and awareness linking meat to GHG emissions and animal welfare problems, some consumers choose to reduce or eliminate their consumption of meat while others continue to eat large amounts (Hargreaves et al. 2021).

This research thesis focuses on understanding how people's norms influence their meat consumption and vice-versa. This thesis begins with an overview of the literature concerning meat consumption and its relation to cultural, social and personal norms. The second part explains the data and research design. This is followed by displaying and explaining the results. Finally, the paper discusses the results and assesses potential policy instruments that can be used to reduce meat consumption based on norms.

II- Literature review

Norms are most commonly defined as rules or expectations to which people adhere. (S. Higgs 2015) suggests that populations adhere to norms because it gives individuals a sense of belonging. Belonging to the same social group appears to be important in the modelling of eating behaviour. In terms of food consumption, they provide information about safe and tasty foods. In addition eating the same foods is a behaviour that supports cooperation between members of a group (Tomasello, 2008). Norms also shape our beliefs and morals which have great influence on our consumption choices. For example, concern for the environment and identification as a meat-eater influences perception of meat reductions effectiveness as a mitigation strategy and willingness to reduce meat consumption (Ginn, & Lickel 2020). Chapman & Lickel (2016) also indicate a negative relationship between amount of meat consumed and environmental concern. Meat consumption is also influenced by the image we wish to display to others. Vartanian, Herman, & Polivy, (2007) demonstrated that people adjust their eating behaviour to shape their public image and concluded that with the use of stereotypes about consumption patterns, we

convey an image of ourselves in accord with that stereotype. For example, eating a small portion conveys a feminine and positive image that can be displayed to the others with whom we eat (Pliner & Chaiken, 1990).

Because norms heavily influence our consumption behaviour - including meat - it is important to dive deeply into the literature regarding the different types. There are various ways to separate norms such as injunctive and normative. In this case I will study the literature differentiating between levels within society including cultural (e.g. religious, national celebrations), social (e.g. friendship groups) personal (e.g. demographic, self-perception). In addition, these different norms influence each other. For example, the national traditional holiday meal (cultural), which often includes meat, may impact the consumer's self-perception as a meat-eater (Brennan *et al.*, 2016).

2.1. Cultural Norms

Cultural consumption of meat is found to be involved in the early development of language, social groupings and religions (Swatland, 2010). Following certain norms is more likely when there is greater shared identity with the norm referent group. This is part of the reason why large groups adhere to common cultural norms (Higgs, 2015). Cultural norms are high in societal level (macro level) and usually include a large number of people, for example from the same country or religious background, often living close together. Food, including meat, is often a staple of national, religious or other cultural identity (Kemper & Ballantine 2020). Many also choose to not eat meat because of their national or religious identity, for example most of the Hindu population in India is vegetarian (Fischer, J. 2016). In their study, Kemper & Ballantine (2020) found that overall, larger adherence to national cultural norms positively predicts both favourable attitudes towards eating meat and intentions to eat meat. Because many of the cultural traditions celebrated by individuals are often celebrated in the presence of others (e.g. friends and family), cultural norms often spill onto social norms.

2.2 Social norms

Social norms reinforce feelings of belonging to a group or the avoidance of social disapproval (Higgs, 2015). Because eating often occurs in social situations, the social norms of those around us have a powerful effect on both the amount and type of food we choose to eat. Higgs (2015) modelled how the eating choices of our dining partners amounts to similar choices in terms of type of and amount of food that we eat. Various studies have demonstrated that eating with others increases food intake. For example, an analysis of diaries conducted by de Castro and de Brewer (1992) showed that the number of calories consumed increased by 75% when the individual ate with others. In another study, G.W Horgan et al (2019) found the amount of meat

eaten was greatest when eating with family members, more than when alone or with other non-family members. In addition, the probability of eating meat increased when eating out compared to at home. Herman (2015) also found similar results when analysing the social facilitation when eating. First, people eat more in groups than when alone because social eating is a way to enhance friendships. Second, the effects of social facilitation are greater with family members and friends than with strangers. Finally, Herman suggests a positive relationship between the amount of food eaten per individual and size of the group eating together. For these reasons, it is important to consider the amounts eaten when alone and in different social groups such as friends, family and colleagues.

Social pressure is one of the main reasons why many consumers eat meat despite having the intention to reduce their intake. Meals are a social activity enjoyed by almost all individuals and meat is, in most cases, one of or the main course. Many fear that halting or reducing their consumption would lead to a certain form of exclusion from these social occasions, usually with their friends and family. Happer et al, (2019) found that many consumers in Brazil and in the US do not wish to stop eating meat because they fear it will marginalise them at family Barbeque events. This leads to a "*social feedback loop"* that justifies meat consumption for individuals (Nyborg et al., 2016). Changing the way consumers view meat consumption in its social form is a potential method to reduce consumption. Studies have shown that social pressure to pursue environmentally friendly behaviour can be achieved. For example Delmas & Lessem 2014, Sintov et al 2016) demonstrated that inserting a social component such as competition and feedback successfully reduced dormitory energy use ranging from 22 to 295king of CO2 per year per subject. This same type of social pressure may be used to reduce meat consumption. Sparkman and Walton (2017) showed that participants who received information such as the growing number of vegetarians, were more likely to purchase meatless lunches.

2.3. Personal norms

The cultural and social implications in meat consumption has a large influence on our personal norms and self-identity. When eating meat is normal and encouraged in one's country, religion, social circle, family and colleagues, this influences one's personal norms who then sees eating meat as normal and part of their self-identity (Higgs, 2015). Personal norm and self-identity are found to have a large influence on consumption in general, including meat. A personal norm is the individual conviction that acting in a certain way is right or wrong (Hunecke et al., 2010). In the case of meat consumption, this can be for example the belief that reducing meat consumption is morally desirable, or on the contrary, an unhealthy/unnatural behaviour. (Steg & Vlek, 2009), demonstrated that personal norms are positively correlated to pro-environmental behaviour. (Lacroix & Gifford 2020) also found that moral identity also plays a large role in meat eating habits. Belonging to certain different demographics also shapes our personal norms. For

example, eating meat is often associated with masculinity and strength due to its naturally high concentration in protein and is one reason why women eat less meat than men in both amount of meat and number of vegs (Rothgerber, H. 2013). Another important predictor for meat consumption is level of education. Highly-educated people are more often vegs, partly because educated people are usually part of a higher socio-economic class and therefore can dedicate more of their income to their moral beliefs. Age is also found to be a strong predictor with older generations representing a much smaller number of vegs (Morrison et al, 2011).

