Nudging Consumers towards plant-based options when eating out using environmental facts

Seminar Paper

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Abstract

To combat climate change, greenhouse gas emissions must be reduced. A significant proportion of these emissions come from food production, particularly livestock and fisheries. Shifting to a plant-based diet has been identified as a potential solution to reduce emissions. The aim of this study is to investigate whether providing a sustainability fact as a menu nudge can influence consumers to choose plant-based meals when eating out. The study used an online survey to assess participants' preferences for meat, vegetarian and vegan options.

Participants were randomly assigned to two different surveys. One included the nudge and the other served as a control survey.

When looking at the overall results and performing a chi-square test, the sustainability information appeared to have a significant effect on consumer choice. When the sustainability information was given, a higher percentage of participants chose plant-based meals. These results suggest that the nudge was successful in influencing consumer behaviour towards greener choices.

A closer look at the results reveals a difference between male and female participants. Women were more likely to be influenced by the nudge than men. In both groups, the meat option was chosen most often, so the effect occurs when people are choosing between vegetarian and vegan, and in participants who were more open to a meatless alternative to begin with.

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GHG	Greenhouse gas

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1 Reducing Greenhouse Gas Emissions by Changing to a Plant-based Diet

Food production accounts for 26% of global anthropogenic greenhouse gas emissions. (Poore & Nemecek, 2019) This can be broken down into 36% for livestock and fisheries, 27% for crop production, 24% for land use and 18% for supply chains. (Hannah Ritchie, 2019) However, when it comes to solutions to reduce greenhouse gas emissions, the focus is on the use of renewable energy sources, increasing the efficiency of applications and moving to low carbon transport. How to decarbonise agriculture seems less clear. When comparing the greenhouse gas emissions impacts of animal products with their plant-based substitutes, even the lowest impact animal products typically exceed those of the plant-based alternative. (Poore & Nemecek, 2019) A report on the Spanish population and its carbon footprint showed that the food-related emissions of people who follow a vegetarian or pescetarian diet are on average 35% lower than those of people who frequently eat meat. However, when looking at the 53% reduction potential between vegans and frequent meat eaters, it becomes clear that changes in diet have an impact on reducing greenhouse gas emissions. (Proyecto Cartografia Carbono, 2021)

Therefore, this study aims to investigate a method that tries to influence consumers to choose more plant-based alternatives. The scenario of ordering food while eating out will be considered. The following research question will be answered. Does a quote stating a fact about the environmental differences between diets influence consumers to choose plant-based meals over meat alternatives when eating out?

This question will be answered by conducting a quantitative analysis through an online survey targeting a convenience sample group. The null hypotheses "Including the nudge in menus does not increase the number of people choosing plant-based meals compared to when people are presented with a menu without the nudge" will be accepted or rejected as a result of this work.

This study will first look at the theory of nudging and identify a research gap when it comes to nudging people towards plant-based options. This will lead to the design and implementation of the survey. The findings will then be presented and discussed and the limitations and opportunities for further research will conclude this study.

2 Nudging in the Food Industry

This chapter introduces the concept of nudging, examines previous research on different methods of nudging people towards plant-based alternatives, and identifies a research gap for informational nudges aimed at raising people's environmental awareness.

2.1 The Concept of Nudging

According to the Cambridge dictionary the literal meaning of the word nudge is “to encourage or persuade someone to do something in a way that is gentle rather than forceful or direct”. (Cambridge dictionary) So to qualify as a nudge, the intervention must be a gentle encouragement that meets three criteria. First, a nudge must not restrict freedom of choice; second, it must be easy and cheap to avoid; and third, a nudge is not a mandate. In their book Nudge, Thaler and Sunstein give the example that placing fruit on a shelf at eye level in a grocery store is a nudge, but banning unhealthy products from the store is not . (Thaler & Sunstein, 2008, p. 6)

In its report on behaviour change, the House of Lords defines four categories of nudges. The first, 'changes to the physical environment' (1), can be illustrated by the example given above. The way in which products are placed on shelves in supermarkets and the order in which they are displayed influence consumer behaviour when choosing what to buy. The second category is called "changes in standard policy" (2). Saying that a person is an organ donor by birth and must actively change this default setting if they do not want to be a donor leads to more organ donors in a population. "Use of social norms and salience" (3) is the third category of nudges and describes a comparison with one's peers. Comparing one's energy consumption with that of one's neighbours could lead to a reduction in consumption. The fourth category is 'information provision' (4). Information about nutrition or about the different types of animal husbandry on food products influences purchasing behaviour. (House of Lords, 2011, p. 10)

In the following chapter, existing studies on nudging consumers towards plant-based options when eating out are mapped against the categories described above to identify the research gap, which represents the content of this study.

