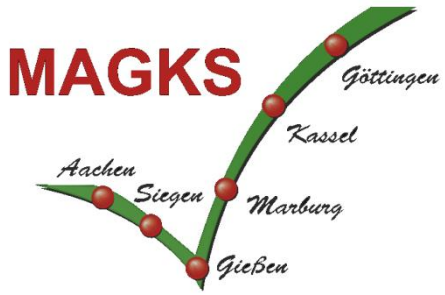

Joint Discussion Paper Series in Economics

by the Universities of

Aachen · Gießen · Göttingen
Kassel · Marburg · Siegen

ISSN 1867-3678

No. 01-2023

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Coordination: Bernd Hayo • Philipps-University Marburg
School of Business and Economics • Universitätsstraße 24, D-35032 Marburg
Tel: +49-6421-2823091, Fax: +49-6421-2823088, e-mail: hayo@wiwi.uni-marburg.de

The effects of observability and an information nudge on food choice

Astrid Dannenberg[a] and Eva Weingärtner[b]

[a] Department of Economics, University of Kassel, 34117, Kassel, Germany; Department of Economics, University of Gothenburg, 405 30, Gothenburg, Sweden; Email: dannenberg@uni-kassel.de

[b] Department of Economics, University of Kassel, 34117, Kassel, Germany; Email: eva.weingaertner@uni-kassel.de

Abstract:

Our choice of food has major impacts on the environment. At the same time, it is visible to all people with whom we spend our daily lives. This raises the question of whether people are adapting their diets to gain a green reputation, as has been observed for other environmentally relevant consumption choices. Using an experiment in which participants can choose between vegan, vegetarian, and meat-based food vouchers, we examine how observation by others and the provision of an information nudge influence food choices. The results show that providing an information nudge reduces the likelihood of choosing meat by 12 percentage points. Observation by others does not significantly reduce the likelihood of choosing meat. Contrary to our prediction, when participants are observed and receive the information nudge, they are less inclined to choose one of the more sustainable options. We discuss the reasons for the partly surprising results and the implications for policy.

JEL: C9, D91, Q18

Keywords: Food choice; meat consumption; information nudge; observability; experiment

Financial disclosure statement:

The work was financially supported by the project ZumWert funded through the University of Kassel, Germany. There is no other interested party, with a financial, ideological, or political stake related to the article.

Conflict of interest statement:

The authors declare no conflict of interest.

1. Introduction

An important environmental economics literature has begun to examine the role of reputation and social status in sustainable consumption decisions (Kahn, 2007; Sexton and Sexton, 2014; Banerjee and Shogren, 2012). It builds on the broader literature examining conspicuous consumption and status-seeking behavior, which has traditionally focused on consumption choices that signal wealth and exclusivity, such as luxurious estates, cars, fashion, or generous donations (e.g. Glazer and Konrad, 1996). While some sustainable consumption choices may signal wealth, such as a low-emission car or a solar roof, many other choices involve consumption restraint and therefore do not signal wealth or exclusivity. In these cases, status-seeking consumers need to consider whether the recipients of the signals are rewarding green behavior per se and view it as status-enhancing. Recent evidence suggests that green behavior is valued, at least in some communities, and that decision makers adjust their behavior accordingly. Delmas and Lessem (2014), for instance, find that students living in dormitories reduce their energy consumption when it is made public through posters.

In this paper, we contribute to this literature by examining whether concern for one's reputation influences dietary choices, more specifically, choices between vegan, vegetarian, and meat-based foods. We consider this investigation to be important for at least three reasons. First, the production and consumption of meat and dairy products have major impacts on global climate change as well as the local environment, human health, and animal welfare (Godfray et al., 2018). Current estimates are that livestock agriculture is responsible for about 10 percent of global greenhouse gas emissions (O'Mara, 2011) and as much as 18 percent when the full product life cycle is considered (Steinfeld et al., 2006). Reducing meat consumption is therefore seen as an effective and necessary measure to mitigate climate change and other damages (Meier and Christen, 2013; Springmann et al., 2018).

The second reason is that the consumption of meat and other animal products is hardly regulated. Existing measures are mainly limited to the provision of information. While there is ample justification for stricter regulation of meat consumption due to the adverse effects, there are a number of barriers that prevent it, including resistance on the part of producers and consumers (Bonnet et al., 2020). If both producers and consumers are against regulation at the expense of third parties, in this case future generations and farm animals that do not have a vote, then politicians do not have much incentive to change the status quo. Changing social norms may alleviate this regulatory dilemma as the proportion of meat-eaters in the population decreases, allowing for stricter regulations over time.

The third reason is that reputational concerns may in principle have a high potential to influence people's diets. Eating is a social activity that we often perform in company. How we eat is visible

to everyone we spend our daily lives with and a meatless diet might be a good way to build a green reputation. For this reason, food consumption is often cited as one of the areas where changing social norms could lead to significant behavioral adaptations (Nyborg et al., 2016) but we do not yet have much empirical evidence in this area. There are a number of factors that make abstinence from meat due to reputational concerns questionable. Meat consumption in economically developed countries is stable at a high level (Godfray et al., 2018) and the proportion of vegetarians and vegans in the population is generally low. A recent representative survey among Germans, for example, shows that 10 percent follow a vegetarian diet and 2 percent a vegan diet (Federal Ministry of Food and Agriculture, 2021). Long-standing eating habits are hard to change, but at least in the short term, eating decisions can be influenced by simple nudges, especially among young people (Cadario and Chandon, 2020; Kurz, 2018). What is perhaps even more critical, abstaining from meat is not necessarily viewed positively. Most people consider meat eating as natural and normal (Piazza et al., 2015) and for some people it is still associated with masculinity (Chan and Zlatevska, 2019; Ruby & Heine, 2011). The motivation behind the avoidance of meat is not clear as the reason may also be health-related or the person may simply dislike meat (De Nardo et al., 2017; Brooks and Wilson, 2015). Finally, people often underestimate the emissions caused by meat consumption (Hartmann and Siegrist, 2017; Camilleri et al., 2019). In short, the price for the green reputation acquired by reducing meat consumption may be quite high while the reward could be low.

The challenge in studying the effect of reputation is to isolate the effect from the multitude of other factors that potentially influence food choice. In our study, we took advantage of the fact that in the winter semester 2020/2021 all lectures at the University of (...) in Germany were conducted online due to the Coronavirus pandemic. Participants from different lectures, mainly in economics and business administration, were invited to participate in an online survey where they could win a voucher for two sandwiches at a local restaurant as a thank-you gift. They could choose either vegan, vegetarian, meat, or no voucher, which was the main variable of interest in our experiment. We manipulated observability by informing participants in one randomized treatment condition that they would have to publicly announce their choice if they won, while the choice of participants in the other condition remained private. As a second randomized treatment variable, an information nudge was provided to some participants about the consequences of certain diets for the emission of greenhouse gases. In interaction with observability, this resulted in a 2x2 factorial design. We included the provision of the information nudge in the study because it may alter the effect of observability by influencing the perceived motivation for the food choice. Specifically, the choice of a vegetarian or vegan sandwich is more likely to be perceived as environmentally motivated if the environmental benefits have been mentioned before. Moreover, policy typically relies on

informational instruments to influence dietary patterns and there are only few incentivized studies of the effects of environmental information on food choice.

Student samples are typically used in experiments for convenience reasons. Although this is also true for our study, there is another important reason for using students. The reputation that young people build with their peers at this stage of their lives is obviously important and will certainly play a role in their behavior and attitudes. Also, our experiment is not a lab experiment where students play an abstract game. Our participants choose a voucher for two sandwiches without knowing that this is part of an experiment. In that sense, it is closer to a natural or framed field experiment (Harrison and List, 2004). We see this and the verifiable randomization into treatments at the level of individuals as the greatest advantage of our study.

The remainder of the paper is structured as follows. Section 2 gives an overview of the relevant literature, Section 3 presents the design of the experiment and the sample, Section 4 provides hypotheses based on a simple model of social signaling, adapted from Bénabou and Tirole (2006), Section 5 presents the main experimental results (less important results are presented in the Appendix), and Section 6 discusses the results and concludes.

2. Related literature

It is a robust finding in the behavioral economics literature that people behave more prosocially when they are observed by others than when they are unobserved. The effect is not always large, but it has been found in many different contexts, such as blood donations (Lacetera and Macis 2010), contributions to the maintenance of a national park (Alpizar, Carlsson, and Johansson-Stenman, 2008; Alpízar and Martinsson, 2013), church offerings (Soetevent, 2005), fulfilling the civic duty of voting (Funk 2010), paying for a fair-trade chocolate bar (Friedrichsen and Engelmann, 2018), or supporting the climate campaign of a movie theater (Dannenberg et al., 2021). The effect of observability has also been shown in lab experiments. Players' cooperation rates in a public goods game improve significantly when they have to convey their contributions to the other players after the game (Rege and Telle 2004; Hauge and Rogeberg 2015) or when a photo of them is shown to all players along with their contributions (Andreoni and Petrie 2004; Samek and Sheremeta 2014; Christens et al., 2019). In a meta-study, based on both field and lab experiments and including contributions from several academic disciplines, Bradley et al. (2018) find a statistically significant, albeit moderate, effect of observability on prosocial behavior.

The environmental economics literature on the effects of observability on environmental behavior is still relatively small.[1] Delmas and Lessem (2014) study the energy consumption of students in a dormitory when they are publicly informed whether their energy consumption is below or above the average consumption. They find that public information reduces energy use by 20 percent and is especially effective for those with high energy use. Sexton and Sexton (2014) consider the possibility that communities differ in the extent to which they assign social status for visible green behavior. They show that people who live in green communities in the US, measured by the support for the Democratic Party, have an increased willingness to pay for a Toyota Prius, which showcases its environmental benefits through unique design, but not for other less conspicuous hybrid cars. Similarly, Babutsidze and Chai (2018) find that consumers in Australia tend to adopt the same climate change mitigation practices as their neighbors but only those that are visible. Studies conducted in different countries show that homeowners' willingness to install solar panels increases with the number of solar systems already installed in their neighborhood (Bollinger and Gillingham 2012; Müller and Rode 2013; Graziano and Gillingham 2015; Mundaca and Samahita 2020). Aagerup and Nilsson (2016) show that consumption of organic coffee increases significantly compared to cheaper conventional coffee among college students when the color of the cup signals the type of coffee to fellow students.

Two recent studies suggest that observation by others may influence food choices. Einhorn (2020) studies food choices in seven dining halls of German universities and finds that meat-eaters who have lunch with vegetarians or vegans are more likely to choose the meatless meal. Perino and Schwirplies (2021) use a diary study to investigate the effects of confronting consumers with either health-related, climate-related, or animal-welfare-related arguments to reduce the consumption of red meat. They find that the interventions reduce red meat consumption among female consumers, especially when they eat their meals together with others. However, in both of these studies, the observation of food choice by others is endogenously chosen, rather than exogenously varied as in our study, making it difficult to demonstrate a causal effect.

Some studies from psychology and marketing research address the question of how the consumption of meat or the abstention from it is viewed by different individuals. These studies indicate that the abstention from meat is not always valued or expected to be valued (Cordts et al., 2014; Chan and Zlatevska, 2019; Vandermoere et al., 2019). These studies are related to a broader literature examining what types of environmental protection behaviors lead to elevated status (Griskevicius et al., 2010; Brooks and Wilson, 2015; De Nardo et al., 2017; Uren et al., 2021). A robust finding in this literature is that social status can be enhanced by behaviors that entail a

[1] A related environmental economics literature examines whether and how people change their environmental behavior when they receive information about what other people think and do (e.g. Costa and Kahn 2013; Farrow et al. 2017; Dannenberg et al. 2022).

monetary cost, such as the purchase of a new environmentally efficient product. Curtailment behaviors with no monetary costs, by contrast, do not necessarily enhance and may even decrease status because it is unclear whether those behaviors are adopted by choice or financial need. Although it is unlikely that abstaining from meat will be attributed to financial need (Welte & Anastasio, 2010), ambiguity about motivation plays a role, as abstention may be also be for health reasons or simply because someone dislikes meat.

Our study is also related to the literature on how food choices can be influenced. A number of behavioral mechanisms have been tested in experiments or surveys. Sparkman and Walton (2017) find that presenting customers at a campus café with information about others' increasing efforts to reduce meat consumption led to a doubling in customers' subsequent meatless lunch orders. In a study conducted over several weeks in two restaurants at a Swedish university, Kurz (2018) shows that increased visibility of vegetarian dishes increases their consumption by 6 percentage points. Hansen et al. (2021) use people's registration to three scientific conferences to show that changing the default from non-vegetarian to vegetarian lunch significantly increases vegetarian meal choice. A recent study on food choices in an experimental supermarket finds that recalling past environmental activities reduces choice-related greenhouse gas emissions, but less so than a carbon tax (Panzone et al., 2021b). Other tested nudges include placing unhealthy foods further away (Maas et al., 2012; Rozin et al., 2011), rearranging buffets (Hansen et al., 2016), or reducing plate sizes (Wansink and van Ittersum, 2013; Kallbekken and Sælen, 2013).

The literature on the effects of environmental information on meat consumption is still relatively small. Camilleri et al. (2019) show that providing information about greenhouse gas emissions via labels makes subjects more likely to choose vegetarian soup over beef soup. Muller et al. (2019) find that carbon labels in traffic-light style reduce the greenhouse gas intensity of food baskets in an experimental supermarket. Brunner et al. (2018) and Lohmann et al. (2022) provide similar results for university dining halls. Fosgaard et al. (2021) show that conveying greenhouse gas emission feedback on groceries via an app can reduce emissions, including those caused by meat consumption, even over a longer time period provided that participants are willing to continue using the app. Presenting food products in high, medium, and low carbon footprint groups also reduces emissions from online purchases by shifting consumption from high to low carbon footprint groups (Panzone et al., 2021a). The diary study by Perino and Schwirplies (2021) shows, however, that confronting consumers with climate-related arguments affects the intentions to reduce meat consumption, but not actual meat consumption.

Taken together, we can conclude that people's food choices can be influenced by soft measures. However, there is no evidence whether mere visibility can already affect food choice. To provide such evidence is the aim of this study.