2.4. Emerging group of diets

Because of these various norms between cultures, social groups and individuals, different diets regarding meat consumption and other animal products have emerged. In addition, higher overall levels of wealth enables consumers to dedicate more of their time and purchasing power to products aligned with their ideals and morals (Park, H. Y., & Meyvis, T. 2011). Most of the literature studying vegetarians and vegans does not separate the different vegs because it is both irrelevant and these two groups often cluster together in terms of socio-economic background and other demographics (gender, age, etc). Allès et al (2017) show that the main difference is that vegans are mainly motivated by animal welfare while vegetarians are motivated by environmental concern. The overall increase in the numbers of vegs has also garnered backlash from certain people and even anti-veg beliefs. Some meat consumers are so convinced about their eating habits that following a veg diet is wrong and unnatural. A few reasons for holding these beliefs are consideration of meat as a necessary component for a healthy diet, that “eating meat is part of who I am”, and cultural reasons (Cole & Morgan 2011). Additionally vegs threaten the moral disengagement used by meat-eaters which is another source of stigmatisation (Bastian & Loughan, 2017). Moral disengagement is the process by which an individual convinces him/herself that ethical standards do not apply to him/herself within a particular situation or context (Bandura, 2011). In their study, Jared Piazza et al (2015) found that the four Ns (normal, natural, necessary and nice) shape the majority of reasons why consumers eat meat and help them engage in moral disengagement regarding meat. Crompton and Kasser (2010) found that informing consumers about the environmental implications of meat consumption which would necessitate a change in behaviour challenges the norms and social-identity surrounding consumption. When presented with new information challenging these norms, consumers often negate this information in the form of moral disengagement in order to retain a positive self-image all the while consuming meat (Goel and Sivam 2014).

III- Research design

3.1. Survey

The data was obtained through a survey sent out on the social media platforms Instagram, Facebook and other survey websites such as survey circle and survey swap and accessible to anyone over the age of 18. The observations are not formed by a set of people from a particular geographical location. The survey was available in both French and English. After eliminating those that did not finish the survey and those that did not answer "10" on a slider question in order to make sure the questions were being truly answered, the number of respondents dropped to 134 (N=134). Rstudio software was used to conduct the analysis.

3.2. Variables

The variables used in the study are based off of the questions asked of respondents in a Qualtrics survey. The first set of questions are to control for covariate factors often found in other surveys regarding meat consumption. These questions asked the weekly percentage of "meals eaten that are cooked at home (as opposed to ready meals, takeout, restaurant, etc)", "Weekly percentage of expenses dedicated to food consumption" and "Growing up (eg age 0-18) what was the weekly percentage of meals prepared by your primary caregivers (eg parents, babysitter) that contained meat?". The question regarding the number of meals that are cooked is based on G.W Horgan et al (2019) and is asked in order to control for the increased amount of meat people often eat when the food is not prepared themselves, e.g.: restaurant, delivery. The budget dedicated to food consumption is used to control for wealth as there is a general consensus in the literature that there is a negative correlation between levels of wealth and percentage of budget dedicated to food consumption. Finally the amount of food prepared by caregivers controls for endogeneity in the model. This is because it is not clear whether becoming veg leads to higher social interactions with other veg or vice versa. Using the amount of meat eaten growing up is an exogenous control variable which will help control for differences in initial amounts of meat eaten.

Following this, the respondents were asked to rate out the importance of eating with others to their social life, and the importance of the food they eat to their cultural identity. The next set of questions pertained to their specific beliefs about climate change and meat consumption. These questions also helped to understand if people were knowledgeable about the link between meat consumption and GHG emissions which is a big contributor to over-consumption (Clonan. A et al 2015). These questions all asked the respondents to rate on a scale from 0 to 10 how much they agree with the various statements. These statements include "Climate change is the most pressing issue we are facing", "Meat is necessary to a healthy diet", "Meat production is an

important contributor to climate change", "I have seen Plant-Based Meat Alternatives (PBMA) in most mainstream supermarkets", "PBMAs are a suitable substitute to meat". The last question asked the respondents to answer ten in order to verify that the respondents were paying attention to the questions being asked of them. These questions were based on the article by Cordts et al (2014) and He et al (2020).

The next part takes the form of a decision tree, separating self-proclaimed vegs from non-veg. Vegs are asked to rank the reasons why they choose to be veg. Non-veg are asked if they have ever seriously considered significantly reducing their meat consumption and if they have been veg inthe past. Answering yes to any of these two questions led them to rank the different reasons for making that choice. In all of these questions, the participant ranks the following reasons: health, financial, social, animal welfare, environment and missing meat. Note that the question regarding topping being does not contain environmental or animal welfare reasons because respondents would not find this to be a reason to continue eating meat but does contain missing meat. These criteria were based on Vranken et al., (2014). This also helped to distinguish diets into more categories than simply veg and non-veg, as a large number of the non-veg respondents have considered reducing or quitting their meat consumption or were veg in the past.

Following this, respondents were asked to state the percentage of vegs in their immediate social circle (close friends and family) when they were 18 and presently. These two questions assess a potential statistical relation between change in close social circle and change in diet. In this case, close friends in family were specified as this is more specific and will give more accurate results than to give a general number of people they know or once knew. Those that answered that 0 percent of close friends and family who are veg were converted to 1 in order to compute the percentage change between the age of 18 and presently.

The final section of the survey asked about demographic features such as age, education, gender and also a general summary of their political beliefs on a scale from -5 to 5. These were all found to have significant correlation with diet and personal norms.