2.2 Nudging in the Food Industry and Identifying a Research Gap

Looking at studies that aim to influence consumers to make specific food choices when eating away from home, many studies to date fall into categories 1 and 2. Examples of 'changing the physical environment' include the placement of a convenient food line in a school canteen that offers only healthy foods, while the less convenient line also offers unhealthy food options. According to research conducted by Hanks, Just, Smith and Wansink (2012), this approach resulted in a remarkable 18% increase in students' consumption of healthy foods and a significant reduction of nearly 28% in their consumption of less healthy options.(Hanks A. et al., 2012). Another study, which examined whether the position of items on a touch-screen menu influenced soft drink choices, can be seen as an example of changing the environment to influence choice behaviour. By changing the placement of soft drink icons on touchscreen kiosks, the study found that changing expected locations can influence consumer choice. In this particular case, moving the Coca-Cola icon to the last position and the Coke Zero icon to the first resulted in a decrease in Coca-Cola sales and an increase in Coke Zero sales. (Schmidtke et al., 2019)

For the second category, changes to the default policy, Hansen et al conducted a study of lunch choices at conferences. This randomised trial at three conferences found that changing the default lunch option to vegetarian significantly increased the choice of vegetarian options at the first conference from 2% to 87%. Similar effects were found at the other two conferences. Men were more likely to opt out of the vegetarian default, but overall participants responded positively to the nudge. (Hansen et al., 2021) Another study investigating the effect of introducing a plant-based dish of the day successfully influenced participants 85% of the time. (Perez-Cueto, 2021)

An example of the third category, 'use of social norms and salience', is a study that used a within-subject design with two conditions: one in which participants ate lunch with a vegetarian confederate and another in which they ate lunch alone. Participants experienced both conditions in a randomised order, with a one-week interval between sessions. The study did not find a significant effect on the total number of times the different meals were chosen, but for participants who reported being more inclined towards a vegetarian diet, they chose more vegetarian products when paired with a vegetarian lunch companion. (Hammami et al., 2023)

Looking at the fourth category, 'Provision of information', most research has focused on the provision of nutritional information on products and dishes. For example, a study of the food choices made by parents for their children when nutritional information is provided on menus showed that increasing parental empowerment through the provision of nutritional information could be a viable approach to encouraging healthier food choices by parents for their children in fast food outlets.(Jae-Young Ahn et al., 2015)

Nudging appears to be most effective among those segments of society with limited access to information and lower levels of education. However, it can be seen as unfair, as those who are knowledgeable and able to identify nudges can take advantage of the efforts of the majority who are not. These situations often arise when policymakers aim to achieve collective goals such as climate change mitigation and sustainability. Consequently, transparency becomes a crucial factor to consider, as some authors criticise nudging for its potential manipulative nature and the potential abuse of power by governments. (Gonçalves et al., 2021)

When considering the impact of the food industry on the environment, this study aims to investigate whether providing participants with environmental facts comparing the impact of vegan diets to meat diets can influence their choice behaviour towards the vegan option. This nudge can be seen as a hybrid nudge, combining categories three and four. It provides information in the form of a short, easy-to-understand fact and tries to reach people's environmental consciousness. The aim is to be clear and transparent, and to see if this type of nudge can have a significant effect without trying to manipulate people's choices, but to provide information that enables them to make an informed choice. This has been identified as a research gap that this study will attempt to fill. As stated in the introduction to this paper, dietary changes are needed to reduce greenhouse gas emissions from food production. Therefore, the following chapters will introduce the methodology used in this paper and present the results.

3 Methodological Approach on the Quantitative Analysis

A quantitative study using an online survey was conducted to determine whether the inclusion of an environmental fact on the menu could have a significant impact on the choice between meat, vegetarian and plant-based meals.