3. Experimental design and sample

The experiment was conducted in the winter semester 2020/2021 at the Faculty of Economics and Management of the University of (...) in Germany. Due to the Coronavirus pandemic, all teaching was conducted online during this semester via the video conference software Zoom. The courses at bachelor and master level were selected so that as many participants as possible could be reached without too much overlap in the different courses. Students in the online lectures were invited to take part in a survey with the restriction that those who had already participated as part of another lecture could not participate again. They were informed about the expected duration of the survey and the possibility to win a prize but not about the topic of the survey. We also asked them not to communicate with each other during the survey. Approximately 60 to 80 percent of the students in each course agreed to participate.

Participants in the same class were randomly assigned to four virtual rooms using Zoom's breakout session feature. Each virtual room was led by a research assistant who first read out the general instructions and then gave participants a treatment-specific link to answer the survey. The first part of the survey was identical across treatments and elicited personal information such as gender, age, religion, native language, study program, number of semesters, current place of residence, household size, occupation, income, and acquaintance with fellow students in the course and in the virtual room. None of the questions in this first part had anything to do with the environment or food. Almost all questions included the option of not providing an answer.

Afterwards, participants were informed that as a thank you for their participation they could win a voucher for two sandwiches and that they could choose between meat, vegetarian, or vegan sandwiches. Ten percent of the participants or at least one person in each virtual room received the desired voucher afterwards. The vouchers were non-transferable and could be redeemed at a local restaurant.[2] We did not force participants to choose one of the vouchers, but also allowed them to abstain from the drawing. With this we wanted to prevent participants from abandoning the survey at this point or choosing a voucher they didn't actually want. The people who chose this option are still participants in the experiment because they have agreed to participate and have chosen one of the available options.[3] The choice of the voucher (or the forgoing of it) represents the main variable in our experiment and was manipulated in four different treatments.

[2] The sandwiches, including the vegetarian and vegan variants, are high quality sandwiches with various fillings. The value of a voucher was about 8 euros for all types of sandwiches.

[3] Excluding people who did not choose a voucher would bias the sample, especially if the decision is influenced by the treatments (for a discussion, see Al-Ubaydli and List, 2013).

In the baseline treatment *'Private No Info,'* subjects read the following text just before they made their decision:

> *The winners will be publicly announced directly in the breakout room. Their choice of voucher will not be revealed to other participants. Please indicate which type of voucher you would like to receive if you win.*

In the *'Public No Info'* treatment, subjects read the following text instead:

> *The winners will be publicly announced directly in the breakout room and asked for their choice of voucher so that we can pass on the selection to the restaurant. Please indicate which type of voucher you would like to receive if you win.*

The winners were thus announced publicly in both treatments but only in the public treatment their choice of voucher was revealed. The two treatments with information *'Private Info'* and *'Public Info'* were identical to the treatments without information except that, before subjects read the text shown above, they received the following information:

> *Reducing one's consumption of animal products can have significant environmental benefits. For example, food-related greenhouse gas emissions can on average be lowered by about a quarter (24%) through following a vegetarian diet and by about half (53%) through following a vegan diet.*[4]

To put the information into context, it was placed after the explanation that the restaurant offers three different types of sandwiches to meet the different preferences of its customers. This explanation was provided in all four treatments. We expected (and indeed found) that most participants would already know that a vegan diet would reduce emissions more than a vegetarian diet compared to the average diet containing meat, and that an important part of the information would not be new. Therefore, the information served mainly as a nudge (Thaler and Sunstein, 2008) that reminded participants which choice was the best from a climate perspective. Our treatments show the effect of this information nudge on food choice with and without observation by other people.

The second part of the survey after the experimental manipulation was again identical in all treatments and included questions about respondents' dietary patterns and preferences, consumption of meat and dairy products, views on different diets, environmental awareness and behaviors, estimated proportion of meat-eaters and non-meat-eaters in the course and among their friends, and the importance of reputation (the complete questionnaire is shown in the Appendix).

[4] The values in the information nudge are taken from Meier and Christen (2013), who conducted a life cycle analysis based on the average German diet in 2006 and scenarios for vegan and vegetarian diets, respectively.

The responses to these questions in the second part must be treated with caution because they might be influenced by the experimental intervention. At the end of the survey, participants were asked to estimate by how much one could reduce the food-related greenhouse gas emissions by following a vegetarian or vegan diet. With this we wanted to test whether subjects in the information treatments could still remember the information provided and whether their estimates differed from those in the treatments without information.

Table 1. Sample characteristics by treatment and in total

Variable	Private No Info	Private Info	Public No Info	Public Info	All
Gender					
Male	0.47	0.45	0.51	0.54	0.49
Female, diverse, or not provided	0.53	0.55	0.49	0.46	0.51
Mean age in years	23.5	23.8	23.9	24.0	23.8
Share of not provided	0.02	0.00	0.01	0.01	0.01
Religion					
None	0.50	0.45	0.48	0.54	0.49
Protestant	0.17	0.27	0.25	0.23	0.23
Catholic	0.12	0.07	0.04	0.07	0.07
Muslim	0.09	0.09	0.10	0.04	0.08
Other or not provided	0.13	0.13	0.13	0.11	0.12
Native language					
German	0.79	0.82	0.82	0.87	0.82
Other or not provided	0.21	0.18	0.18	0.13	0.18
Course attended					
Environmental	0.18	0.14	0.17	0.15	0.16
Non-environmental	0.82	0.86	0.83	0.85	0.84
Diet					
Including meat	0.83	0.82	0.84	0.86	0.84
Vegetarian or vegan	0.15	0.16	0.16	0.13	0.15
Not provided	0.02	0.01	0.01	0.01	0.01
(…) residency					
Living in (…)	0.65	0.71	0.69	0.57	0.65
Not living in (…)	0.32	0.29	0.31	0.41	0.33
Not provided	0.03	0.00	0.01	0.02	0.01
Number of observations	127	134	140	136	537

Reported are shares or means (in case of age) by treatment and overall. Results of pairwise Wilcoxon rank-sum tests of equal means of *age* between treatments and χ^2-tests of average proportions between treatments (all other variables) show that there are statistically significant differences between some treatments in religion, native language, and residency that disappear when correcting for multiple hypothesis testing. Details are provided in Table A3 in the Appendix. The individuals who did not report their diet are assigned to the meat-eater group in the regression analyses below.

A total of 539 students participated in the experiment. Two observations had to be dropped from the analysis due to technical problems, leaving 537 observations. Table 1 provides an overview of the sample and the distribution of the elicited characteristics across treatments. It shows that the characteristics are mostly evenly distributed across all treatments and that randomization was by

and large successful. The only variable in the table that was collected after the implementation of the treatments is diet. Since the responses are also evenly distributed across all treatments, we can assume that they were not distorted by the treatments. On average, 6 subjects participated in each breakout room.

4. Hypotheses

We use a simplified version of the social signaling model of Bénabou and Tirole (2006) to derive hypotheses for our experiment. Using the same denotations as in the original model, we assume that individuals choose an option $a \in \{0,1\}$, where $a = 1$ is the environmentally friendly option (vegetarian or vegan voucher) and $a = 0$ is the environmentally harmful option (meat voucher).[5] Choosing a entails a utility cost $C(a)$, which is private information of the individual and unknown to observers. Since there is no material (extrinsic) reward for choosing a, an individual's direct benefit of choosing a is

$$v_a a - C(a) \qquad (1)$$

where v_a is an individual's intrinsic valuation of choosing a. The valuation v_a is known to the individual but not to observers.

The value of an individual's reputation, reflecting the judgement of observers, depends linearly on observers' expectations of the individual's type v_a given the choice of a. An individual's reputational benefit of choosing a thus is

$$R(a) \equiv x\, \gamma_a\, E(v_a|a) \qquad (2)$$

where $x \in \{0,1\}$ determines whether choosing a is observable or not and $\gamma_a \geq 0$ reflects that people would like to appear as environmentally conscious, that is having a high v_a.

An individual thus solves

$$\max_{a \in \{0,1\}} \{v_a a - C(a) + x\, \gamma_a\, E(v_a|a)\} \qquad (3)$$

and chooses $a = 1$ if

$$C'(a) \leq v_a + x\, \gamma_a\, \frac{\partial E(v_a|a)}{\partial a} \qquad (4)$$

[5] We group vegetarian and vegan together as environmentally friendly option, since the proportion of vegan choices in the experiment is very small.

Because $a \in \{0,1\}$, the discrete cost of choosing $a = 1$ can be defined as $C'(1) \equiv C(1) - C(0)$. This discrete cost is positive for subjects who like meat, negative for those who dislike meat, and zero for those who are indifferent. According to condition (4), individuals are more likely to choose the vegetarian or vegan voucher if one (or more) of the following holds: they do not like meat very much, they are intrinsically motivated to eat in an environmentally friendly way, or they want to appear environmentally conscious to observers. We assume that $C'(a)$ and γ_a are evenly distributed across treatments because subjects are randomly assigned to treatments. Observability in the public treatments changes $x = 0$ to $x = 1$. For the information treatments, we assume that the provision of the information nudge increases v_a and $\partial E(v_a|a)/\partial a$ by reminding individuals of the food-climate link or by making the link more salient. An increased value of the derivative $\partial E(v_a|a)/\partial a$ means that observers are more likely to associate the choice of a vegetarian or vegan voucher with environmental awareness.

From this, the following hypotheses can be derived about the likelihood of choosing meat in the different treatments:

1a. Private No Info ≥ Private Info
2a. Public No Info ≥ Public Info
3a. Private No Info ≥ Public No Info
4a. Private Info ≥ Public Info

or alternatively about the likelihood of choosing one of the meatless options:

1b. Private No Info ≤ Private Info
2b. Public No Info ≤ Public Info
3b. Private No Info ≤ Public No Info
4b. Private Info ≤ Public Info

Hypotheses 1a, 2a, 1b, 2b capture the effect of the information nudge and hypotheses 3a, 4a, 3b, 4b capture the effect of observability. While we expect both the provision of the information nudge and observability to reduce the choice of meat or increase the choice of the meatless options, it is possible that they will have no effect. The provision of the information nudge will have no effect on food choice if it leaves v_a and $\partial E(v_a|a)/\partial a$ unchanged. Observability will not have an effect if subjects do not care about their reputation, $\gamma_a = 0$, or if they expect observers to be unable to see the link between food choice and intrinsic motivation, $\partial E(v_a|a)/\partial a = 0$. As in the original model of Bénabou and Tirole (2006), we assume that observability will not reduce prosocial behavior. However, the experimental results force us to discuss this assumption again later.

The model also suggests that there is an interaction effect between the information nudge and observability in the sense that the information nudge has a stronger effect when decisions are

observed and, likewise, that observability has a stronger effect when the information nudge is provided. This is due to the fact that observability activates the second term in condition (4) and the information nudge additionally increases this term by increasing $\partial E(v_a|a)/\partial a$.

5. Results

We will first clarify whether providing the information nudge has an impact on subjects' knowledge and then present the overall effects of the treatments on food choices.

5.1 Effect of the provision of information on subjects' knowledge

A large majority of participants, more than 70% regardless of treatment, know that a vegan diet reduces greenhouse gas emissions more than a vegetarian diet compared to a meat-based diet. The point estimates on the emission reduction potentials are generally not very good, but we can see an improvement in the accuracy of the estimates through the provision of the information nudge.

Table 2. Effect of information on subjects' knowledge level

	Correct estimation of emission reduction potentials of vegan and vegetarian diets		
	Without information	With information	p-value from one-sided Fisher's exact test
All	17.2%	30.7%	<0.001
Males	15.9%	33.8%	0.001
Non-males	18.5%	27.7%	0.048
Meat-eaters	17.6%	27.3%	0.009

Estimates are considered correct if both the vegan and the vegetarian estimate do not deviate more than 14 percentage points up or down from the correct values. We calculated frequentist q-values with the qqvalue-command and Simes method (Benjamini and Yektuieli 2001, as described in Newson 2010) to account for multiple hypothesis testing. For all comparisons, the null hypothesis of equal means can still be rejected if the rate of falsely rejected null hypotheses (i.e., the false discovery rate) for the four comparisons is controlled at 0.05 (Newson 2010).