Table 1: Abbreviations

Abbreviation	**Full Question or statement**	**Type**	**Number in correlation matrix**
Language	"Language"	Multiple choice	NA
Meat_one_week	"Have you eaten meat at least once this week?"	Yes/No	NA
Meat_four_month	"Have you eaten meat more than four times this month?"	Yes/No	NA
meals_cooked	"Percentage of meals that are cooked as opposed to bought (restaurant, ready-meals)"	Percentage	1
perc_of_expenses	"Percentage of expenses dedicated to food"	Percentage	2

perc_meatmeals_care	"Percentage of meals containing meat prepared by your primary caregivers"	Percentage	3
Food_social	"Food is an important aspect of my social life"	Scale (0:10)	4
Food_cultural	"Food is an important aspect of my cultural identity"	Scale (0:10)	5
CH_most_issue	"Climate change is the most pressing issue we are facing"	Scale (0:10)	6
Meat_necessary	"Meat is necessary for a healthy diet"	Scale (0:10)	7
PBMA_supermarkets	"I have seen PBMAs in most mainstream supermarkets"	Scale (0:10)	8
PBMAs_suit_sub	"PBMAs are a suitable substitute for meat"	Scale (0:10)	9
Meat_prod_imp	"Meat production is an important contributor to climate change"	Scale (0:10)	10
currently_veg	"Do you consider yourself currently vegetarian/vegan"	Yes/No	NA
weekly_meat	"Weekly meat consumption	Number	11
serious_stop_reduce	"I have seriously considered considerably reducing or quitting my meat consumption"	Yes/No	NA
perc_veg_18	"Percentage of close family and friends that are vegetarian or vegan when you were 18"	Percentage	12
perc_veg_present	"Percentage of close family and friends that are vegetarian or vegan currently"	Percentage	13
age	"Age"	Number	14
Gender	"Gender"	Multiple choice	NA
Degree	"Degree"	Multiple choice	NA
Pol_views	"How would you summarise your overall political views"	Scale (-5:5)	15
Percchange_veg	Percentage of perc_veg_18 and perc_veg_present	Percentage	16
age_perc	Interaction variable for age and percentage_change	NA	NA

3.3. Descriptive statistics

Table 2

Descriptive Statistics of Main Variables

Statistic	N	Mean	St. Dev.	Min	Max
meals_cooked	134	69.4	27.7	0	100
perc_meatmeals_care	134	64.0	27.5	0	100
Food_social	134	6.5	3.1	0	10
CH_most_issue	134	7.6	2.3	0	10
Meat_necessary	134	3.2	3.2	0	10
PBMA_supermarkets	134	7.9	2.9	0	10
Meat_prod_imp	134	8.1	2.4	0	10
weekly_meat	134	5.6	6.0	0	30
perc_veg_18	134	15.2	19.2	1	91
perc_veg_present	134	33.1	24.4	1	100
perc_change_veg	134	466.7	860.7	-96.6	6400
age	134	29.8	12.0	19	68
Pol_views	134	-2.3	2.2	-5	5

There is an overrepresentation of younger people, with 29 being the average age and 25 being the median (table 2). The education level is higher than the overall population with almost all of the subjects having completed at least a Bachelor's degree. Part of this may be because most of the respondents are younger and younger populations are currently more educated than their predecessors. This may also be because most of the respondents are from my social circle and therefore mostly finished at least a Bachelor's type education. 55% and 42% of the participants are female and male respectively. The rest are either transgerder, non-binary, or in the 'prefer not to say' category. Vegs are most often young and/or female and/or educated. 73.5% of respondents answered 'No' on whether or not they consider themselves veg. Despite making a strong majority, it is significantly less than the average rate of developed countries. As a frame of reference, approximately 92% of the Dutch population is not veg (Statista, 2022). When grouping the observations in terms of diet 33.8% of females are vegetarian while 11.9% are male which is a strong difference between the two genders.

Table 3

Differences Between Diets

Variable	Currently veg: No	Currently veg: Yes
Average of meals_cooked	68.3	72.4
Average of perc_of_expenses	49.6	53.0
Average of perc_meatmeals_care	67.9	52.3
Average of Food_social	6.4	6.6
Average of Food_cultural	4.2	3.7
Average of CH_most_issue	7.3	8.2
Average of Meat_necessary	4.1	0.6
Average of PBMA_supermarkets	7.5	9.1
Average of PBMAs_suit_sub	5.5	7.8
Average of Meat_prod_imp	7.9	8.9
Average of perc_veg_18	12.7	22.5
Average of perc_veg_present	28.9	45.4
Average of age	31.2	25.6
Average of age_veg	NA	17.7

Vegs and non-vegs differ in most categories except in the following (table 3). Both deem meals as a central part of their social life and cultural identity equally important with both groups assigning approximately 6.4 and 4 respectively to each category. Politically, the two groups are very similar with veg respondents marginally more left leaning than non-veg, with an average of -2.25 and -2.68, the overall average being -2.36. Veg and non vegs cook roughly the same percentage of meals (approx 70%) and spend roughly the same percentage on food (approx 50%). Vegs and nonvegs differ in the amount of meat given growing up with a 20% point difference between the two groups. Vegs believe that both CH is a pressing issue and meat production is an important contributor more than non-vegs. It is important to note that non-vegs deem meat production as a key contributor to climate change 7.9/10, only one point less than their veg counterparts. This may be in part due to cognitive dissonance employed by many non-vegs in order to justify meat consumption. Differences between the two groups can be found in how they view PBMAs. There is a clear difference between vegs and non-vegs on seeing PBMAs in supermarkets, 9.1/10 for vegs and 7.5 for non-vegs, and belief in PBMAs as a suitable

substitute to meat, 7.8 for vegs and 5.5 for non-vegs. Unsurprisingly, there is a large difference in belief in meat as necessary with vegs giving an average rating of 0.6/10 and non-vegs giving an average of 4.1/10. Vegs know significantly more vegs both when they were 18 and presently, however, both groups have similar changes in percentage of vegs in both absolute and relative terms between . The increase in the number of vegs between 18 and presently is not surprising because there has been an overall increase in vegs in developed countries, the majority of the locations where the people responded.

Large differences emerge when separating the observations by language (Table 4). The option to answer the question in French was available and gives insight into the cultural differences. Those who answered the survey in France deem cultural aspects of food more important than those that answered in English. This notable difference may also be because those who answered in English are more likely to be more international than those who answered in French. English-speakers are more supportive of (6.6 vs 4.2) and surrounded by PBMAs (8.3 vs 6.8). 21% of French respondents are veg while 27.5% of english-speaking respondents are veg. This is despite English and French speaking language groups having approximately the same proportions of gender representation and average age. French respondents make up only 16.2% of total respondents which implies that the effect of language would have minimal effect on the overall analysis.