3.1 Sample Size and Composition

For this study, we used convenience sampling to reach out to participants. To calculate the required number of participants according to the study's design and requirement, we did an a-priori Power analysis for the difference between two independent means (two groups) (α= 0.05, power = 80%, and medium effect size). The output parameters obtained showed a degree of freedom of 100 and 102 total number of required samples with 51 each for both groups. A total of 160 people clicked the link to fill out the survey out of which only 132 filled out the entire survey and the rest dropped out. The final sample consisted of 132 participants with 65 in the intervention group and 67 in the control group.

The mean age of the participants was 26, ranging from 20 to 58. There were 67 (approx.51%) male and 65 female(approx49%) participants in the sample. The educational background of the participants was assessed for different levels completed bachelor's 49(37%), master's 55(42%). Ph.D. 4(3%), Vocational training 16(12%), and others 8(6%). All the participants had variability among their diet preferences from all 132 respondents 90 (68%) chose an omnivore diet choice, 22(17%) opted for vegetarian (including all dairy products and eggs) and 4(3%) selected a vegan option.

3.2 Procedure and Design

The survey was designed using Qualtrics software (Qualtrics XM). Participants were asked to choose their preference from 5 different menus. The study was conducted between the 12th of June 2023 to the 19th of June 2023. The language of the study was English. There were different types of questions, a few were to be filled, some were multiple choice, and a few were Rank your choice questions. To successfully participate in the survey the participants were required to have access to a phone, laptop, or tablet.

Participants were randomly assigned to two different groups of the of control and intervention condition. After filling in all the required metrics like Age, Education, Gender etc. the participants were assigned to a five-day meal choice preference in a menu from different cuisines which included Pasta on Monday, Sushi on Tuesday, Burger on Wednesday, Burritos & Bowls on Thursday and finally Pizza on Friday. The design on menu had six options to choose from out of these six two were two options including meat, two vegetarian and two vegans options. The options were put in alternative manner as Vegan first then Vegetarian choice followed by non-vegetarian option respectively.

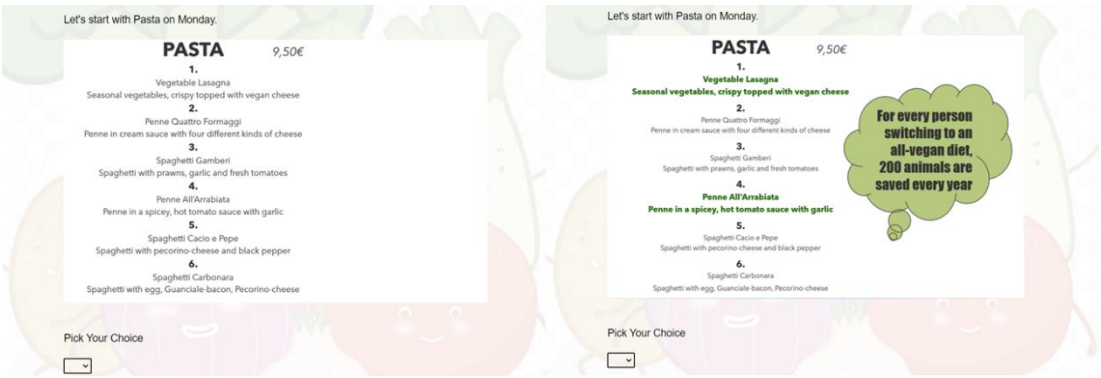

Figure 1: Survey design in control condition (left) and in nudging condition (right)

The control survey had a simple design with all option having same font size and color also there is a flat price for all the option in the menu participants were required to choose only one option. In figure 1 on the right the control condition is illustrated. Figure 1 to the left shows Nudging condition. Those who encountered this condition while participating in the survey were expected to be nudged towards the vegan option. Participant saw vegan option colored in green and font size of the discretion of the dish was also bigger than the other two options. To influence the choice of people a fact was also displayed in the nudging condition which had facts displayed, stating the benefits of switching to Vegan diet has with respect to sustainability and environment context. These facts combined with the option could have a lasting effect on the choice of people was hypothesized.

All five environmental facts that were used in the intervention are displayed in Appendix 1.