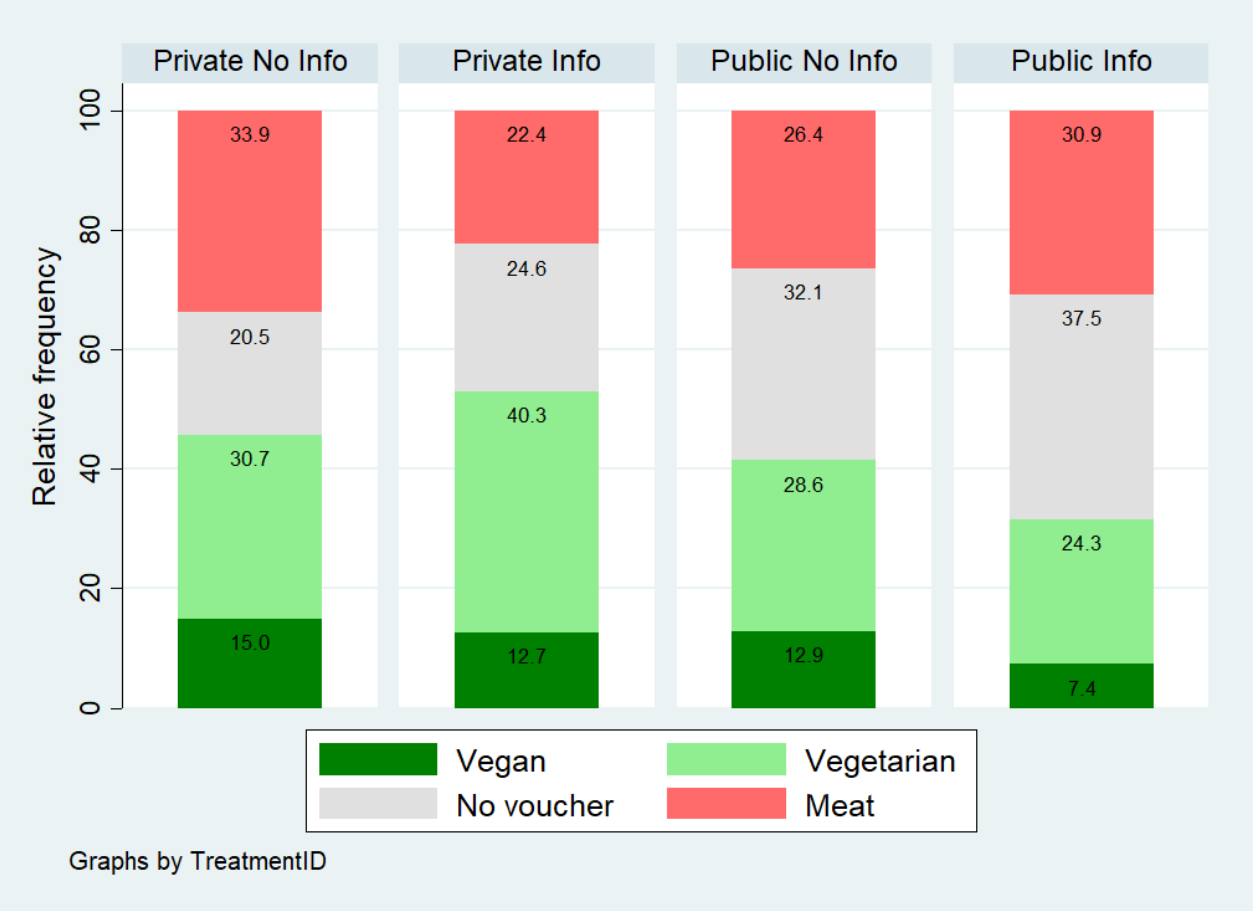
To analyze the effect of the information nudge on participants' knowledge, we use a variable "correct estimation" that takes the value one if participants' estimates of the emission reduction potential of a vegan diet and a vegetarian diet both deviate by no more than 14 percentage points up or down from the correct value for each (53% for vegan and 24% for vegetarian diet). With this range, participants must be relatively close to the correct value on both estimates and it ensures that the ranking of reduction potentials (vegan > vegetarian) has been correctly estimated. Table 2 provides an overview of the share of correct estimations. Of the participants who did not receive information, 17.2% estimated the emission reduction potential for both diets correctly. This share

increases to 30.7% among participants with information, which is a statistically significant increase. The increase in correct estimations is also significant when we look at subsamples consisting of male respondents, non-male respondents (female, diverse, or not provided), or those whose diets include meat.

5.2 Choice of food vouchers

Figure 1 provides an overview of the choice of food vouchers in the different treatments. Most subjects in the baseline treatment *Private No Info* choose the meat sandwich (33.9%), followed by subjects who choose the vegetarian sandwich (30.7%), those who do not wish to receive a voucher (20.5%), and subjects who choose the vegan sandwich (15.0%). In the *Private Info* treatment, the proportion of meat sandwiches decreases to 22.4% and the proportion of vegetarian sandwiches increases to 40.3%. There is little change in the proportion of vegan sandwiches and the proportion of those who do not choose a voucher. Observability in the treatments *Public No Info* and *Public Info* does not increase the proportion of vegetarian and vegan sandwiches. On the contrary, the choice of meatless sandwiches tends to decrease, especially when observability is combined with the information nudge in the *Public Info* treatment. The choice of meat sandwiches decreases slightly compared to the baseline, while the proportion of subjects who do not want a voucher increases in the two public treatments, especially in the *Public Info* treatment. As we will see, the rather moderate effects of the information nudge and observability partially mask larger effects in different groups within the sample.

Figure 1. Choice of food vouchers by treatment



Pairwise two-sided Fisher's exact tests reveal the following statistically significant differences: meat choice between *Private No Info* and *Private Info* (p=0.075); vegetarian/vegan choice between *Private No Info* and *Public Info* (p=0.023), between *Private Info* and *Public No Info* (p=0.069), and between *Private Info* and *Public Info* (p=0.001); no-voucher choice between *Private No Info* and *Public No Info* (p=0.037), between *Private No Info* and *Public Info* (p=0.003), and between *Private Info* and *Public Info* (p=0.026). We calculated frequentist q-values with the qqvalue-command and Simes method (Benjamini and Yektuieli, 2001, as described in Newson, 2010) to account for multiple hypothesis testing. Comparisons for which the null hypothesis of equal means between outcome level and treatments can still be rejected if the rate of falsely rejected null hypotheses (i.e., the false discovery rate) per outcome level is controlled at 0.10 (Newson, 2010) are colored in red.

In the conditional analysis of the data, we use a multinomial logistic regression model that differentiates between the meatless options (vegan or vegetarian), meat, and no voucher. We show here the regression models in which vegan and vegetarian are pooled, since vegan was rarely chosen, and show the regressions in which vegan and vegetarian are separated in the Appendix (Table A2). In addition to the treatment variables, we include gender, age, religion, native language, course, acquaintance with others in the same breakout room, gender of the session instructor, and residency in (…) as control variables in all regressions. The multinomial logistic model is thus specified as

$$\ln \Omega_{m|b}(x) = ln \frac{\Pr(y = m|x)}{\Pr(y = b|x)} = \boldsymbol{x\beta_{m|b}}$$
$$= \beta_{0,m|b} + \beta_{1,m|b} PrivateInfo + \beta_{2,m|b} PublicNoInfo + \beta_{3,m|b} PublicInfo$$
$$+ \beta_{4,m|b} Male + \beta_{5,m|b} Acquainted + \beta_{6,m|b} EnvironmentalClass$$
$$+ \beta_{7,m|b} SurveyorMale + \beta_{8,m|b} Age + \beta_{9,m|b} Protestant + \beta_{10,m|b} Catholic$$
$$+ \beta_{11,m|b} Muslim + \beta_{12,m|b} OtherReligionOrNotSpecified + \beta_{13,m|b} German$$
$$+ \beta_{14,m|b}(\dots) Residency$$

where *m* is the choice outcome with *m* $\in$ *{vegan/vegetarian, meat, no voucher}* and *b* is the reference category, which we define as vegan/vegetarian. For the treatment variables, the base category is *Private No Info* and for religion, the base category is non-religious.

The probabilities for each choice outcome can be written as:

$$\Pr(y = m|x) = \frac{\exp(\boldsymbol{x\beta}_{m|vegan/vegetarian})}{\sum_{j=1}^{J} \exp(\boldsymbol{x\beta}_{j|vegan/vegetarian})}$$

Based on this model, we report the estimated average marginal or discrete probability effects of our explanatory variables in Tables 3, 4, and 5. Estimated effects are reported for the full sample (column (1)) and for subsamples consisting of male respondents (2), non-male respondents (3), or meat-eaters (4). Gender has been shown to be important in previous studies of food choices (Brough et al., 2016; McInnis and Hodson, 2017). We additionally consider meat-eaters, as we expect treatment effects mainly for them and less for non-meat-eaters. All three tables are based on the same models with the full sample and the subsamples and show effects on the different levels of the nominal outcome variable, namely meat choices (Table 3), vegan and vegetarian choices (Table 4), and no-voucher choices (Table 5).

The absolute predicted likelihood of each choice across treatments derived from the multinomial regression model for the full sample can be seen in Figure A1 in the Appendix. In the Appendix, we also provide the results of post-hoc power analyses for the full sample and the subsamples. According to Cohen's classification (Cohen, 1988), we are able to detect small to medium effect sizes with 80% power. Randomization checks on the subsamples show that the control variables are somewhat less balanced than in the full sample due to the lower number of observations, but most variables do not differ significantly across treatments, especially after correcting for multiple hypothesis testing (see Table A4).[6]

[6] The power analyses and randomization checks show that it is not a good idea to examine treatment effects in other subsamples of potential interest, such as environmental courses or non-meat-eaters. Because of the small number of observations for these subsamples, the control variables are not well balanced and only large effects could be found with sufficient power.

The regression results show that the likelihood of choosing a meat voucher is significantly lower in *Private Info* than in *Private No Info* (Table 3). The overall reduction of 12 percentage points observed for the full sample is mainly driven by the behavior of non-males whose likelihood of choosing meat drops by 20 percentage points. The reduction in the likelihood of choosing meat is slightly higher for meat-eaters than for the full sample, which is not surprising as vegans and vegetarians will not choose meat regardless of treatment. The lower likelihood of choosing meat in *Private Info* is accompanied by an increase in the choice of a vegan or vegetarian voucher (Table 4), although the increase is statistically significant only for non-males.

Observability in the *Public No Info* treatment reduces the likelihood of choosing meat by 6 percentage points compared to *Private No Info*, but the overall effect is not statistically significant. We find a statistically significant reduction in meat choice of 13 percentage points among the group of non-males (Table 3). However, there is no corresponding significant increase in the choice of the meatless options for this group (Table 4). Instead, they prefer to take no voucher at all; the probability of no-voucher choice increases by 15 percentage points for non-males. Overall, the probability of no-voucher choice is 10 percentage points higher in *Public No Info* than in *Private No Info* (Table 5).

Finally, the combination of information and observability in the *Public Info* treatment does not have any significant effects on the likelihood of choosing meat compared to the baseline, but *reduces* the likelihood of choosing a meatless voucher. This effect is statistically significant overall and particularly pronounced for males whose probability of choosing a meatless voucher drops by 22 percentage points (Table 4). For non-males, the likelihood of choosing vegan or vegetarian is not significantly lower in *Public Info* compared to the baseline, but compared to *Private Info* (see Figure A3 in the Appendix). These reductions in meatless choices are accompanied by a higher probability of no-voucher choices, which increases by 16 percentage points for males in *Public Info* compared to the baseline and by at least 12 percentage points for all other subsamples. The increase is statistically significant for all subgroups and the full sample (Table 5).

For the full sample models shown in the first column in Table 3, Table 4, and Table 5, we additionally use postestimation calculations of second differences with the *mlincom*-command to compare observability effects between information conditions. That is, we use predicted probabilities at means to compare the difference between *Public No Info* and *Private No Info* relative to the difference between *Public Info* and *Private Info*. We find that, at the means of all other variables, observability reduces meat choices significantly more when no information is provided than when information is provided ($p=0.031$). The opposite holds true for meatless choices; observability reduces vegan and vegetarian choices significantly more when information is provided than when it is not provided ($p=0.053$). This demonstrates that there are significant

interaction effects between information and observability for both meat and meatless choices – but the effects are very different from what the theoretical model predicts. We do not find a significant interaction effect for no-voucher choices.

Regarding the control variables, we find that male subjects have a lower probability of choosing vegetarian or vegan vouchers and a higher probability of choosing meat vouchers than the group of non-males. Participants in environmental classes choose meat and no voucher less often and vegetarian or vegan vouchers more often than participants in other classes. Catholics are more likely to choose meat and less likely to choose one of the meatless options than non-religious subjects. Students who do not live in (...) (where the restaurant is located) are more likely to forgo a voucher, arguably because they are not able to redeem it. We show interaction effects between treatments and gender in the Appendix (Figures A2-A4). They reveal that the main difference between males and non-males is how they respond to the information nudge under observation. The information nudge makes males much less likely to choose one of the meatless options when their decision is observed. This response differs significantly from the response of non-males who do not react much to information when they are observed.

Turning to our hypotheses, we can clearly confirm the first hypothesis, which states that the information nudge improves sustainable food choice, which is mainly driven by behavior of the non-males. Sensitivity to the information nudge appears to be unrelated to how much the information improves subjects' knowledge level. If the effect of the information were solely driven by an increase in knowledge, then the non-males should have experienced a greater increase in knowledge from the information provided than the males, but this is not the case (as shown in Table 2). We present further analyses of the effects of information in Table A1 in the Appendix. They show that, in the treatments without information, there is little difference in food choices between those who correctly estimate the emission reduction potential of meatless diets and those who do not, which also suggests that knowledge is not a driving factor. In the treatments with information, we find that those who better remember the emission reduction potential of meatless diets have a higher probability of choosing a meatless voucher. However, our data suggest that food preferences influenced attentive reading and retrieval of information, rather than the other way around. In the information treatments, vegans and vegetarians are significantly more likely to correctly remember the information than meat-eaters (52.5% vs. 27.3%, $p=0.002$ based on χ^2-test), while there is only little difference in correct estimates between non-meat-eaters and meat-eaters in the treatments without information (17.1% vs. 17.6%, $p=0.939$). Taken together, we interpret the evidence to suggest that the information works not by increasing knowledge, but by signaling what the right decision is.

The evidence for the hypothesis on the effect of observability is much weaker. Observability significantly reduces meat choices among non-males, but they do not become more likely to choose one of the meatless options and the overall effect of observability is not statistically significant. Finally, contrary to our prediction, the combination of information and observability reduces rather than increases sustainable food choices. This effect is particularly pronounced among males who rather forgo a voucher than to choose the advertised options under observation. This avoidance response when information and observability are combined also occurs in the other groups.

The proportion of participants who do not want a voucher is surprisingly high, especially in the public treatments. In the Appendix (Table A7), we provide an additional regression analysis that tests whether there are other predictors of this behavior besides place of residence and the treatments. The results show that social media use is negatively correlated with no-voucher decisions. In other words, subjects who often share own content on social media are less likely to forgo a voucher. This is true not only for public treatments but also for private treatments, suggesting that those who like to keep their affairs private are generally reluctant to state their food preferences, even when no observers are present. In addition, flexitarians are less likely to forgo a voucher than subjects following an omnivorous or meatless diet, especially in the public treatments, perhaps because they are more flexible in their choices under social pressure. Also, attendants in environmental classes are less likely to forgo a voucher than the attendants in other classes in the public treatments. This could perhaps be explained by the fact that the observers in these courses are different from those in the other courses. Unfortunately, we have too few observations for the environmental classes to investigate this properly. In general, although all of these correlations seem plausible to us, we should be cautious in interpreting them because they come from an exploratory analysis.