Table 4: Differences in diet

Differences Between Language

Variable	English	French
Average of meals_cooked	69.1	70.9
Average of perc_of_expenses	50.1	52.3
Average of perc_meatmeals_care	62.3	73.1
Average of Food_social	6.3	7.3
Average of Food_cultural	3.7	6.2
Average of CH_most_issue	7.4	8.1
Average of Meat_necessary	3.0	4.5
Average of PBMA_supermarkets	8.2	6.6
Average of PBMAs_suit_sub	6.5	4
Average of Meat_prod_imp	8.1	8.2
Average of Weekly_meat	5.5	7.8

Average of perc_veg_18	16.4	8.5
Average of perc_veg_present	35.5	20.0
Average of age	30.0	28.3

3.4. Variable selection

When regressing all independent variables very few coefficients are statistically significant and in the logistic and MNL regressions, the coefficients are inflated due to multicollinearity. In order to better assess the relations between my independent and dependent variables, some of the dependent variables were selected to form a smaller, more explicative model. This selection is based on the correlation and hierarchical clustering between the variables.

3.4.1 Correlation

The correlation matrix (table 4) shows that few of variables have a correlation higher than 0.5 implying there is little multicollinearity between the variables. However most of those with higher correlations are in agreement with the literature and hypotheses (Steg & Vlek, 2009, Rothgerber, H. 2013). The amount of meat prepared by primary caregivers has a negative relationship with the number of vegs both at the age of 18 and presently. Their Pearson correlation coefficients are -0.4 and -0.2 respectively. The consideration for food as important to social and cultural life both have small correlations with the other variables, implying that their impact on diet may be limited. Finally, belief in meat as necessary is highly correlated with many of the other variables. For example, its Pearson correlation between belief in climate change as the most pressing issue, weekly meat consumption, belief in PBMAs as a suitable substitute is -0.41, -0.49, 0.47, respectively. Belief that meat is an important contributor to climate and belief that climate change is the most pressing issue has a Pearson correlation score of 0.5.

Table 5: Correlation matrix

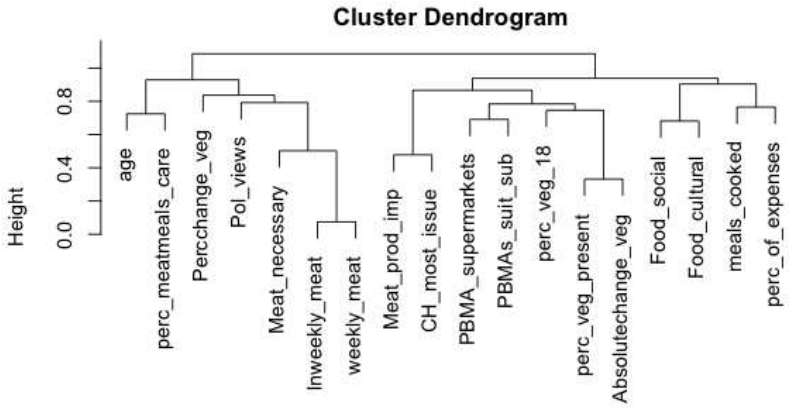
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1.00	0.19	0.17	0.12	0.07	0.06	-0.03	0.04	0.05	0.07	0.01	-0.05	0.04	0.09	-0.06	-0.08
2	0.19	1.00	-0.11	0.08	0.13	0.23	-0.11	-0.10	0.10	0.18	0.02	0.09	0.09	-0.29	-0.01	-0.02
3	0.17	-0.11	1.00	0.09	0.02	-0.06	0.16	0.02	-0.17	-0.13	0.17	-0.42	-0.20	0.26	0.10	0.07
4	0.12	0.08	0.09	1.00	0.29	0.09	0.02	0.12	0.01	0.12	-0.03	0.00	0.05	-0.11	-0.12	0.05
5	0.07	0.13	0.02	0.29	1.00	0.13	0.11	-0.13	-0.17	0.04	0.06	-0.01	-0.05	-0.07	0.04	-0.01
6	0.06	0.23	-0.06	0.09	0.13	1.00	-0.35	-0.03	0.33	0.48	-0.22	0.13	0.17	-0.15	-0.26	-0.19

7	-0.03	-0.11	0.16	0.02	0.11	-0.35	1.00	-0.19	-0.52	-0.43	0.50	-0.24	-0.38	0.00	0.31	0.09
8	0.04	-0.10	0.02	0.12	-0.13	-0.03	-0.19	1.00	0.36	0.18	-0.21	0.14	0.26	-0.08	-0.18	0.07
9	0.05	0.10	-0.17	0.01	-0.17	0.33	-0.52	0.36	1.00	0.29	-0.31	0.24	0.30	-0.14	-0.24	-0.07
10	0.07	0.18	-0.13	0.12	0.04	0.48	-0.43	0.18	0.29	1.00	-0.24	0.10	0.07	-0.14	-0.28	-0.04
11	0.01	0.02	0.17	-0.03	0.06	-0.22	0.50	-0.21	-0.31	-0.24	1.00	-0.26	-0.16	0.21	0.19	0.27
12	-0.05	0.09	-0.42	0.00	-0.01	0.13	-0.24	0.14	0.24	0.10	-0.26	1.00	0.64	-0.22	-0.12	-0.34
13	0.04	0.09	-0.20	0.05	-0.05	0.17	-0.38	0.26	0.30	0.07	-0.16	0.64	1.00	-0.06	-0.07	0.07
14	0.09	-0.29	0.26	-0.11	-0.07	-0.15	0.00	-0.08	-0.14	-0.14	0.21	-0.22	-0.06	1.00	-0.02	0.07
15	-0.06	-0.01	0.10	-0.12	0.04	-0.26	0.31	-0.18	-0.24	-0.28	0.19	-0.12	-0.07	-0.02	1.00	0.08
16	-0.08	-0.02	0.07	0.05	-0.01	-0.19	0.09	0.07	-0.07	-0.04	0.27	-0.34	0.07	0.07	0.08	1.00

3.4.2. Cluster dendrogram

The cluster dendrogram (graph 1) shows the similarity between the independent variables. In order to reduce the number of variables in the model due to lack of observations, one variable is selected from each pair. For example, I have chosen the percentage of meals cooked instead of the percentage of meals cooked and percentage expenses dedicated to food. In the case of age and percentage of meals containing meat as a child, I have chosen both variables because the ladder is also used as a control for endogeneity in the model due to some becoming very young.