4 The Effect of the Nudge

This chapter presents the results of the online survey and determines whether the null hypothesis can be rejected, and thus whether a significant effect of the nudge has been found.

4.1 Comparison of Test and Control Group

Looking at the control group, the participants chose the meat option in 41% of all choosing opportunities. The vegetarian dish was chosen 32% of the time and vegan options accounted for 27%. In the intervention Group the meat options accounted for 40% of all choices, vegetarian meals were chosen 22% of the time and vegan dishes 38% of the time. Figure 2 shows the distribution of the absolute numbers each category was chosen in the control and in the intervention group.

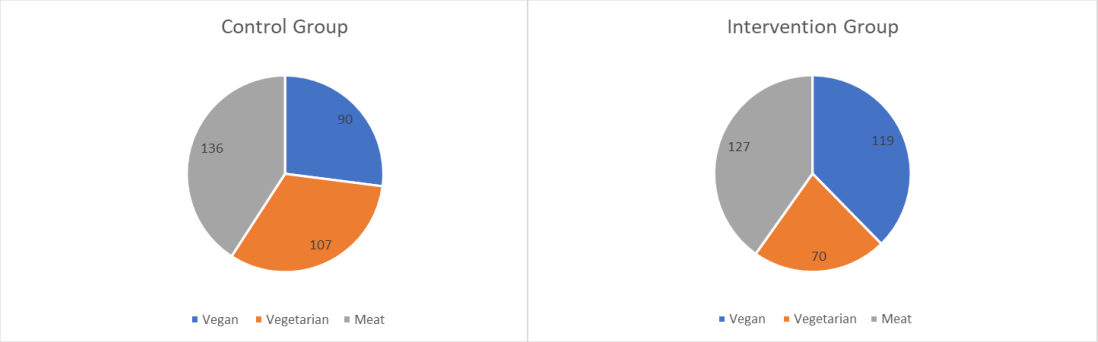

Figure 2: Comparison of nudged and control group and their respective choice behaviour

The next step was to compare the different choices, taking into account the diets chosen by the participants in the survey. A table showing the absolute numbers of dishes chosen, taking into account the participants' diets, can be found in Appendix 2. Figure 3 shows the number of choices by dish and diet in the intervention group.

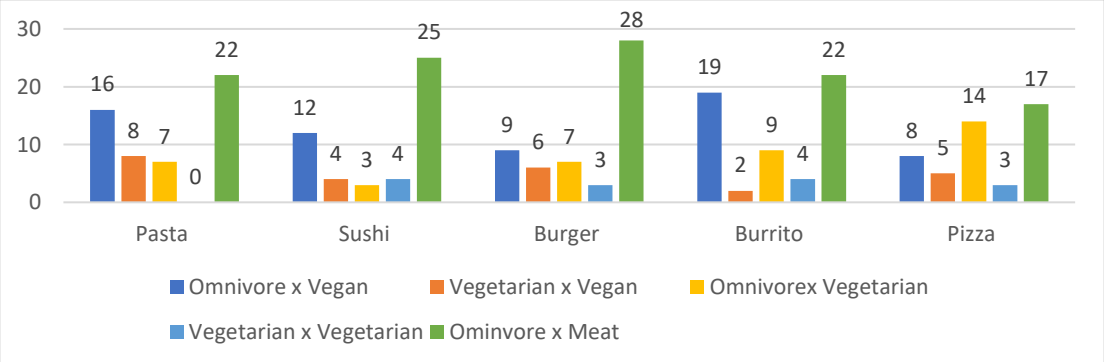

Figure 3: Intervention Group - Choice behaviour considering the diet. (Diet x Choice)

All participants who chose a vegan diet in the survey were not included in this observation.

Comparing the data set of the intervention group with that of the control group (see Figure 4) shows that omnivores chose the meat option in most cases, regardless of whether they were in the control group or the intervention group. However, omnivores were more likely to choose vegan meals than vegetarian meals when presented with the nudge. In the control group, the opposite was true. When participants on a vegetarian diet were presented with the nudge, there were slight differences between the individual dishes, but no significant changes between the two groups.