The final question we investigate is whether the effects of the treatments, and in particular the adverse effect of *Public Info*, are still evident in the responses that subjects provide in the ex-post questionnaire. The likelihood of planning a more sustainable diet in the future does not differ significantly between treatments. However, of those planning a more sustainable diet, subjects in *Public Info* are more likely to plan a flexitarian diet and less likely to plan a vegetarian diet than those in the other treatments (Table A5 in the Appendix). We also find that subjects in both public treatments are less likely to consider the environmental friendliness of their own diet important compared to subjects in the baseline treatment (Table A6). Similarly, subjects in the public treatments are less likely than those in the baseline treatment to report high self-efficacy regarding climate change. The comparison between *Private Info* and *Public Info* reveals that subjects in *Public Info* are less likely to view environmental friendliness as important, more likely to have a positive attitude toward an omnivorous diet, and more likely to state a high enjoyment of meat products and high importance of dietary habits. Compared with the baseline, subjects in the *Private*

Info treatment are more likely to have a positive attitude toward a vegetarian diet and a negative attitude toward an omnivorous diet. They also view convenience/effortlessness and habit as less important. These findings suggest that the treatments influence not only the choice of voucher but also the subsequently expressed opinions and intentions, and that these effects are largely consistent.

Table 3. Regression results on meat choices

	(1)	(2)	(3)	(4)
	Full Sample	Males	Non-males	Meat-eaters
Treatment (Base category: *Private No Info*)				
Private Info	-0.120**	-0.053	-0.201***	-0.144**
	(0.032)	(0.514)	(0.003)	(0.013)
Public No Info	-0.061	-0.012	-0.129*	-0.074
	(0.206)	(0.855)	(0.088)	(0.177)
Public Info	-0.014	0.065	-0.102	-0.027
	(0.795)	(0.396)	(0.306)	(0.619)
Male	0.090**			0.076
	(0.020)			(0.119)
Acquainted	0.024	0.106	-0.045	0.058
	(0.559)	(0.136)	(0.436)	(0.276)
Environmental class	-0.175***	-0.147**	-0.197***	-0.163**
	(0.003)	(0.050)	(0.002)	(0.032)
Male session instructor	0.012	-0.017	0.050	0.015
	(0.774)	(0.730)	(0.382)	(0.735)
Age	-0.009*	-0.013*	-0.004	-0.011*
	(0.078)	(0.091)	(0.487)	(0.073)
Religion (Base category: None)				
Christian (Protestant)	-0.072	-0.099	-0.022	-0.091*
	(0.153)	(0.127)	(0.677)	(0.089)
Christian (Catholic)	0.165***	0.120	0.202***	0.161**
	(0.002)	(0.245)	(0.000)	(0.028)
Muslim	-0.117	-0.046	-0.101	-0.162*
	(0.176)	(0.720)	(0.223)	(0.072)
Other or no answer	-0.086	-0.152	-0.006	-0.103
	(0.186)	(0.263)	(0.935)	(0.166)
German native speaker	-0.086	0.035	-0.187*	-0.120
	(0.304)	(0.689)	(0.088)	(0.141)
(…) residency	0.086	0.101	0.073	0.118*
	(0.149)	(0.183)	(0.282)	(0.089)
N	519	256	263	435

Estimated average marginal (age) or discrete (all other variables) probability effects of multinomial logistic regressions. Dependent variable is 1 if subject chooses meat voucher and 0 otherwise. Model (1) shows results for the full sample, while models (2) to (4) refer to subsamples as denoted in the headings. All models estimated with standard errors clustered at the session level. P-values in parentheses. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4. Regression results on vegetarian/vegan choices

	(1)	(2)	(3)	(4)
	Full Sample	Males	Non-males	Meat-eaters
Treatment (Base category: *Private No Info*)				
Private Info	0.086	0.016	0.166*	0.106
	(0.269)	(0.858)	(0.057)	(0.192)
Public No Info	-0.044	-0.054	-0.021	-0.009
	(0.498)	(0.508)	(0.825)	(0.894)
Public Info	-0.128**	-0.220***	-0.018	-0.092*
	(0.022)	(0.002)	(0.858)	(0.081)
Male	-0.144***			-0.147***
	(0.001)			(0.002)
Acquainted	0.019	-0.014	0.046	-0.005
	(0.667)	(0.808)	(0.472)	(0.925)
Environmental class	0.251***	0.339***	0.175***	0.232***
	(0.000)	(0.000)	(0.009)	(0.000)
Male session instructor	-0.018	0.007	-0.064	-0.039
	(0.668)	(0.877)	(0.323)	(0.445)
Age	0.007	0.010	0.004	0.009
	(0.259)	(0.158)	(0.685)	(0.220)
Religion (Base category: None)				
Christian (Protestant)	0.011	0.058	-0.053	0.030
	(0.849)	(0.328)	(0.532)	(0.580)
Christian (Catholic)	-0.126*	-0.030	-0.204***	-0.072
	(0.060)	(0.761)	(0.008)	(0.394)
Muslim	-0.015	0.023	-0.166	0.061
	(0.854)	(0.772)	(0.177)	(0.512)
Other or no answer	-0.039	0.068	-0.149	0.002
	(0.675)	(0.511)	(0.248)	(0.987)
German native speaker	0.010	-0.157	0.172	0.022
	(0.922)	(0.190)	(0.136)	(0.796)
(…) residency	0.091	0.069	0.091*	0.058
	(0.216)	(0.441)	(0.096)	(0.412)
N	519	256	263	435

Estimated average marginal (age) or discrete (all other variables) probability effects of multinomial logistic regressions. Dependent variable is 1 if subject chooses vegan or vegetarian voucher and 0 otherwise. Model (1) shows results for the full sample, while models (2) to (4) refer to subsamples as denoted in the headings. All models are estimated with standard errors clustered at the session level. P-values in parentheses. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5. Regression results on no-voucher choices

	(1)	(2)	(3)	(4)
	Full Sample	Males	Non-males	Meat-eaters
Treatment (Base category: *Private No Info*)				
Private Info	0.034	0.037	0.035	0.038
	(0.524)	(0.663)	(0.630)	(0.524)
Public No Info	0.104*	0.066	0.150***	0.083
	(0.087)	(0.398)	(0.006)	(0.258)
Public Info	0.142***	0.155**	0.120**	0.119**
	(0.007)	(0.045)	(0.029)	(0.021)
Male	0.054			0.072*
	(0.158)			(0.080)
Acquainted	-0.043	-0.092	-0.000	-0.053
	(0.216)	(0.110)	(0.993)	(0.215)
Environmental class	-0.075*	-0.193***	0.021	-0.069
	(0.056)	(0.000)	(0.723)	(0.211)
Male session instructor	0.007	0.010	0.014	0.024
	(0.869)	(0.828)	(0.804)	(0.597)
Age	0.002	0.003	0.000	0.002
	(0.663)	(0.560)	(0.962)	(0.707)
Religion (Base category: None)				
Christian (Protestant)	0.061	0.040	0.075	0.060
	(0.268)	(0.592)	(0.289)	(0.310)
Christian (Catholic)	-0.039	-0.090	0.003	-0.089
	(0.487)	(0.196)	(0.975)	(0.236)
Muslim	0.132	0.023	0.268**	0.101
	(0.129)	(0.843)	(0.040)	(0.290)
Other or no answer	0.125	0.084	0.155	0.102
	(0.174)	(0.453)	(0.255)	(0.343)
German native speaker	0.076	0.122	0.014	0.098
	(0.385)	(0.230)	(0.888)	(0.252)
(…) residency	-0.177***	-0.170**	-0.164***	-0.177***
	(0.000)	(0.014)	(0.005)	(0.000)
N	519	256	263	435

Estimated average marginal (age) or discrete (all other variables) probability effects of multinomial logistic regressions. Dependent variable is 1 if subject chooses no voucher and 0 otherwise. Model (1) shows results for the full sample, while models (2) to (4) refer to subsamples as denoted in the headings. All models are estimated with standard errors clustered at the session level. P-values in parentheses. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

6. Discussion and conclusions

We set out to examine the effects of observability and an information nudge on food choices, which to our knowledge had not been done before. One of the four hypotheses has been clearly confirmed by the data, namely the effect of the information nudge on privately made food choices. We find that providing an information nudge that reminds subjects of the climate impacts of food reduces the likelihood of choosing meat by 12 percentage points. The group of non-males is particularly sensitive to the information which aligns with a recent study showing that women are more likely to reduce the consumption of red meat after receiving information about the impacts on health and animal welfare (Perino and Schwirplies, 2021). One possible reason for this could be that male meat-eaters have higher preferences for meat than the others, a higher $C'(a)$ in our model, and are not easily dissuaded. Fitting with this, Piazza et al. (2015) report that men endorse statements describing meat as 'nice' to a higher degree than women. An alternative explanation is that women are more willing to fulfill the expectation expressed through the information nudge, since the information was presented in a way that made the morally better options salient. Consistent with this, Schram and Charness (2015) find that women respond more strongly to peer advice than men in a modified dictator game.

Observability has only little effects on the likelihood of choosing meat or one of the meatless options. A striking result of our experiment is that, when observability and the information nudge are combined, then choosing the ecologically superior food becomes *less* likely. This negative effect is highly significant overall and is particularly pronounced for males. The theoretical model from which we derived our hypotheses does not provide for such an adverse effect of observability, nor does the original model of Bénabou and Tirole (2006). But we are not the first who observe such an effect. For example, Dufwenberg and Muren (2006) find that participants in a dictator game give less when they are paid publicly rather than in private. Engel (2011) finds in a meta-study of dictator games that observability makes dictators less likely to give nothing but also less likely to give more than half of the pie.

The decision makers in these studies, and also our study, obviously expect a *loss* of reputation if they behave 'too' morally. There are three possible reasons for this. First, morally exemplary behavior is sometimes rejected when observers see their own morality threatened (Monin et al., 2008; Minson and Monin, 2012; Bashir et al., 2013). Bénabou and Tirole (2011), for instance, argue that certain moral behavior by others is categorically rejected and suppressed because it otherwise makes it difficult to find excuses for one's own less moral behavior. This 'do-gooder derogation' also occurs in judgments of dietary decisions (Lea & Worsley, 2003; Minson and Monin, 2012; Cramwinckel et al., 2013; Markowski & Roxburgh, 2019; Vandermoere et al., 2019). Cramwinckel et al. (2013) report that such devaluation occurs primarily when the decision maker's

moral motivation is obvious to observers, which can help to explain why observability in our experiment has an adverse effect only when combined with the information nudge. One way to reflect such do-gooder derogation in the theoretical model may be to let the decision maker's reputational benefit increase with observers' expectations about his or her intrinsic motivation only up to a point and decrease thereafter. The decision maker then has to consider whether her behavior is still considered good or already exceeds what is socially valued. This comes into play especially if observers make their judgment of intrinsic motivation dependent on the behavior exhibited; in other words, if observers do not otherwise know the decision maker further.

The second possible explanation is that participants do not want to fulfill the expectation implicitly expressed through the information nudge when they are observed by their peers. This deviation from the expected norm and 'rebellion' against authority may have been reinforced by the classroom atmosphere in our experiment, but such behaviors can certainly be observed in real life as well, for example, in the recent demonstrations against corona measures and vaccination.

The third possible reason is that overly moral behavior under observation is perceived as inauthentic or dishonest. In this case, observers do not take the choice of one of the sustainable options as a sign of high intrinsic motivation to protect the environment, but as a sign of high motivation to improve the reputation. Another possible extension of the model thus is to make the decision maker's reputational benefit not only dependent on the perceived intrinsic motivation, but also on the perceived striving for reputation. Hoffmann et al. (2018), for instance, provide a model in which an actor's reputational benefit depends not only on a prosocial act, but also on whether the act is performed visibly or covertly and only becomes visible by chance. If the pursuit of reputation is judged negatively by observers, then the decision maker must consider whether her publicly visible moral behavior says more about her intrinsic motivation or more about her desire for reputation. This is especially relevant if the observers know the decision maker and can assess the underlying motivation for a certain behavior.

Another surprising result of our study is the relatively high proportion of participants who did not opt for a voucher. This can partly be explained by a general reluctance of some participants to state their food preferences and the fact that some were living elsewhere during the height of the corona pandemic and would not have been able to redeem the voucher at the local restaurant. However, the proportion of participants who did not choose a voucher increased significantly in the public treatments, which cannot be explained by this. As we have explained before, both the choice of the meat voucher and the meatless vouchers can send an unwanted signal to others. Some of our participants are willing to forgo a voucher in order to avoid any signal, as apparently all vouchers can damage the reputation for different reasons. Such behavior is not captured in our simple theoretical model, since choosing the ecologically better option cannot lead to reputation losses by

definition. But it has also been found in other contexts that people give up money or put up with circumstances in order to avoid making certain decisions. For instance, some people prefer to forgo participation in a dictator game or delegate the decision even if it means losing income (Dana et al. 2006; Hamman et al. 2010; Bartling and Fischbacher 2012; Lazear et al. 2012) or they actively seek to avoid requests for donations (DellaVigna et al. 2012; Andreoni et al. 2017). In these studies, all options are bad once confronted with the decision, and this seems also to be true for the choice between meat and meatless in our study.

While we refrain from adjusting the simple model and the hypotheses derived from it in retrospect, we believe that these are promising avenues for future research. We also leave it to future research to investigate whether the results can be replicated with other samples and other contexts. Arguably, the most important limitation of our study is that we examine only short-term behavioral adaptations. It is quite possible that social feedback effects operate gradually over time, which would need to be investigated with the collection of longitudinal data over longer periods of time. Nevertheless, our study offers important insights into how flexibly people adjust their food choices in the short term and what factors play a role in this.

In terms of policy implications, we conclude from our findings that information nudges reminding people of the environmental impacts of food can help support more sustainable diets. We have to consider, however, that consumers are exposed to a lot of information when shopping for food, which is likely to limit the effect. It must also be considered that the effect of information nudges depends on the context. Providing information in a restaurant or public canteen, where people eat with colleagues or distant acquaintances, may have a different effect due to signaling than providing information in a supermarket, where people usually shop alone or with their closest family members.