Graph 1



The smaller models contain the variables: The importance of food for one's social life, the percentage change of veg close friends and family, percentage of close friends and family that

are veg currently, belief in meat as necessary, belief in meat as an important contributor to climate change, age, Gender, percentage of meals containing meat given growing up, and political views.

3.5. Regression

Every regression contains two models, one with all the variables (large) and one with the sub-selected variables (small). Comparing the two models will also assess robustness of the variables. In order to control for heteroskedasticity in the models, robust standard errors were used. All numerical variables have been scaled as some questions were on a scale of 0 to 10 and others on a scale from -5 to 5.

3.5.1. Linear

The regressions which used a continuous dependent variable were conducted using OLS. These dependent variables include the natural log of weekly meat consumption and percentage of veg close friends and family presently. This will give insight on how respondents characteristics impact their meat consumption and social environment. Vegs were not asked how much meat they consume per week, therefore, in order to convert weekly meat consumption to natural log, vegs were coded as consuming meat once per week. Despite linear regression giving insight on the amount of meat and the change in social entourage, this does not show how the variables may influence someone's diet category.

3.5.2 Logistic and Multinomial

Logistic regression with binomial distribution was used in order to study how much the variables influence diet category. The dependent variable for logistic regression was whether or not the respondent considers themselves veg. In addition, because many of the respondents who do not consider themselves veg but are considering reducing their meat intake, becoming veg or have even been veg in the past, separation of non-veg into two diets was appropriate for this analysis. Respondents who have not considered reducing/quitting their meat consumption or who have not been veg in the past were placed in the category "meat-eater" while all other non-vegs are placed in the category "hesitant". Multinomial regression is used in order to understand the variables that impact these three diets.

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IV-Results

4.1. Linear Regressions

Table 6: Linear Regression 1&2

	lnweekly_meat		perc_veg_present	
	Large	Small	Large	Small
Meat_necessary	0.248**	0.498***	-0.054	-0.346***
	(0.116)	(0.097)	(0.069)	(0.095)
perc_meatmeals_care	0.034	0.103	-0.146*	-0.167*
	(0.059)	(0.066)	(0.078)	(0.091)
age	0.098	0.193	-0.368***	-0.020
	(0.182)	(0.124)	(0.065)	(0.083)
Gender Male	0.349**	0.550***	-0.036	-0.214
	(0.162)	(0.182)	(0.095)	(0.183)
Pol_views	-0.003	-0.004	0.041	0.075
	(0.060)	(0.069)	(0.046)	(0.083)
Language: Français	0.456***	0.485***	-0.079	-0.281
	(0.148)	(0.164)	(0.148)	(0.178)
Meat_prod_imp	0.047	0.070	0.031	-0.090
	(0.085)	(0.070)	(0.053)	(0.081)
PBMA_supermarkets	-0.090	-0.101	0.004	0.184***
	(0.076)	(0.068)	(0.052)	(0.070)
meals_cooked	-0.005	-0.081	0.106*	0.085
	(0.058)	(0.068)	(0.064)	(0.077)

Food_social	-0.017	-0.001	0.024	0.052
	(0.077)	(0.088)	(0.061)	(0.085)
Percchange_veg	0.190	0.262	0.082	0.085
	(0.495)	(0.264)	(0.110)	(0.057)
perc_veg_present/lnweekly_meat	-0.010	0.028	0.059	0.097
	(0.075)	(0.079)	(0.108)	(0.131)
Constant	-1.253***	-0.323***	-0.646	-0.010
	(0.228)	(0.105)	(0.463)	(0.132)
N	134	134	134	134
R^2	0.682	0.561	0.785	0.286
Adjusted R^2	0.612	0.505	0.730	0.195
Residual Std. Error	0.531 (df = 109)	0.632 (df = 118)	0.420 (df = 109)	0.793 (df = 118)

Notes: *<0.01 , **<0.05, *** < 0.001

The first linear regression measures how much variation in weekly meat consumption can be attributed to the dependent variables. The R squared in the large model is 0.682 and 0.561 in the small, meaning that even in the small model, the variables explain more than half of the variation in the model. When regressing all variables on the natural log of weekly meat consumption, the only statistically significant variables are belief in meat as necessary (90%) gender (95%) and Language (99%) Belief in meat as necessary is one of the largest predictors in both the large and small model. Its coefficients are statistically significant at the 95% confidence level with all variables and 99% with selected variables, however these are not robust with a large increase from 0.248 in the large model to 0.498 in the small model. Unscalling the coefficient in the small model gives a coefficient of 0.167, implying that an increase in one unit of belief as necessary leads to a 17% increase in meat consumption. The coefficients of the dummy variable Gender are highly statistically significant, with a 95% confidence level in the large model and 99% in the small model. The coefficient is 0.349 in the large model and 0.550 in the smaller which is larger than all other variables. The coefficient for the dummy variable Language is highly statistically significant at the 99% confidence level in both models. The coefficients are notably robust, only decreasing from 0.456 to 0.485 between the large and small models.