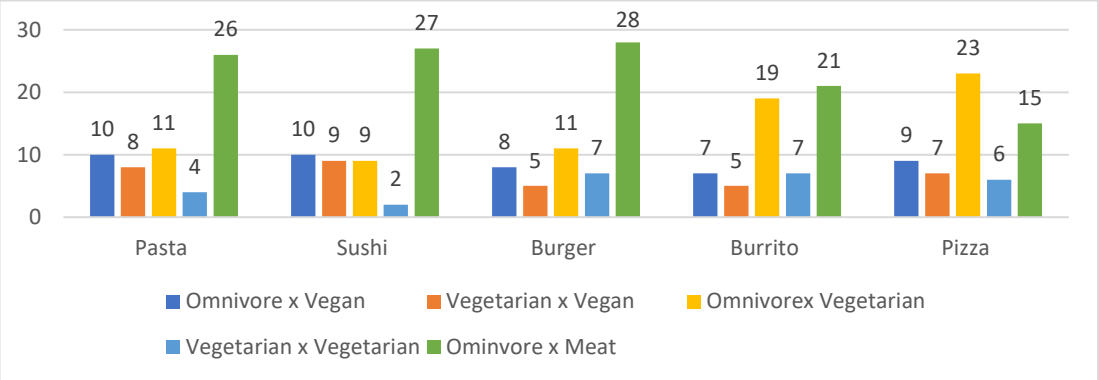

Figure 4: Control Group - Choice behaviour considering the diet. (Diet x Choice)

In a third step the differences between male and female participants where investigated. After the initial analysis of the of the descriptives of both control and intervention group we saw that there is more significant effect of nudging in female participant than in male participants, so we decided to do separate analysis on the effect nudge had on male and female participants respectively.

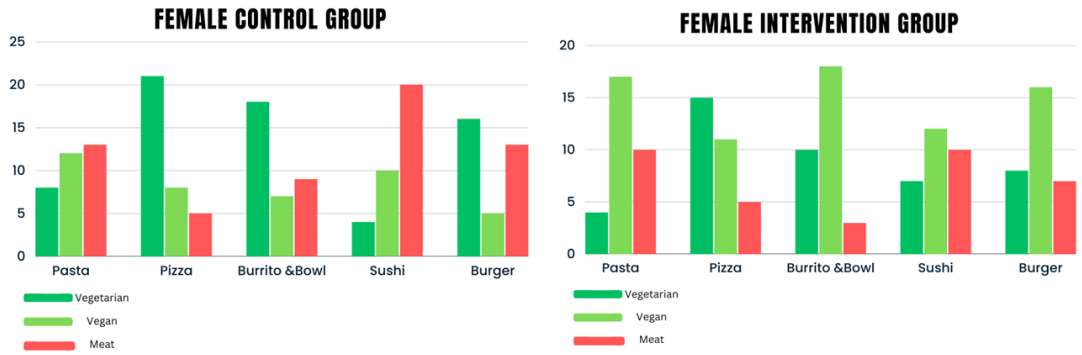

Figure 5: Comparison of female participants in the two groups

In figure 5 we can see that without nudging also female participants were already more interested in vegetarian options in most of the cases. From the intervention group graph we can draw illustrations that when they were nudged towards selecting vegan options it had a significant impact on their decision making. Eventually making them go for vegan choices. Looking at the graph we can also say that nudge had a effect on their choice selection and the vegetarian choices got converted to vegan also there was a significant decrease in female going for meat options.