The effect of providing information depends not only on the existence of a signaling effect, but also on whether consumers are able to avoid it. If there are several equivalent restaurants or supermarkets and only one of which provides environmental information about the food, then the information and signaling effect can easily be avoided. Previous literature on the effects of environmental information and labeling on food consumption has yielded promising results; not only when subjects shopped alone in an online supermarket (Camilleri et al., 2019; Muller et al., 2019; Panzone et al., 2021a), but also when they chose food in the company of others, as in the two studies conducted in university dining halls (Brunner et al., 2018; Lohmann et al., 2022). It might have been possible for the participants to escape the information and signaling, but it was probably cumbersome. In contrast, if it is easy for consumers to avoid the signaling effect, as was the case in our study, then providing information may backfire by driving consumers away. In our view, this is an important finding for all providers of food and groceries considering the use of

information or labels to steer consumption. This is also an important finding for policy makers, as it provides an argument for mandatory labeling that would discourage such avoidance strategies.

Our results suggest that we cannot rely on mere visibility of food choices to achieve more sustainable diets. Although a test of the robustness of our results is not yet available, we assume that observability had a relatively good chance of being effective in our sample because these are young people who are not yet completely entrenched in their habits, who are probably concerned about their reputation at this stage of their lives, and who tend to be politically liberal and green rather than conservative. If the goal is a far-reaching change in diets, then it appears advisable to also introduce stricter measures such as pricing instruments (Panzone et al., 2021b; Funke et al., 2022). More generally, our results suggest that researchers and policymakers should be alert not only to opportunities where transparency generates more prosocial and pro-environmental behavior, but also to situations where transparency generates the opposite. Aside from food, there may be other sustainable behaviors that people would be willing to adopt if they did not fear reputational losses. In which contexts positive effects and in which contexts negative effects can be expected and which instruments can enhance the positive effects and mitigate the negative effects are certainly exciting and important tasks for future research in environmental economics.

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Appendix

Table A1. Food choices based on accuracy of emission reduction potential estimates and information treatment

	All treatments			*No Info* treatments			*Info* treatments		
Choice	Correct estimates	Incorrect estimates	p-value from χ^2-test	Correct estimates	Incorrect estimates	p-value from χ^2-test	Correct estimates	Incorrect estimates	p-value from χ^2-test
Meat	24.0%	29.7%	0.216	28.3%	30.3%	0.782	21.7%	28.9%	0.218
Vegan or vegetarian	53.5%	39.5%	0.005	45.7%	43.0%	0.740	57.8%	35.3%	0.001
No voucher	22.5%	30.9%	0.066	26.1%	26.7%	0.932	20.5%	35.8%	0.012

Reported are significance levels of pairwise χ^2-tests of average proportions between subjects who estimate correctly and those who do not. Estimates are considered correct if both the vegan and the vegetarian estimate do not deviate more than 14 percentage points up or down from the correct values. We calculated frequentist q-values with the qqvalue-command and Simes method (Benjamini and Yektuieli 2001, as described in Newson 2010) to account for multiple hypothesis testing. For comparisons colored in red, the null hypothesis of equal means can still be rejected if the rate of falsely rejected null hypotheses (i.e., the false discovery rate) for all nine comparisons is controlled at 0.05 (Newson 2010).

Food choices based on accuracy of emission reduction potential estimates

Table A1 shows comparisons of food choices between subjects who estimate the emission reduction potential of meatless diets correctly and those who do not. We do not find any significant differences in food choices or no-voucher choices when no information is provided. When information is provided, participants who correctly remember the emission reduction potentials for both meatless diets (or at least the order of magnitude) have a 22.5 percentage points higher likelihood to choose a vegan or vegetarian voucher than those who do not remember the correct values (p=0.001). Subjects who do not remember the correct values are more likely to choose no voucher (p=0.012).

We also find that participants with correct recall in the information treatments differ from those with incorrect recall in more than just knowledge. The group that correctly remembers the information contains a significantly higher share of vegans and vegetarians than the group that remembers incorrectly (25% vs 10%, p=0.002 based on χ^2-test). In contrast, we find virtually no difference in the share of vegans and vegetarians between the two groups in the treatments without information (15% in the group that estimates correctly vs. 16% in the group that estimates incorrectly, p=0.939 based on χ^2-test). This also implies that, in the information treatments, vegans and vegetarians are significantly more likely to correctly remember the information than meat-eaters, while there is only little difference in correct estimates between meat-eaters and non-meat-eaters in the treatments without information. These results suggest that, although estimates for all groups improve with the information provided (see Table 2 in the main paper), participants who already follow a sustainable diet read the information more carefully and remember it better. We

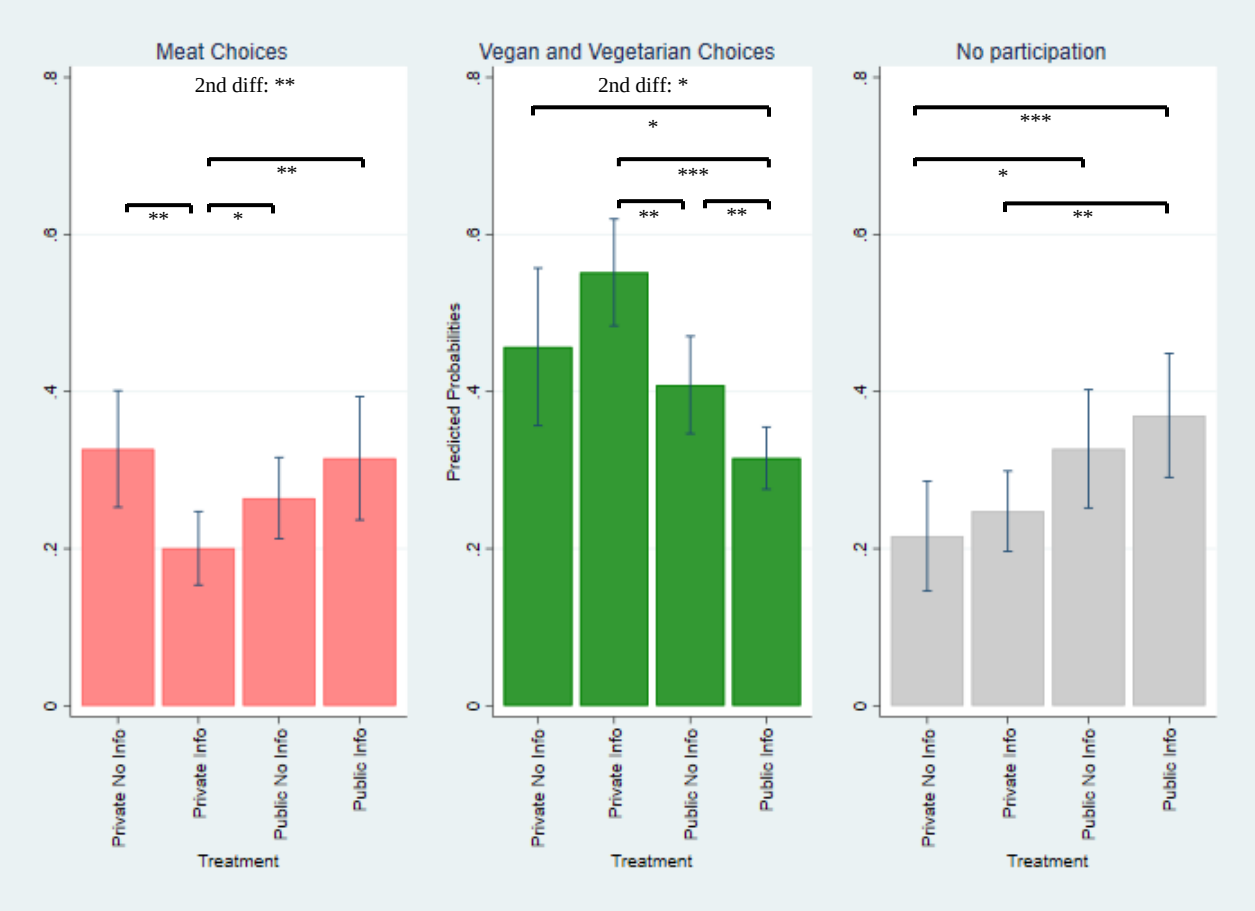
must be cautious with these results, however, because the group of vegans and vegetarians is relatively small.

Table A2. Regression results food choices, multinomial model without pooling of vegan and vegetarian choices

	Meat	Vegan	Vegetarian	No voucher
Treatment (Baseline: *Private No Info*)				
Private Info	-0.119**	-0.014	0.098	0.035
	(0.034)	(0.688)	(0.231)	(0.513)
Public No Info	-0.060	-0.013	-0.033	0.105*
	(0.210)	(0.786)	(0.686)	(0.085)
Public Info	-0.013	-0.046	-0.082	0.142***
	(0.806)	(0.179)	(0.164)	(0.007)
Male	0.090**	-0.024	-0.121***	0.054
	(0.020)	(0.281)	(0.007)	(0.158)
Acquainted	0.024	0.044	-0.024	-0.044
	(0.562)	(0.169)	(0.518)	(0.207)
Environmental class	-0.172***	0.150***	0.094*	-0.072*
	(0.003)	(0.000)	(0.056)	(0.073)
Age	-0.009*	-0.001	0.008	0.002
	(0.078)	(0.853)	(0.250)	(0.644)
Religion (Baseline: None)				
Christian (Protestant)	-0.072	-0.011	0.022	0.061
	(0.153)	(0.762)	(0.587)	(0.275)
Christian (Catholic)	0.166***	-0.069*	-0.058	-0.039
	(0.003)	(0.087)	(0.345)	(0.493)
Muslim	-0.119	0.025	-0.035	0.129
	(0.169)	(0.728)	(0.594)	(0.139)
Other religion or no answer	-0.086	-0.044	0.004	0.126
	(0.185)	(0.207)	(0.962)	(0.169)
German native speaker	-0.086	0.014	-0.004	0.076
	(0.304)	(0.665)	(0.970)	(0.388)
Male session instructor	0.011	0.030	-0.047	0.006
	(0.789)	(0.304)	(0.273)	(0.887)
(...) residency	0.087	0.048**	0.042	-0.177***
	(0.148)	(0.044)	(0.522)	(0.000)
N		519		

Estimated average marginal (age) or discrete (all other variables) probability effects of multinomial logistic regressions. Each column refers to the estimated effects on the respective level of the categorical outcome variable. Standard errors are clustered at the session level. P-values in parentheses. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure A1. Treatment differences in predicted probabilities of food choices



We use Stata's margins-command for predicted probabilities and the SPost13 package (Long & Freese, 2014) for postestimation calculations. All reported effects are estimated discrete probability effects at the means of all other explanatory variables. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Treatment effects on predicted probabilities of food choices

Figure A1 shows that there is a clear and significant effect of observability on food choices when information is provided. The predicted probability to choose a vegan or vegetarian voucher drops by more than 20 percentage points (p<0.001) between the *Private Info* and the *Public Info* treatment. This effect is accompanied by a significant rise in both meat voucher choices (11.4 percentage points, p=0.016) and no-voucher choices (12.2 p.p., p=0.040). Inducing observability when no information is provided in turn moderately lowers vegetarian and meat voucher choices, although no effect is statistically significant. The provision of information decreases the likelihood to select a meat voucher by about one third when choices are private (p=0.036). The corresponding rise in meatless choices is not statistically significant (p=0.271). When choices are public, in turn, information reduces meatless choices significantly by about 10 percentage points (p=0.028) and increases meat choices slightly, but not significantly. The calculation of second differences shows

a significant interaction effect between information and observability on meat choices (p=0.032) and meatless choices (p=0.054). No-voucher choice is significantly more likely in the public treatments compared to the respective private treatments (p=0.089 for *No Info*, p=0.040 for *Info*). Compared to the baseline, the combination of information and observability almost doubles the share of participants who do not want a voucher (plus 15.4 p.p., p=0.007). This effect is driven by a significant decline in meatless choices (p=0.022), while meat choices do not change much.

Power analysis

We ran post-hoc power analyses to identify which minimum difference in proportions between two treatments we could have found with 80% power at a 10% significance level, based on the realized number of observations. To do so, we first listed choice proportions by treatment for the full sample and each of the subsamples shown in the main text. Then, we listed all six potential pairwise comparisons of treatments, took the proportion of a choice level in one treatment as baseline, specified the direction of the effect as it was observed in the data, and calculated the minimum or maximum proportion in the other treatment that could have been detected with 80% power at a 10% significance level based on the numbers of observations in both treatments with the command *power twoproportions* in Stata. From this, we derived minimum detectable effect sizes as differences in proportions and Cohen's h (Cohen 1988). The minimum detectable difference in proportions are between 13.5 and 15.3 percentage points for the pairwise comparisons of all choices for the full sample (Cohen's h around 0.30), between 14.8 and 16.8 percentage points for meat-eaters (Cohen's h around 0.33), between 18.4 and 21.4 percentage points for males (Cohen's h around 0.44), and between 18.1 and 21.2 percentage points for non-males (Cohen's h around 0.43).