The second linear regression shows how much variation in percentage of current close friends and family who are veg are attributed to the dependent variables. The R squared differs significantly between the large and small model, with 0.785 and 0.286 respectively. In the small model, belief in meat is highly statistically significant at the 99% confidence level and has a coefficient of -0.346, much larger than all other variables. Unscaling the variable, gives a coefficient of -2.81, implying that a one unit increase in belief in meat as necessary leads to a decrease of 2.81 percentage points of close friends and family that are veg. The coefficient percentage of meals containing meat eaten while growing is statistically significant at the 90% confidence level. In addition, the coefficients in both models are negative with a value of -0.146 in the large and -0.167 in the small, however their impact is quite small. When unscaling the variable, the coefficient is 0.15 this means that a 1 one unit increase in meat eaten while growing only leads to a decrease of 0.15% percentage of points of veg close friends and family

4.2. Logistic and Multinomial Regression

Table 7: Logistic and Multinomial Regression

	Currently_veg		hesitant	meat_eater	hesitant	meat_eater
	Large	Small	Large	Large	Small	Small
Food_social	16.185***	0.120	-39.781	-39.864	-0.086	-0.162
	(0.487)	(0.242)	(45.655)	(45.656)	(0.365)	(0.366)
perc_veg_present	21.159***	-0.002	-72.247	-72.464	-0.086	0.100
	(0.729)	(0.243)	(52.133)	(52.133)	(0.324)	(0.333)
Percchange_veg	53.745***	-1.699	-133.339***	-133.370***	1.660	1.807
	(2.122)	(1.918)	(20.197)	(20.197)	(2.204)	(2.253)
age_perc	-48.189***	1.675	116.766***	117.354***	-1.492	-1.963*
	(2.633)	(2.245)	(9.444)	(9.444)	(2.627)	(2.664)
Meat_necessary	-3.484***	-2.494**	36.017	36.224	2.441***	2.626***
	(0.927)	(1.017)	(57.152)	(57.152)	(0.690)	(0.692)
perc_meatmeals_care	-11.677***	-0.504*	32.784	32.988	0.356	0.607*
	(0.654)	(0.272)	(46.331)	(46.331)	(0.342)	(0.348)
age	-1.490	-1.112***	-22.343	-22.971	1.041	1.216
	(1.240)	(0.406)	(172.355)	(172.355)	(0.754)	(0.754)
GenderMale	27.356***	-0.742	-50.452***	-51.137***	0.472	0.927
	(0.819)	(0.832)	(0.319)	(0.319)	(0.774)	(0.798)
Pol_views	29.945***	0.415	-84.227**	-84.363**	-0.412	-0.433
	(0.769)	(0.295)	(44.159)	(44.159)	(0.355)	(0.364)
Language: Français	79.654***	0.517	-279.837***	-281.121***	-1.302	0.020
	(1.631)	(0.889)	(0.418)	(0.418)	(0.988)	(1.080)
Meat_prod_imp	8.056***	-0.139	4.830	5.413	-0.143	0.407

	(0.516)	(0.396)	(43.578)	(43.578)	(0.447)	(0.458)
PBMA_supermarkets	0.779	0.743***	-2.724	-2.738	-0.743*	-0.761*
	(0.818)	(0.284)	(39.632)	(39.632)	(0.448)	(0.450)
meals_cooked	8.803***	0.177	-3.448	-3.665	-0.055	-0.280
	(0.399)	(0.273)	(37.452)	(37.452)	(0.317)	(0.423)
Constant	-64.945***	-2.318***	-80.775**	124.658	1.159**	1.642**
	(1.681)	(0.646)	(55.620)	(55.690)	(0.582)	(0.717)

Notes: *< 0.01, **<0.05, *** < 0.001

The logistic model measures the likelihood of being veg depending on the dependent variables. The coefficients are inflated in the large model due to multicollinearity. Several of the variables are statistically significant in the small model. Considering meat as necessary is a strong predictor on diet and is also highly statistically significant at the 99% confidence level in the small model. Its coefficient is -2.494, a much larger magnitude than all other variables. Recalling seeing PBMAs in mainstream supermarkets is statistically significant (99%) and has a coefficient of 0.743, significantly smaller than other variables in the model. The coefficient is very robust when compared to the coefficient of the larger model, 0749. Age is statistically significant (99%) and has a coefficient of -1.112 implying that older respondents are less likely to be veg. The variable amount of meat given growing up is statistically significant at the 90% confidence level and its coefficient is -0.504 meaning its impact on diet is significantly less strong than belief in meat as necessary and age.

The MNL model measures the likelihood of being part of the hesitant or meat-eater diet, depending on the dependent variables. The coefficients are also inflated in the large model due to multicollinearity. In this regression model, several of the variables are statistically significant. The smaller model shows that the belief in meat as necessary is again highly statistically significant (1%) both when switching from the baseline, veg, to hesitant or meat-eater. Its coefficients are strongly positive, 2.441 and 2.626 and much larger than all other variables, meaning it is more influential on diet adherence than the other variables. Recalling having seen PBMAs in mainstream supermarkets is statistically significant at the 90% confidence level when going from a veg to a hesitant or meat-eater diet and their coefficients are -0.743 for hesitant and -0.761 respectively. The absolute value of the coefficients are smaller than most other statistically significant variables in the model. The coefficient percent of meat meals growing up is statistically significant at the 10% confidence level when going from veg to meat-eater, but not statistically significant from veg to hesitant. The coefficient is equal to 0.607

V-Discussion and Policy implications

5.1. Meat necessary - Health

Belief in the necessity of meat for a healthy diet is one of the strongest predictors in the models and has a strong positive influence on weekly meat consumption and diet. A one unit increase in belief in meat as necessary (on a scale from 1 to 10) leads to a 17% increase in meat consumption, a sizable amount. Belief in meat as necessary also greatly increases the log-odds of belonging to a higher-meat consuming diet in both probability type models. Part of this can be

due to moral disengagement for meat which may take the shape of health justification, e.g. meat has essential nutrients to human health (Graça et al, 2016). This high consumption in meat is detrimental not only to the environment, but personal health as well. Showing the negative health effects of high meat consumption may be a way to reduce meat consumption for those with the highest intake, especially those who eat over the suggested limit, over approximately 100 grams per day (NHS, 2020). Government bodies already attempt to reduce meat consumption for health reasons. Denmark for example introduced a tax on saturated fats in 2011 which in large part is added to meat products and the Netherlands is considering implementing a meat tax in order to make half of protein intake come from plant-based sources (US Department of Agriculture, 2022). However, there are numerous examples of public backlash towards policies and governments for addressing health issues for eating (Ockwell et al., 2009). One way around this could be the mandating of health and nutritional labels as this would not financially restrict the choices of the consumer. Specifically, the labels may show the dangers of high meat intake by displaying the high amount of saturated fats and their link to cardiovascular problems (Grasso et al 2014). The UK is considered a European front-runner for promoting nutrition labelling on food and especially front-of-pack signposting (Apostolidis & McLeay. 2016).