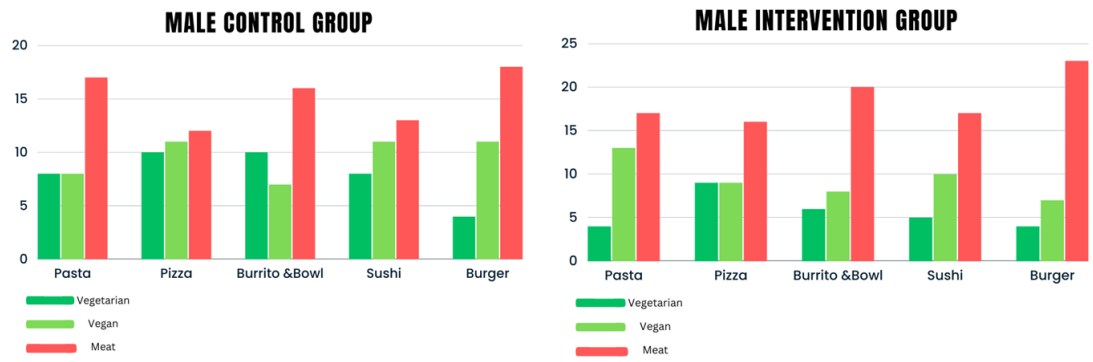

Figure 6: Comparison of male participants in the two groups

In figure 6 when we look at control group there is a clear indication that without nudging men always tend to go for meat options and very little chances are there that they opt for vegetation or vegan options. Surprisingly when men are nudged as we se in the intervention group graph they have negligible effect on their choices in the menu. If we consider the case of especially Burrito & Bowl and Burger we can also say that nudging had a negative impact on the choice preference of male as they went for more meat options as compared to the control condition.

4.2 Rejecting the Null Hypothesis with Chi Square Test

To reject or accept the null hypothesis 'The inclusion of the nudge in menus does not increase the number of people choosing plant-based dishes compared to when people are presented with a menu without the nudge', a chi-square test was performed.

The Chi-square test is used to test the independence between two categorical variables. There are four requirements that need to be met before running the chi-square test. First, the collection of observed and expected observations should be done using a random sampling technique. Second, the sample should consist of independent members or items to ensure that the results of one item do not influence the results of others. Thirdly, each group included in the test should have an adequate number of

items, with a minimum threshold of 10 items per group, to ensure statistical reliability. Finally, the overall sample size should be large enough, with a minimum of 50 items, to provide robust statistical power and allow meaningful analysis. (Nihan, 2020). All four requirements were met when conducting this study.

To find the critical Chi-square value, the first step is to calculate the degrees of freedom.

$$df = n - 1 = 3 - 1 = 2$$

Where n equals the number of categories for the dependent variable. In this case the choice of a vegan, vegetarian or meat option (3 Categories). With the calculated degrees of freedom and the degree of significance α, which is set to $\alpha = 0.05$, the critical Chi-square value is obtained from a table. With the table shown in Appendix 1 the critical Chi-square value equals 5.991. That means that obtaining a value above 5.991 would consequently lead to rejecting the null hypothesis.

Figure 7 shows the contingency table of this study comparing the choices of the control group with the choices of the group that was nudged. With these results a Chi-square value of 11.602 is obtained, which results into rejecting the null hypothesis.

Contingency Tables

	Diet			
Intervention control	Meat	Vegan	Vegetarian	Total
Control	136	90	107	333
Intervention	132	119	70	321
Total	268	209	177	654

Chi-Squared Tests

	Value	df	p
X^2	11.602	2	0.003
N	654		

Figure 7: Contingency table comparing control and intervention group. Created in JASP.

As a conclusion the two groups are independent, and the nudge had a significant effect on the intervention group.

5 Discussing the Results

The aim of the study was to gain a better understanding of the effect of nudging in daily menus in restaurants. The main objective was to know the effect of nudging, based on the provision of information, on increasing the choice of vegan products. The experimental analysis showed that there was no significant change in preferences for meat options, which could be due to the fact that the menus were for different cuisines, so there is always the possibility that people have a fixed preference when they choose that particular option. This setup can be further explored by having a menu with no headings and only recipe information. There is always the possibility that this could have a more lasting effect than nudging.

We saw a significant difference between the effect of nudging on male and female participants, the reason why females chose more vegetarian and vegan options could be that they are more concerned about sustainability as they have more emotional and psychological orientated to think about the welfare and future security of their loved ones. Also, the sustainability facts would have had a more lasting effect on them.

In the case of male participants, as we have seen, there was hardly any effect of nudging on them but on the contrary, there was a possibility of negative effect of nudging in some cases. This could be because of the toxic masculinity that has enveloped them not to go for vegan choice as it could be considered negative trait among their peers if they become vegan also it could be that men always find masculinity in hunting animals so that has a clear link to meat eating.

Another theory to the above discussion about men and women could be that women are slow and contemplative when looking at something, while men tend to do things faster and in a hurry.

6 Limitations and Further Research Possibilities

The main limitation of the study was that it was only tested as an online survey to get more real time intuitions, the study could be further extended by working with restaurants and dealing with real time variables such as average number of customers per day, peak hours etc and their effects.