Table A3. Characteristics of full sample and subsamples by treatment and overall

	Variable	Private No Info	Private Info	Public No Info	Public Info	All
Full sample	Gender					
	Male	0.47	0.45	0.51	0.54	0.49
	Female, diverse, or not provided	0.53	0.55	0.49	0.46	0.51
	Mean age in years	23.5	23.8	23.9	24.0	23.8
	Not provided	0.02	0.00	0.01	0.01	0.01
	Religion					
	None	0.50	0.45	0.48	0.54	0.49
	Protestant	0.17[bb,c]	0.27[aa]	0.25[a]	0.23	0.23
	Catholic	0.12[cc]	0.07	0.04[aa]	0.07	0.07
	Muslim	0.09	0.09	0.10[d]	0.04[c]	0.08
	Other or not provided	0.13	0.13	0.13	0.11	0.12
	Native language					
	German	0.79[d]	0.82	0.82	0.87[a]	0.82

	Other or not provided	0.21	0.18	0.18	0.13	0.18
	Course attended					
	Environmental	0.18	0.14	0.17	0.15	0.16
	Non-environmental	0.82	0.86	0.83	0.85	0.84
	Diet					
	Including meat	0.83	0.82	0.84	0.86	0.84
	Vegetarian or vegan	0.15	0.16	0.16	0.13	0.15
	Not provided	0.02	0.01	0.01	0.01	0.01
	(…) residency					
	Living in (…)	0.65	0.71[dd]	0.69[d]	0.57[bb,c]	0.65
	Not living in (…)	0.32	0.29	0.31	0.41	0.33
	Not provided	0.03	0.00	0.01	0.02	0.01
	Number of observations	127	134	140	136	537
Males	Mean age in years	24.2	24.0	24.3	24.7	24.3
	Not provided	0.02	0.00	0.00	0.01	0.01
	Religion					
	None	0.52	0.50	0.49	0.55	0.51
	Protestant	0.12[bb,cc;b,c]	0.28[aa;a]	0.28[aa;a]	0.22	0.23
	Catholic	0.10[c]	0.05	0.03[a]	0.07	0.06
	Muslim	0.08	0.12	0.13[d]	0.04[c]	0.09
	Other or not provided	0.18[bb,c]	0.05[aa]	0.09[a]	0.12	0.11
	Native language					
	German	0.73[ddd;dd]	0.78[dd;d]	0.83	0.92[aaa,bb;aa,b]	0.82
	Other or not provided	0.27	0.22	0.17	0.08	0.18
	Course attended					
	Environmental	0.13	0.15	0.17	0.11	0.14
	Non-environmental	0.87	0.85	0.83	0.89	0.86
	Diet					
	Including meat	0.82	0.90	0.89	0.93	0.89
	Vegetarian or vegan	0.15	0.10	0.10	0.07	0.10
	Not provided	0.03	0.00	0.01	0.00	0.01
	(…) residency					
	Living in (…)	0.68[d]	0.67	0.75[ddd;dd]	0.54[a,ccc;cc]	0.66
	Not living in (…)	0.32	0.33	0.25	0.46	0.34
	Number of observations	60	60	72	73	265
Non-Males	Mean age in years	22.9	23.7	23.4	23.2	23.3
	Not provided	0.03	0.00	0.01	0.00	0.01
	Religion					
	None	0.48	0.41	0.47	0.54	0.47
	Protestant	0.21	0.26	0.22	0.24	0.23
	Catholic	0.13	0.08	0.06	0.08	0.09
	Muslim	0.10	0.07	0.07	0.05	0.07
	Other or not provided	0.07[bb,c]	0.19[aa]	0.18[a]	0.10	0.14
	Native language					
	German	0.84	0.85	0.81	0.81	0.83
	Other or not provided	0.16	0.15	0.19	0.19	0.17
	Course attended					
	Environmental	0.22	0.14	0.18	0.21	0.18
	Non-environmental	0.78	0.86	0.82	0.79	0.82
	Diet					
	Including meat	0.84	0.76	0.78	0.78	0.79
	Vegetarian or vegan	0.15	0.22	0.22	0.21	0.20
	Not provided	0.01	0.03	0.00	0.02	0.01
	(…) residency					
	Living in (…)	0.66	0.74	0.63	0.63	0.67
	Not living in (…)	0.34	0.26	0.37	0.37	0.33

	Number of observations	67	74	68	63	272
Meat-eaters	Gender					
	Male	0.47[d]	0.49	0.55	0.58[a]	0.52
	Female, diverse, or not provided	0.53	0.51	0.45	0.42	0.48
	Mean age in years	23.4	23.9	23.8	24.0	23.8
	Not provided	0.02	0.00	0.01	0.01	0.01
	Religion					
	None	0.50	0.43	0.45	0.51	0.47
	Protestant	0.19	0.25	0.25	0.24	0.23
	Catholic	0.11[cc]	0.08	0.04[aa]	0.08	0.08
	Muslim	0.10[d]	0.09	0.12[dd]	0.04[a,cc]	0.09
	Other or not provided	0.10	0.15	0.14	0.13	0.13
	Native language					
	German	0.79[d]	0.80[d]	0.81	0.88[a,b]	0.82
	Other or not provided	0.21	0.20	0.19	0.12	0.18
	Course attended					
	Environmental	0.14	0.10	0.16	0.12	0.13
	Non-environmental	0.86	0.90	0.84	0.88	0.87
	(…) residency					
	Living in (…)	0.63	0.67[d]	0.68[d]	0.57[b,c]	0.64
	Not living in (…)	0.37	0.33	0.32	0.43	0.36
	Number of observations	105	110	117	117	449

Reported are significance levels of pairwise χ^2-tests of average proportions between treatments. Shares of diet and (…) residency are tested disregarding 'not provided' answers due to low number of observations. Subscript letters denote the treatment from which the respective treatment significantly differs. Black subscripts refer to significance levels of unadjusted p-values. Levels of significance: [a,b,c,d] $p < 0.10$, [aa,bb,cc,dd] $p < 0.05$, [aaa,bbb,ccc,ddd] $p < 0.01$. Red subscript letters refer to frequentist q-values calculated with the *qqvalue*-command and Simes method (Benjamini and Yekutieli 2001, as described in Newson 2010) to account for multiple hypothesis testing. The subscripts describe whether the null hypothesis of equal means for the respective comparison can still be rejected if the rate of falsely rejected null hypotheses (i.e., the false discovery rate) among all comparisons for the respective variable in the respective subgroup is controlled at 0.10 ([a,b,c,d]), 0.05 ([aa,bb,cc,dd]), or 0.01 ([aaa,bbb,ccc,ddd]) (Newson 2010).

Table A4. Regression results from multinomial regression model including interaction term between treatments and gender

	Meat	Vegan or vegetarian	No voucher
Treatment (Baseline: *Private No Info*)			
Private Info	-0.115**	0.080	0.034
	(0.038)	(0.307)	(0.514)
Public No Info	-0.058	-0.048	0.106*
	(0.223)	(0.453)	(0.075)
Public Info	-0.013	-0.127**	0.140***
	(0.807)	(0.022)	(0.008)
Male	0.090**	-0.146***	0.055
	(0.017)	(0.001)	(0.153)
Acquainted	0.026	0.017	-0.044
	(0.529)	(0.695)	(0.207)
Environmental class	-0.177***	0.247***	-0.071*
	(0.002)	(0.000)	(0.077)
Age	-0.009*	0.007	0.002
	(0.085)	(0.277)	(0.736)
Religion (Baseline: None)			
Christian (Protestant)	-0.076	0.012	0.064
	(0.122)	(0.822)	(0.248)
Christian (Catholic)	0.165***	-0.125*	-0.040
	(0.002)	(0.051)	(0.473)
Muslim	-0.118	-0.016	0.134
	(0.162)	(0.840)	(0.116)
Other religion or no answer	-0.076	-0.042	0.119
	(0.251)	(0.640)	(0.225)
German native speaker	-0.087	0.017	0.071
	(0.288)	(0.873)	(0.424)
Male session instructor	0.008	-0.011	0.004
	(0.845)	(0.784)	(0.929)
(...) residency	0.088	0.084	-0.172***
	(0.135)	(0.245)	(0.000)
N	519		

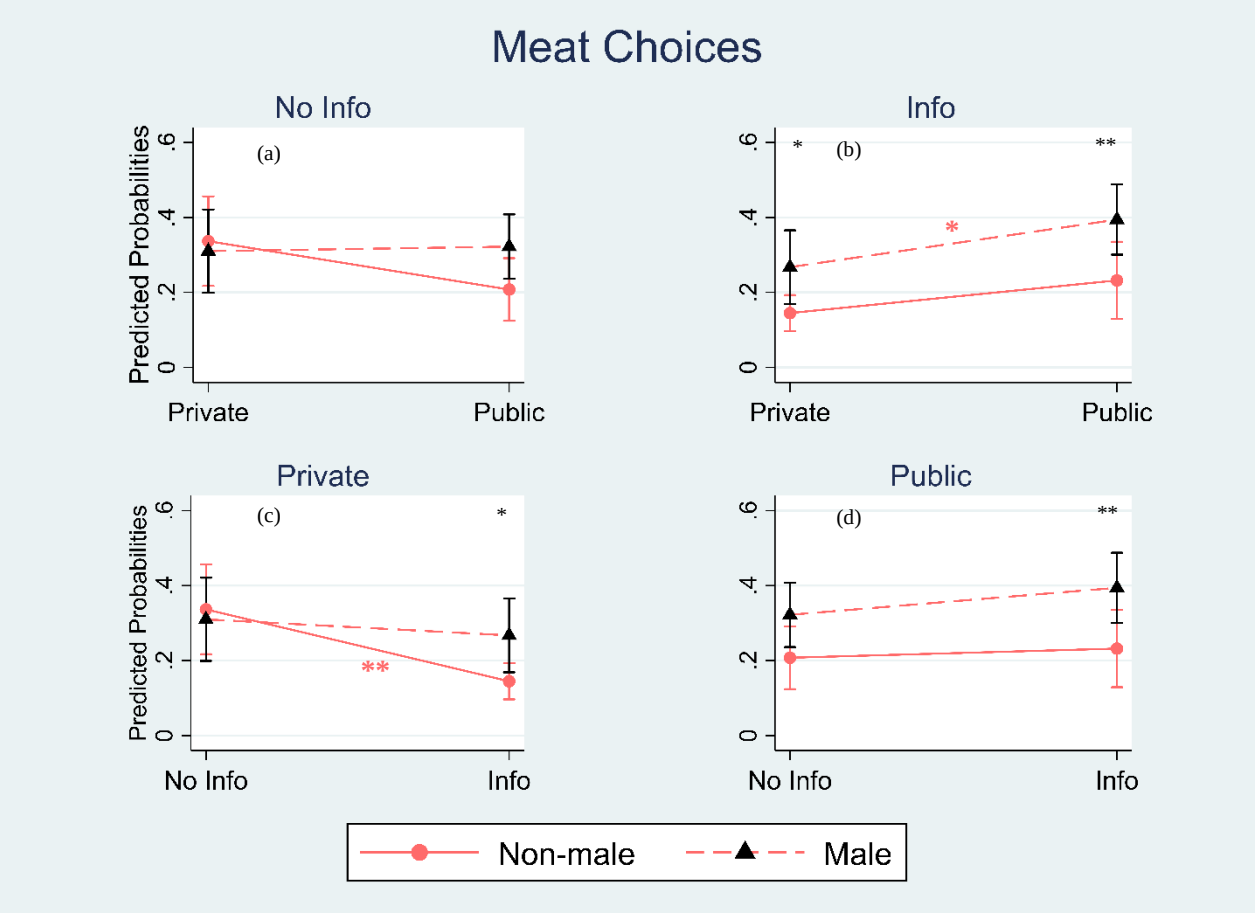
Estimated average marginal (age) or discrete (all other variables) probability effects of multinomial logistic regressions fitted with a two-way interaction between treatment and male. Each column refers to the estimated effects on the respective level of the categorical outcome variable. Standard errors are clustered at the session level. P-values in parentheses. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Interaction effects between treatment and gender

The regression analyses in Tables 3, 4, and 5 show that the effects of the treatment variables vary in direction and strength between males and non-males. However, they do not show whether the response of non-males to information or observability differs significantly from the response of males. For this analysis, we fitted an additional multinomial regression model that is identical to the one shown in the main paper, but additionally includes an interaction term between treatment and gender. Table A4 shows the regression results, which are quantitatively and qualitatively very similar to the regression results without the interaction term (shown in columns (1) of Tables 3, 4, and 5). Figures A2-A4 present the interaction plots derived from the regression models, as they are easier to interpret (Mize, 2019).

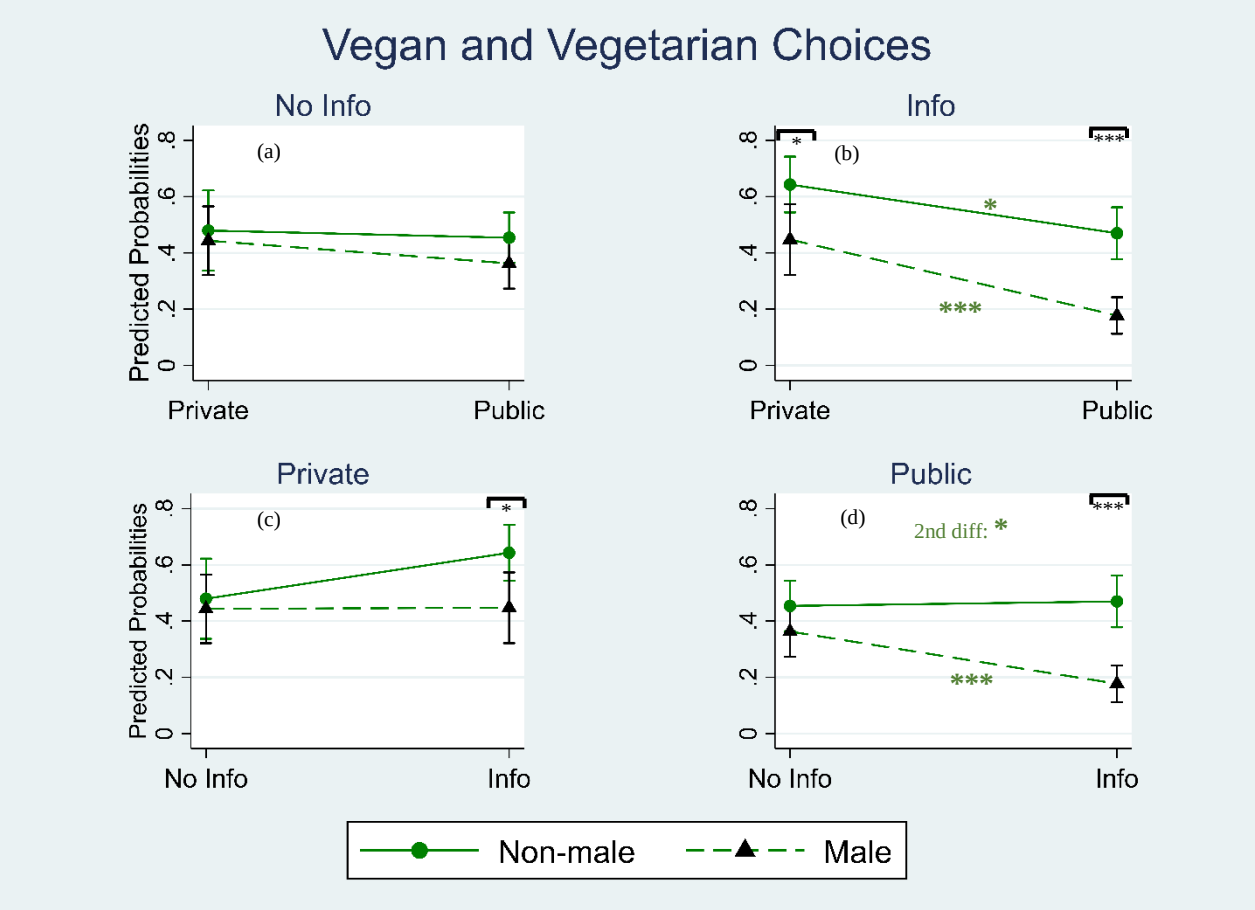
Figure A2 shows that information reduces private meat choices of non-males significantly, while the choices of males remain almost unchanged (panel c). As mentioned before, observability without information reduces the likelihood of choosing meat of non-males (panel a), though the effect is no longer significant in the model with the interaction term. Observability with information increases the likelihood of meat choices for both groups (panel b), although the effect is stronger and significant only for males. Figure A3 presents the comparison of the treatment effects between males and non-males on vegan and vegetarian choices. Information makes males significantly less likely to choose one of the meatless options when their decision is observed. This reaction is significantly different from non-males who do not change their behavior, which is indicated by a significant second difference in the bottom right panel d. Compared to the *Private Info* treatment, both males and non-males have a significantly lower likelihood to choose a vegan or vegetarian voucher in the *Public Info* treatment (panel b). The interaction plots show that food choices among males and non-males are very similar in the baseline, and differ significantly only in the information treatments. In the *Public Info* treatment, males are almost twice as likely to choose meat as non-males, while non-males are more than twice as likely to choose a vegan or vegetarian voucher (panel b in Figures A2 and A3). Figure A4 shows that no-voucher choices do not differ as much between the gender groups. Observability without information significantly increases no-voucher choices among non-males (panel a) and observability without information significantly increases it among males (panel b), but in both cases, the trend goes in the same direction among both groups.