5.2. Norms and attitudes towards PBMAs

Ability to recall seeing PBMAs in mainstream supermarkets is not statistically significant when regressing on the amount of meat consumed per week, however it is when regressing on the number of vegs someone knows and diet category. Increased sight of PBMAs in supermarkets decreases the probability of belonging to meat-eating diets. PBMAs do not have a strong impact on diet compared to other statistically significant variables but still have some influence over directing people's diet. However, seeing PBMAs likely to be endogenous in the model because it may be dependent on diet as someone who is veg is also more likely to notice PBMAs in the supermarket as these are the type of ingredients they are looking for. The same logic applies to meat-eaters. This may lead to biassed coefficients in the model. Nonetheless, their impact is still significant on diet and PBMAs may be used in order to encourage more consumers to become veg. In order to make PBMAs more visible in supermarkets, one solution may be to change the relative price between meat and PBMA through subsidies for example. This would make PBMAs more visible in supermarkets to those especially for those with low income (Cuffey, 2022). This is because PBMAs are on average more expensive than classic meat (Zhao, 2022). This additionally has consequences on the perceptions people have of PBMAs. Many consumers hold negative attitudes towards PBMAs because its consumption is seen as pretentious, unnatural and a way for those with more disposable income to improve their self-perception (He. J et al 2020). Altering the negative attitudes and norms associated with PBMAs as an expensive food item is essential to increase its appeal, especially to lower-income households. Some popular fast-food chains such as Burger King and Mcdonald's have recently unveiled various vegetarian and vegan food items (Dunn C. et al, 2021). This may normalise consumption of PBMAs in a

non-fancy setting. In order for PBMA consumption to become a common product in a consumer's diet, the quality of PBMAs as well as the social and personal norms held by consumers must improve (He. J et al 2020).

A second way of changing PBMA perception using norms would be with the extensive use of labelling on PBMA food packaging and ads, displaying the various benefits of PBMAs in relation to meat (Katare et al). Meat has mainly three external costs which include the degradation of health, animal welfare and the environment. Consumers vary on which of these costs is most important to them to minimise or eliminate (Apostolidis & McLeay. 2016). This means there are several opportunities to encourage a decrease in meat-based diets by indicating all of the benefits included with the purchase of PBMAs.

5.3. Gender Norms

There is a general consensus in the literature linking masculinity to higher meat consumption (Love & Sulikowski, 2018; Vandermoere et al 2019). This same link is statistically significant when inferring weekly meat consumption on gender but not when inferring diet. In fact, gender is the strongest predictor on meat consumption behind belief in meat as necessary. In order to encourage reduction in meat consumption in the general population, it is important to address this population in particular. Meat's naturally high concentration in protein leads men to associate meat with manliness and strength (Rothgerber 2013). Reducing meat consumption in men would entail changing the masculin norms associated with its consumption. This may take the form of descriptive information, e.g. explaining that an increasing number of men are choosing to reduce their intake. It is important however, to take into account the messenger effect (Byarli, 2012). The information given may vary in efficiency to modify norms depending on what or who delivers it. For example, Cruwys et al. (2012) reported that a perceived eating norm affected behaviour when it came from a socially proximal group (fellow university students), but not when it came from a less proximal group (students from a rival university) (Higgs, 2015). In order to convince men to reduce their consumption, it is important that men, particularly stereotypical masculin men, deliver the message/information encouraging reduction in meat consumption.

5.4. Breaking routine norms

The results in the logistic and MNL model indicate that an increase in the amount of meat given as a child decreases the likelihood of becoming veg in the future. This may be partly because this creates a habit of eating a large amount of meat starting at a young age (Kemper & Ballantine 2020). Particularly with meat consumption, habit has been found to play a large role in predicting

norms and consumption behaviour (Holtz, G. 2013). Interventions to reduce meat consumption would need to include a focus on breaking routine, convention, and the everyday constraints of resources, infrastructures and institutions" (Laestidius et al, 2016). Tackling this issue would also enable future generations to reduce their intake. One potential solution would be to encourage habitual meat-eaters to reduce their intake by providing better information on ingredients and how to prepare plant-based foods which is identified as a barrier towards a more plant-based diet (Pohjolainen et al., 2015). This may work additionally for a large number of consumers as Lea et al. (2005) showed that 58 per cent of participants in their study participants were in the precontemplation stage of change towards eating a plant-based diet. Giving better information about meat alternatives may especially help to convince older people to reduce their meat consumption. This is because older generations hold more positive attitudes towards meat and less towards PBMAs (Hwang et al 2020). This can be translated in the regression models as age is also a strong predictor of meat intake with older respondents eating more meat and being less veg. Change in diet is difficult, especially for older generations as they are more used to their diet (Hwang et al 2020). The responsibility of giving better information on alternative ways to cook high-protein non-meat foods can fall on the Government, PBMA companies but also NGOs, for example in the form of ad campaigns. This would be an especially good mission for NGOs as a number of environmental NGOs explained that encouraging behaviour change without alienating people was a difficult balance, particularly given the strong cultural significance and norm influence of meat consumption and personal aspect of food consumption (Laestidius et al, 2016). Instead of encouraging consumers to simply eat less meat, NGOs may inform consumers about meat alternatives and how to prepare them. NGOs and governments can give information not directly encouraging behaviour change, but rather about meat alternatives and recipes.

5.6 Social Norms

Even though both vegs and non vegs deem the social aspect of food to be equally important, the second linear regression shows that their attitudes towards PBMAs and meat's health benefits seem to impact their social environment. Various studies have demonstrated how the social environment impacts meat consumption and vice-versa. For example, Cheah et al (2020), demonstrated that social environment was a major barrier when individuals refuse to change their diet. This same relation can be found in the second linear regression. The coefficients for belief in meat as necessary and recalling having seen PBMAs in supermarkets are positive. However, there again may be endogeneity within the model due to the percentage of close friends and family who are veg having a potential impact of recalling PBMAs and belief in meat as a suitable substitute. This may lead to inflated coefficients. The percentage of meals containing meat given as a child has a negligible effect on the percentage of vegs in our close friends and family. Surprisingly, weekly meat consumption did not have a statistically significant effect on the dependent variable. Overall, the percentage of veg close friends and family that someone has is not greatly impacted by the variables used in the model as very few are

statistically significant and those that do have a coefficient that is moderate or negligible magnitude.