Although nudge interventions seem to be effective in the short term, one of the biggest limitations is that studies do not evaluate their long-term effectiveness (Gonçalves et al., 2021).

Our online study could also be done by adding more constraints in the nudging survey, the display time of the image could be controlled, decision making could also be controlled by timers, increasing the font size, changing the colour of all three options, incentives after the vegan option etc are some of the further possibilities that could be explored.

We had done convenience sampling with same age and mostly same educational background but there is a lot of potential if a more diverse sample based is considered there can be more significance of the nudging.

Another possibility for this design could be that the facts change again within a certain time frame so that the participant gets his focus back on the fact thus increasing the chances of being nudged. There are a lot of options in choosing facts that can be explored, like the facts with negative language style and positive style could also be compared by testing them on participants randomly and comparing which type of fact had more influence on the participants choice and them getting nudged.

7 Effect of Nudges on People

From both a sustainability and environmental perspective, much could be gained by encouraging more people to switch from meat-based diets to plant-based alternatives. As discussed in the paper, a huge amount of greenhouse gas emissions come from the meat processing industry. In this paper, an attempt was made to get people to relate their food preferences to the environmental impact. Nudging participants with sustainability facts had a significant effect on their choices, more people chose vegan and vegetarian options who participated in the survey with nudges.

Chi-square test results showed a significant effect of nudges in the intervention group, further diving into the results of the analysis it was found that there is also a considerable amount of difference when we compare male and female participants. By comparing male and female, we were able to conclude that the effect of the nudge was stronger in females compared to males. It was found that women were more likely to change their choice from meat-based to plant-based by noticing the sustainability facts.

This paper has improved our understanding of the effect of providing an information nudge on plant-based food choices. The study shows a lot of research potential in the areas of nudging used to influence people to choose a plant-based diet, in particular there is a lot of potential in the way the sustainability facts can be used in different types of manipulations to generate a significant effect of nudging.

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Appendix

Appendix 1: Illustrated Facts

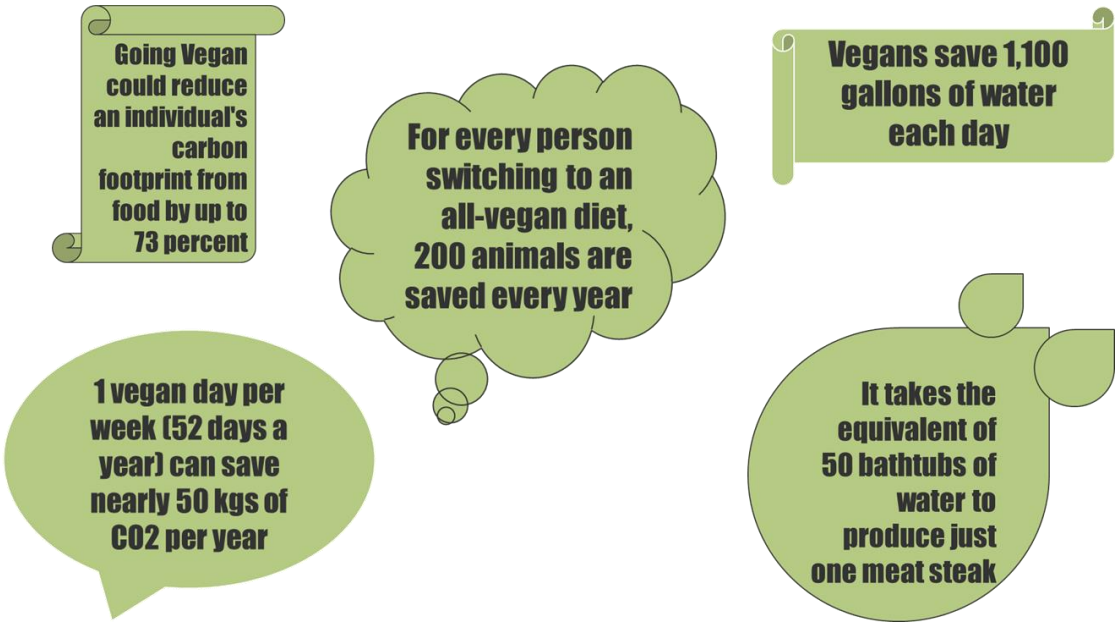

Figure 8: Environmental facts used as a nudge.