Figure A2. Interaction effects between treatments and gender on meat choices



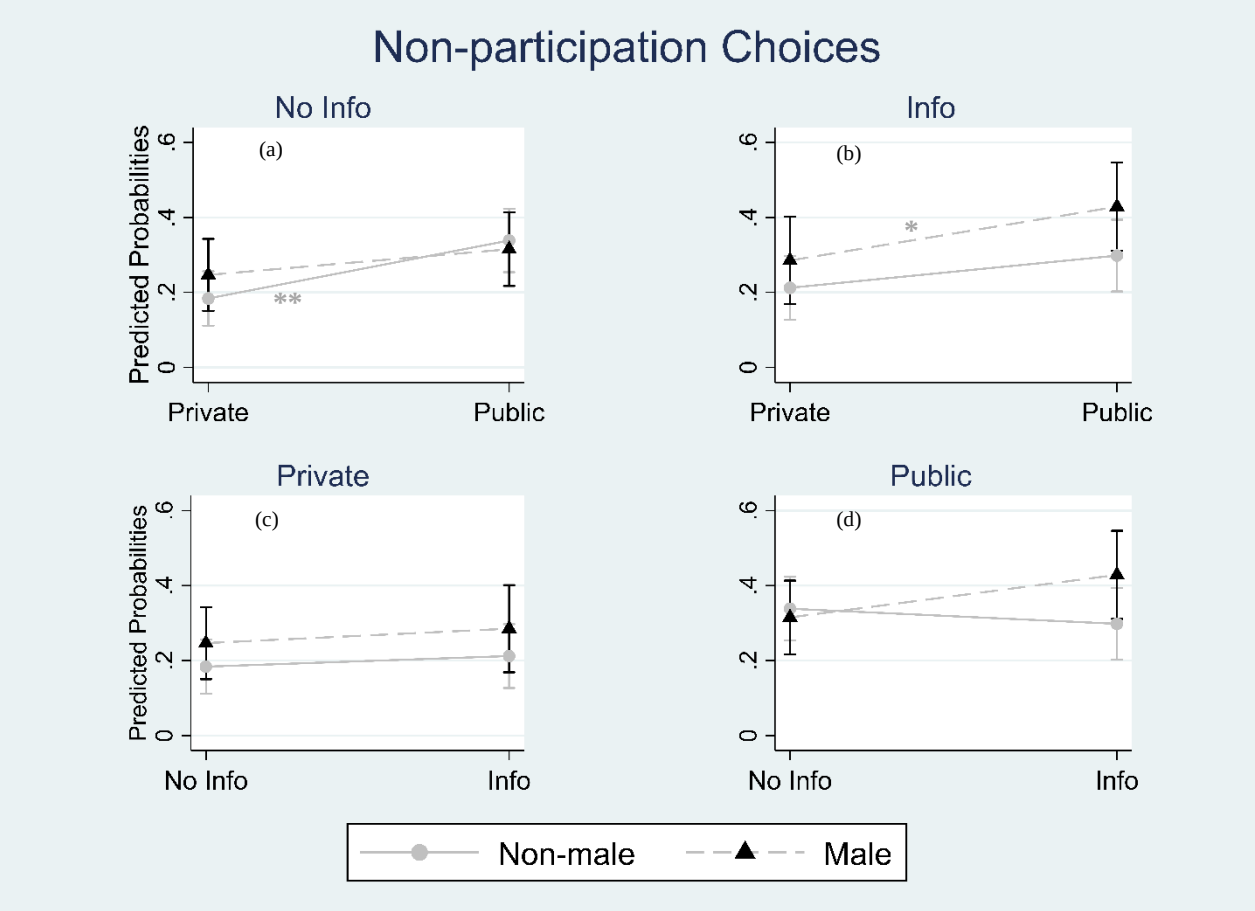
The upper panels a and b show interactions between gender and observability at fixed information levels and the lower panels c and d show interactions between gender and information at fixed observability levels. Colored stars denote significant differences within a gender group between treatments, while black stars denote significant differences between gender groups in the same treatment. We use Stata's margins-command for predicted probabilities and the SPost13 package (Long & Freese, 2014) for postestimation calculations. All reported effects are estimated discrete probability effects at the means of all other explanatory variables. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure A3. Interaction effects between treatments and gender on vegan and vegetarian choices



The upper panels a and b show interactions between gender and observability at fixed information levels and the lower panels c and d show interactions between gender and information at fixed observability levels. Colored stars denote significant differences within a gender group between treatments, while black stars denote significant differences between gender groups in the same treatment. We use Stata's margins-command for predicted probabilities and the SPost13 package (Long & Freese, 2014) for postestimation calculations. All reported effects are estimated discrete probability effects at the means of all other explanatory variables. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure A4. Interaction effects between treatments and gender on no-voucher choices



The upper panels a and b show interactions between gender and observability at fixed information levels and the lower panels c and d show interactions between gender and information at fixed observability levels. Colored stars denote significant differences within a gender group between treatments, while black stars denote significant differences between gender groups in the same treatment. We use Stata's margins-command for predicted probabilities and the SPost13 package (Long & Freese, 2014) for postestimation calculations. All reported effects are estimated discrete probability effects at the means of all other explanatory variables. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A5. Results from regression models of diet intentions

	(1)	(2)		
	Diet intentions more sustainable than current diet = 1	Diet intentions of those with more sustainable intentions		
		Flexitarian	Vegetarian	Vegan
Treatment (Baseline: *Private No Info*)				
Private Info	0.101	-0.027	-0.024	0.051
	(0.103)	(0.805)	(0.848)	(0.520)
Public No Info	-0.051	-0.107	0.139	-0.032
	(0.279)	(0.374)	(0.325)	(0.620)
Public Info	0.047	0.239**	-0.197**	-0.043
	(0.336)	(0.017)	(0.028)	(0.398)
Male	-0.093***	0.206***	-0.080	-0.125***
	(0.010)	(0.002)	(0.238)	(0.001)
Acquainted	-0.050	0.111	-0.046	-0.065*
	(0.139)	(0.257)	(0.626)	(0.065)
Environmental class	0.068	-0.115*	-0.040	0.155**
	(0.206)	(0.067)	(0.558)	(0.011)
Age	-0.006	0.004	-0.006	0.001
	(0.288)	(0.683)	(0.513)	(0.833)
Religion (Baseline: None)				
Christian (Protestant)	-0.005	0.148	-0.062	-0.087*
	(0.900)	(0.116)	(0.402)	(0.054)
Christian (Catholic)	0.127	0.305***	-0.159	-0.146***
	(0.106)	(0.002)	(0.114)	(0.000)
Muslim	-0.155***	0.070	0.076	-0.146***
	(0.008)	(0.716)	(0.687)	(0.000)
Other religion or no answer	-0.047	0.107	-0.069	-0.038
	(0.442)	(0.487)	(0.609)	(0.654)
German native speaker	-0.172**	-0.018	0.021	-0.003
	(0.042)	(0.844)	(0.826)	(0.960)
Male session instructor	-0.043	0.085	-0.018	-0.067
	(0.131)	(0.278)	(0.779)	(0.288)
(...) residency	0.006	-0.016	-0.040	0.056
	(0.887)	(0.827)	(0.648)	(0.226)
N	488	162		

Estimated average marginal (age) or discrete (all other variables) probability effects of binary and multinomial logistic regressions. Model (1) shows a binary regression on a variable that takes the value 1 if the diet intentions of a participant is more sustainable than their current diet (see Q40 in the full questionnaire for wording of intentions) and 0 otherwise. Model (2) shows a multinomial regression of diet intentions for participants with more sustainable diet intentions than their current diet. Each column within this model refers to the estimated effects on the respective level of the categorical outcome variable *diet intention*. Thirteen observations stating 'Other' for diet or diet intentions are excluded due to ambiguity about diet sustainability and 20 observations are missing. Standard errors are clustered at the session level. P-values in parentheses. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Treatment effects on stated diet intentions

To test if the treatments affect food preferences (in addition to voucher choice), we analyze respondents' answers to the question which diet they intend to follow in the future. We first test whether respondents plan to follow a more sustainable diet in the future (Column (1) in Table A5). About 30% of respondents intend to follow a more sustainable diet than their current one in the future, while only three respondents state that they intend to follow a less sustainable diet in the future, and the rest do not intend to change their diet. The regression results show that the treatments have no significant effect on the stated intentions. In a next step, we look at what specific diets those who want to improve their diet are planning (Column (2)). Interestingly, among the subjects who plan to improve their diet, those in the *Public Info* treatment are significantly more likely to plan a flexitarian diet than those in all other treatments ($p=0.017$, $p=0.003$ and $p=0.005$ compared to *Private No Info*, *Private Info*, and *Public No Info*, respectively) and significantly less likely to plan a vegetarian diet ($p=0.028$, $p=0.057$ and $p=0.010$). This shows that the aversion to the more sustainable food, caused by the combination of information and observation, is still evident in the reported intentions. Intentions to follow a vegan diet in the future are not significantly affected by the treatments.

Treatment effects on other stated food and environmental attitudes

The treatments also affect several other variables on food and environmental attitudes elicited in the ex-post questionnaire. Based on non-parametric tests, we identified some variables that differ significantly across treatments and seem conceptually relevant. Most of these variables are based on Likert scales.[7] We transformed these variables by pooling the lower values (1-3) to a 'Low/Negative' level, keeping the midpoint (4) as the 'Neutral' level, and pooling the higher values (5-7) to a 'High/Positive' level. This way, we can show more concise results that directly display whether the treatments affect negative, neutral, and positive answers to the questions. Table A6 shows the average discrete probability effects of the treatments on the transformed variables, based on ordinal logistic regressions. We recoded the base category of the treatment variable twice to enable pairwise comparisons and numbered the comparisons to facilitate interpretation.

[7] We also ran multinomial and ordinal logistic regressions of stated diet and ordinal regressions of stated meat consumption frequency and dairy consumption frequency with the same control variables as in the main text regressions and in Table A6. None of the treatment effects are statistically significant in any of these models.

The first comparison (comparison (1) in Table A6) shows that subjects in the *Private Info* treatment have a significantly lower likelihood to state a positive attitude towards omnivorous diets and a significantly higher likelihood to state negative attitudes than those in the baseline treatment. Positive attitudes towards a vegetarian diet in turn become significantly more likely in *Private Info* compared to the baseline, while neutral attitudes are less likely. The information nudge also reduces the stated importance of both convenience/effortlessness and habit for one's personal diet. When comparing *Public No Info* to *Private No Info* (comparison (2)), we find that subjects in *Public No Info* have a significantly lower probability of reporting a high importance of environmental friendliness of one's diet and a higher probability of reporting a low importance or neutral opinion than those in the baseline treatment. The same effects can be found when comparing the *Public Info* treatment to the baseline (comparison (3)). Likewise, subjects in *Public No Info* and in *Public Info* have a lower probability of reporting high self-efficacy with regard to climate change and higher probability of reporting low self-efficacy or a neutral opinion compared to the baseline treatment (comparisons (2) and (3)). Subjects in *Public Info* are less likely to report a high importance of convenience and effortlessness of one's diet and more likely to report a low importance compared to the baseline (comparison (3)).

We also find several adverse effects of the *Public Info* treatment on sustainability-related items when comparing it to *Private Info* (comparison (5)). The likelihood of stating a high importance of environmental friendliness of one's diet is again significantly lower in *Public Info*, which also holds for the stated importance of eco-friendliness when making everyday life choices in general. Positive attitudes towards an omnivorous diet are more likely, while negative attitudes are less likely, and participants also state a high enjoyment of meat products and high importance of dietary habits more often. Finally, stating a high enjoyment of meat products is also significantly more likely in *Public Info* than in *Public No Info* (comparison (6)), while stating a high importance of convenience and effortlessness is less likely. Taken together, the results suggest that both public treatments and specifically *Public Info* by and large consistent effects on participants' reported attitudes towards the importance of environmental friendliness and other aspects of food choice.