5.7 Cultural Norms

The descriptive statistics indicate that French-speaking respondents are less familiar and less favourable towards PBMAs. This is in agreement with the article by Siegrist. M et al (2020) who compared various countries of various income levels and found that French subjects were much less open towards PBMAs and cultured meat. In addition, French respondents deem food in general to be more important to their culture with a 2.5 higher rating than other respondents. The first model also shows that answering the survey in French (French respondents) is associated with an increase in meat consumption. This difference in meat consumption and views towards PBMAs between French and English speaking respondents is likely based on differing cultural eating norms and traditions. These findings are also in agreement with the literature. Vranken, et al (2014) indicates that differences in cultures and traditions can explain differences in meat consumption between countries, and Melendrez-Ruis et al (2019) demonstrates that France's traditional focus on meat could be a barrier to promoting healthier and more sustainable diets. Interventions on cultural grounds are necessary in order to encourage meat reduction towards those that deem meat as important to their culture Shifting the overall cultural norms towards a more plant based diet meat is also likely to achieve the longest effect in terms of time (Kemper & Ballantine 2020). In the case of France, having a veg option for traditional national dishes such as tarar or croque-monsieur in restaurants would be a way to promote veg cultural norms without necessarily changing the traditional dish.

VI-Limitations

This research paper has analysed the norms with the largest impact on both diet group and terms weekly meat consumption. Gender and cultural norms were demonstrated to have a sizable impact on meat consumption, but belief in meat as necessary is by far the most important factor in the models. There are however a few limitations in the study. Firstly, the data included subjects of varying ages between 18 and 68 but the models do not control for the overall number of vegs, which has greatly increased since the early 21st century (Hargreaves et al. 2021). Not controlling for this may cause biassed results when regressing on the percentage change of vegs someone knew between 18 and presently (See table 11). Controlling for the increasing percentage of vegs each year would have maybe better explained potential cause and effect relations regarding social norms which were found to have minimal effects in this study. Secondly, controlling for heterogeneity between recalling PBMAs and the dependent variables would perhaps give more accurate coefficients concerning that variable.

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Appendix

Table 8: Regression 1 &2, variables not selected for smaller model

	lnweekly_meat	**perc_veg_present**
	Large	Large
Meat_one_week: Yes	0.615***	0.119
	(0.205)	(0.392)
Meat_four_month: Yes	0.582***	-0.050
	(0.160)	(0.238)
perc_of_expenses	0.025	-0.194*
	(0.072)	(0.103)
Food_cultural	-0.019	0.023
	(0.063)	(0.054)
CH_most_issue	-0.080	0.006
	(0.069)	(0.084)
PBMAs_suit_sub	0.050	0.047
	(0.086)	(0.061)
Degree: Bachelors	0.272	0.558
	(0.242)	(0.371)
Degree: Graduate degree	0.145	0.350
	(0.262)	(0.363)
Degree: Secondary School	0.103	0.021
	(0.279)	(0.335)
Notes:	*< 0.01, **<0.05, *** < 0.001	

Table 9: Logistic regression and MNL regression, variables not selected for smaller model

	Logistic	**MNL**	
	Currently veg	hesitant	meat_eater
Meat_one_week: Yes	-16.206***	243.821***	39.248***
	(1.208)	(55.540)	(55.620)
Meat_four_month: Yes	-68.348***	184.472***	184.499***
	(1.568)	(55.660)	(55.661)
perc_of_expenses	-18.405***	28.502	29.072
	(0.583)	(81.854)	(81.854)
Food_cultural	-17.126***	40.894**	41.402**
	(0.662)	(18.160)	(18.160)
CH_most_issue	4.764***	-13.390	-13.445
	(0.596)	(59.671)	(59.671)
PBMAs_suit_sub	13.838***	-20.007	-20.358
	(0.456)	(107.488)	(107.488)
DegreeBachelors	20.390***	-37.008***	-37.038***
	(1.112)	(0.431)	(0.431)
DegreeGraduate degree	44.703***	53.771	49.604
	(1.961)	(118.696)	(118.698)
DegreeSecondary School	-37.152***	53.771	49.604
	(1.428)	(118.696)	(118.698)
Notes:	*< 0.01, **<0.05, *** < 0.001		

Table 11: Linear regression on percentage change of close friends and family that are veg

	Percchange_veg	
	Large	Small
Food_social	-0.036	-0.027
	(0.027)	(0.027)
Meat_necessary	0.022	0.021
	(0.036)	(0.035)
perc_meatmeals_care	0.090**	0.070**
	(0.035)	(0.033)
age	0.012	0.005
	(0.079)	(0.067)
GenderMale	-0.077	-0.053
	(0.066)	(0.065)
Pol_views	-0.006	-0.016
	(0.031)	(0.029)
LanguageFrançais	-0.084	-0.085
	(0.059)	(0.061)
Meat_prod_imp	0.009	0.023
	(0.029)	(0.029)
PBMA_supermarkets	-0.002	-0.002
	(0.024)	(0.022)
meals_cooked	-0.017	-0.004
	(0.029)	(0.026)
currently_veg: Yes	0.052	-0.031
	(0.116)	(0.098)
lnweekly_meat	-0.194	-0.174
	(0.120)	(0.114)
age_lnweeklymeat	0.206	0.203
	(0.137)	(0.130)
Meat_one_week: Yes	0.126	
	(0.096)	
Meat_four_month: Yes	0.011	
	(0.083)	
perc_of_expenses	0.019	
	(0.026)	
Food_cultural	0.024	
	(0.033)	

CH_most_issue	0.027	
	(0.032)	
PBMAs_suit_sub	0.025	
	(0.036)	
Degree: Bachelors	-0.114	
	(0.108)	
Degree: Graduate degree	-0.072	
	(0.115)	
Degree: Secondary School	-0.126	
	(0.115)	
Constant	-0.275*	-0.261***
	(0.144)	(0.054)
N	134	134
R^2	0.325	0.287
Adjusted R^2	0.176	0.196
Residual Std. Error	0.263 (df = 109)	0.237 (df = 118)
Notes:	*< 0.01, **<0.05, *** < 0.001	

This table shows the variation of percentage change of close friends and family who are veg that is attributed to the variables. The only statistically significant variable is the amount of meat the subject was given while growing up.