Appendix 2: Absolute choices of dishes

Table 1: Intervention Group: Diet x choice

	Omnivore x Vegan	Vegetarian x Vegan	Vegan x Vegan	Omnivorex Vegetarian	Vegetarian x Vegetarian	Ominvore x Meat
Pasta 1	9,00	6,00	2,00	4,00	0,00	12,00
Sushi 1	9,00	2,00	1,00	0,00	2,00	10,00
Burger 1	4,00	3,00	1,00	0,00	2,00	9,00
Burrito 1	14,00	1,00	2,00	4,00	3,00	18,00
Pizza 1	3,00	2,00	4,00	0,00	1,00	5,00
Pasta 2	7,00	2,00	2,00	3,00	0,00	10,00
Sushi 2	3,00	2,00	3,00	3,00	2,00	15,00
Burger 2	5,00	3,00	3,00	7,00	1,00	19,00
Burrito 2	5,00	1,00	2,00	5,00	1,00	4,00
Pizza 2	5,00	3,00	0,00	14,00	2,00	12,00
Sum	64,00	25,00	20,00	40,00	14,00	114,00

Table 2: Control Group: Diet x Choice

	Omnivore x Vegan	Vegetarian x Vegan	Vegan x Vegan	Omnivorex Vegetarian	Vegetarian x Vegetarian	Ominvore x Meat
Pasta 1	6,00	7,00	0,00	6,00	1,00	15,00
Sushi 1	6,00	6,00	0,00	2,00	2,00	16,00
Burger 1	0,00	3,00	0,00	3,00	3,00	12,00
Burrito 1	2,00	5,00	0,00	4,00	5,00	15,00
Pizza 1	1,00	5,00	0,00	6,00	3,00	8,00
Pasta 2	4,00	1,00	0,00	5,00	3,00	11,00
Sushi 2	4,00	3,00	0,00	7,00	0,00	11,00
Burger 2	8,00	2,00	0,00	8,00	4,00	16,00
Burrito 2	5,00	0,00	0,00	15,00	2,00	6,00
Pizza 2	8,00	2,00	0,00	17,00	3,00	7,00
Sum	44,00	34,00	0,00	73,00	26,00	117,00

Appendix 3: Critical values of chi-square (right tail)

Degrees of freedom (*df*)	Significance level (α)							
	.99	.975	.95	.9	.1	.05	.025	.01
1	-------	0.001	0.004	0.016	2.706	3.841	5.024	6.635
2	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210
3	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345
4	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277
5	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086
6	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812
7	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475
8	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090
9	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666
10	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209
11	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725
12	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217
13	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688
14	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141
15	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578
16	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000
17	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409
18	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805
19	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191
20	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566
21	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932
22	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289
23	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638
24	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980
25	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314
26	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642
27	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963
28	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278
29	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588
30	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892
40	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691
50	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154
60	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379
70	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425
80	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329
100	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116
1000	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807

Figure 9: Critical values of chi-square (right tail)

Appendix 4: Responsibilities for the sections

The study was conducted as a collaborative team. The following table shows purely who wrote which part of the study.

Abstract	Sabrina Schmitt
1 Reducing Greenhouse Gas Emissions by Changing to a Plant-based Diet	Sabrina Schmitt
2.1 The Concept of Nudging	Sabrina Schmitt
2.2 Nudging in the Food Industry and Identifying a Research Gap	Sabrina Schmitt
3.1 Sample Size and Composition	Arshdeep Singh
3.2 Procedure and Design	Arshdeep Singh
4.1 Comparison of Test and Control Group	Sabrina Schmitt & Arshdeep Singh
4.2 Rejecting the Null Hypothesis with Chi Square Test	Sabrina Schmitt
5 Discussing the Results	Arshdeep Singh
6 Limitations and Further Research Possibilities	Arshdeep Singh
7 Effect of Nudges on People	Arshdeep Singh

Declaration of Authorship

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This seminar paper was not previously presented to another examination board and has not been published.

Munich, 7th of July 2023

Drishdeep Singh

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