Table A6. Ordinal regression results on reported food and environmental preferences

	Importance animal welfare (Q27)	Importance environmental friendliness (Q27)	Attitude omnivorous diet (Q28)	Attitude vegetarian diet (Q28)	Attitude vegan diet (Q28)	Seriousness of climate change (Q29)	Enjoyment of meat products (Q39)	Importance taste (Q27)	Importance convenience/ effortlessness (Q27)	Importance habit (Q27)	Self-efficacy climate change (Q29)	Importance eco-friendliness life decisions (Q30)
Treatment (Base: Private No Info)												
(1) Private Info												
Low/Negative	-0.000	-0.019	0.114*	-0.049	-0.053	-0.000	0.029	-0.000	0.068**	0.107***	0.007	-0.017
	(0.986)	(0.390)	(0.075)	(0.115)	(0.353)	(0.998)	(0.563)	(0.982)	(0.050)	(0.004)	(0.769)	(0.579)
Neutral	-0.000	-0.018	0.001	-0.080**	-0.018	-0.000	0.009	-0.001	0.030**	0.040***	0.006	-0.018
	(0.986)	(0.384)	(0.851)	(0.036)	(0.281)	(0.998)	(0.579)	(0.982)	(0.036)	(0.008)	(0.773)	(0.560)
High/Positive	0.001	0.037	-0.115*	0.129*	0.071	0.000	-0.037	0.001	-0.098**	-0.147***	-0.013	0.035
	(0.986)	(0.385)	(0.074)	(0.056)	(0.334)	(0.998)	(0.566)	(0.982)	(0.043)	(0.004)	(0.771)	(0.569)
(2) Public No Info												
Low/Negative	0.050	0.068**	0.045	-0.036	0.016	0.020	0.029	-0.006	-0.025	0.013	0.056***	0.042
	(0.132)	(0.015)	(0.316)	(0.152)	(0.743)	(0.204)	(0.607)	(0.472)	(0.299)	(0.755)	(0.008)	(0.173)
Neutral	0.026	0.046***	0.005	-0.055*	0.004	0.022	0.009	-0.016	-0.016	0.007	0.045**	0.034
	(0.135)	(0.008)	(0.449)	(0.091)	(0.759)	(0.313)	(0.610)	(0.481)	(0.330)	(0.755)	(0.016)	(0.220)
High/Positive	-0.076	-0.115***	-0.050	0.091	-0.020	-0.042	-0.038	0.021	0.041	-0.020	-0.101***	-0.076
	(0.131)	(0.009)	(0.324)	(0.103)	(0.746)	(0.258)	(0.607)	(0.474)	(0.311)	(0.755)	(0.007)	(0.188)
(3) Public Info												
Low/Negative	0.024	0.051*	0.024	-0.021	0.020	-0.000	-0.057	0.005	0.086**	0.026	0.046**	0.020
	(0.419)	(0.050)	(0.558)	(0.500)	(0.736)	(0.999)	(0.282)	(0.672)	(0.042)	(0.418)	(0.035)	(0.582)
Neutral	0.014	0.037*	0.003	-0.029	0.005	-0.000	-0.023	0.013	0.035**	0.014	0.038**	0.018
	(0.421)	(0.055)	(0.595)	(0.476)	(0.749)	(0.999)	(0.254)	(0.649)	(0.025)	(0.421)	(0.023)	(0.598)
High/Positive	-0.038	-0.088**	-0.027	0.049	-0.024	0.000	0.080	-0.018	-0.121**	-0.040	-0.084**	-0.038
	(0.419)	(0.047)	(0.560)	(0.484)	(0.738)	(0.999)	(0.272)	(0.655)	(0.035)	(0.418)	(0.022)	(0.589)
Treatment (Base: Private Info)												
(4) Public No Info												
Low/Negative	0.050	0.088***	-0.069	0.013	0.069*	0.020	0.000	-0.005	-0.093***	-0.095**	0.049*	0.060**
	(0.171)	(0.004)	(0.218)	(0.427)	(0.063)	(0.257)	(0.993)	(0.468)	(0.010)	(0.010)	(0.051)	(0.016)
Neutral	0.026	0.064***	0.003	0.025	0.022*	0.022	0.000	-0.015	-0.046**	-0.033**	0.039**	0.051**
	(0.176)	(0.001)	(0.546)	(0.386)	(0.057)	(0.325)	(0.993)	(0.505)	(0.015)	(0.021)	(0.043)	(0.012)
High/Positive	-0.076	-0.151***	0.065	-0.038	-0.091*	-0.043	-0.001	0.021	0.139***	0.128**	-0.088**	-0.111**
	(0.171)	(0.001)	(0.208)	(0.398)	(0.058)	(0.288)	(0.993)	(0.493)	(0.010)	(0.011)	(0.040)	(0.011)
(5) Public Info												
Low/Negative	0.025	0.070***	-0.090*	0.029	0.073	0.000	-0.086**	0.005	0.018	-0.081**	0.039	0.038*
	(0.326)	(0.007)	(0.095)	(0.324)	(0.113)	(0.998)	(0.011)	(0.660)	(0.668)	(0.013)	(0.180)	(0.096)
Neutral	0.014	0.054***	0.002	0.051	0.023*	0.000	-0.032**	0.014	0.005	-0.026**	0.032	0.035
	(0.331)	(0.006)	(0.768)	(0.291)	(0.088)	(0.998)	(0.010)	(0.624)	(0.666)	(0.025)	(0.139)	(0.101)
High/Positive	-0.039	-0.124***	0.088*	-0.080	-0.095	-0.000	0.117***	-0.019	-0.023	0.107**	-0.071	-0.073*
	(0.326)	(0.005)	(0.088)	(0.300)	(0.104)	(0.998)	(0.009)	(0.634)	(0.667)	(0.013)	(0.154)	(0.094)

Treatment (Base: Public No Info)												
(6) Public Info												
Low/Negative	-0.026	-0.017	-0.021	0.016	0.003	-0.020	-0.086**	0.011	0.111***	0.013	-0.010	-0.022
	(0.407)	(0.584)	(0.609)	(0.598)	(0.943)	(0.317)	(0.021)	(0.247)	(0.002)	(0.700)	(0.597)	(0.500)
Neutral	-0.012	-0.010	-0.001	0.026	0.001	-0.022	-0.032***	0.029	0.051***	0.007	-0.007	-0.016
	(0.407)	(0.575)	(0.656)	(0.596)	(0.943)	(0.396)	(0.007)	(0.134)	(0.003)	(0.702)	(0.613)	(0.492)
High/Positive	0.038	0.027	0.023	-0.042	-0.004	0.042	0.118**	-0.039	-0.162***	-0.020	0.017	0.038
	(0.406)	(0.580)	(0.610)	(0.596)	(0.943)	(0.356)	(0.014)	(0.151)	(0.001)	(0.701)	(0.602)	(0.496)
	All models: Control variables gender, age, religion, native language, course, acquaintance with others in the same breakout room, gender of the breakout room instructor, and residency in (…) included but not shown.											
N	513	513	501	501	501	501	501	513	513	513	501	501

Estimated average discrete probability effects of ordinal logistic regressions. All dependent variables are originally coded from 1 to 7. Values from 1-3 are pooled to 'Low/Neutral' values of 4 represent 'Neutral', and values from 5-7 are pooled to 'High/Positive'. Treatment comparisons are numbered in parentheses to facilitate interpretation in the text. Standard errors are clustered at the session level. P-values in parentheses. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Predictors of no-voucher choices

A surprising result of our experiment is the relatively high share of respondents who do not want to receive a voucher, especially in the public treatments. To shed more light on this decision, we tested additional control variables as predictors for no-voucher choices. In Table A7, we report the results of binary logistic regressions of no-voucher choice with two additional control variables that proved to be good predictors, namely the frequency with which participants post own content on social media (as a proxy for privacy preferences) and diet.[8] The results show that participants who post own content a few times a month are significantly less likely to choose no voucher than those who do not have a social media profile (or prefer not to say how often they post own content). Higher social media posting frequency is also related to a lower likelihood of no-voucher choice in the private treatments. This suggests that these people generally prefer to forgo a voucher rather than choose a specific voucher, even when their choice is only observed by the experimenter.

In addition, diet is related to no-voucher choices. Flexitarians are significantly less likely to choose no voucher in the full sample, and as column (3) shows, this is mainly driven by the public treatments. This could reflect the fact that when participants believe one food option to be less socially appropriate, flexitarians are likely more willing to switch to another option, while omnivores, vegetarians and vegans are probably less flexible and therefore rather switch to no voucher. The separate regressions also reveal that being in an environmental class is related to a significantly lower likelihood to choose no voucher in the public treatments, but not in the private treatments.

[8] We chose binary regressions as the inclusion of diet as a control variable leads to estimation problems due to perfect prediction of meat choice in the multinomial model.

Table A7. Binary logistic regressions of no-voucher choices with additional control variables

	(1)	(2)	(3)
	Full sample	Private treatments	Public treatments
Treatment (Base category: Private No Info)			
Private Info	0.013		
	(0.814)		
Public No Info	0.107*		
	(0.089)		
Public Info	0.129**		
	(0.026)		
Info treatment		-0.001	0.020
		(0.991)	(0.694)
Male	0.002	0.046	-0.004
	(0.950)	(0.310)	(0.937)
Acquainted	-0.050	-0.114	-0.019
	(0.104)	(0.118)	(0.774)
Environmental class	-0.082**	-0.007	-0.155**
	(0.040)	(0.914)	(0.027)
Male session instructor	0.029	0.054	0.010
	(0.458)	(0.338)	(0.872)
Age	0.000	0.005	-0.005
	(0.957)	(0.461)	(0.506)
Religion (Base category: None)			
Christian (Protestant)	0.071	0.093	0.046
	(0.137)	(0.316)	(0.430)
Christian (Catholic)	-0.009	0.021	-0.042
	(0.894)	(0.794)	(0.612)
Muslim	0.124	0.217**	0.014
	(0.103)	(0.043)	(0.890)
Other or no answer	0.107	0.181	0.013
	(0.188)	(0.130)	(0.899)
German native speaker	0.094	0.124	0.061
	(0.290)	(0.120)	(0.600)
(…) residency	-0.160***	-0.156**	-0.159***
	(0.000)	(0.013)	(0.006)
Posting frequency on social media (Base category: No social media or prefer not to say)			
Never	0.028	-0.023	0.099
	(0.718)	(0.827)	(0.383)
Only sporadically	-0.173**	-0.280**	-0.069
	(0.024)	(0.014)	(0.474)
A couple of times a month	-0.270***	-0.249**	-0.282**
	(0.001)	(0.048)	(0.012)
A couple of times weekly or more often	-0.096	-0.203*	0.016
	(0.261)	(0.087)	(0.922)
Diet (Base category: Omnivorous)			
Flexitarian	-0.084*	-0.053	-0.126*
	(0.068)	(0.202)	(0.052)
Vegetarian	-0.048	-0.127**	0.010
	(0.375)	(0.049)	(0.924)
Vegan	-0.006	-0.091	0.037
	(0.944)	(0.474)	(0.792)
N	503	241	262

Estimated average marginal (age) or discrete (all other variables) probability effects of binary logistic regressions. The dependent variable takes the value 1 for no-voucher choice and 0 for all other choices. Observations stating 'Other' as diet are excluded to avoid estimation problems. Standard errors are clustered at the session level. P-values in parentheses. Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Full questionnaire

Thank you very much for your interest in this survey. It will approximately take 10-15 minutes. For your participation, you will have the chance of winning something.

Your participation in this study is completely voluntary. If you feel uncomfortable, you may withdraw from the survey at any point. Details on data protection and your rights can be found here. Please read them carefully and tick the box below if you agree. If you do not agree or don't wish to participate in the survey, you may close this window.

If you have questions at any time during the survey, you may contact the researcher in your breakout session via the Chat function. Thank you very much for your time and support.

□ I agree to the participation in this survey and the processing of my data in line with the procedures described in the document linked above. This includes personal data and special categories of data in case I provide them during the survey.

Q1: Please indicate the name of the course (lecture, seminar or tutorium) that you are currently attending:

Q2: Please indicate your year of birth:
[Drop-down list]

Q3: Please indicate your gender:
1. Female
2. Male
3. Diverse
4. Prefer not to say

Q4: Do you see yourself as a religious person?
1. Yes
2. No
3. Undecided
4. Prefer not to say

Q5 [If Q4 equals Yes or Undecided]: How would you describe your religious affiliation?
1. Christian (Protestant)
2. Christian (Catholic)
3. Muslim
4. Other: _____
5. Prefer not to say

Q6: Which of the following degrees do you hold? (Multiple answers possible)
1. Diploma
2. Master

3. Bachelor
4. Staatsexamen
5. Allgemeine Hochschulreife
6. Fachgebundene Hochschulreife
7. Fachhochschulreife
8. Anderer berufsqualifizierender Abschluss
9. Foreign School Degree
10. Other: _____

Q7: Which is your native language? (Multiple answers possible)
1. German
2. Other: _____
3. Prefer not to say

Q8: Please indicate your study program (e.g. B.Sc. Archeology):

Q9: Please indicate in which semester you are currently enrolled in this study program:

Q10: Please guess the share of people in the course [course name] you have talked to before:

Q11 [If Q10 is not equal to 0]: Are any of those in your breakout session?
1. Yes
2. No

Q12 [If Q10 is not equal to 0]: Are there any friends of yours present in the course [course name]?
1. Yes
2. No
3. Prefer not to say

Q13: [If Q12 equals Yes:] Are any of those in your breakout session?
1. Yes
2. No
3. Prefer not to say

Q14: Are you living in (...) during this semester?
1. Yes, most of the time
2. Yes, part of the time
3. No, not at all
4. Prefer not to say

Q15: Which of the following best describes your living situation? (Multiple answers possible)

1. Living on my own
2. Living with a partner
3. Living in a shared flat
4. Living with my family
5. Other: _____
6. Prefer not to say

Q16: How many people (including you) live in your primary household?

Q17: Which of the following social media platforms are you actively using?

1. Facebook
2. Instagram
3. Twitter
4. TikTok
5. None
6. Other: _____
7. Prefer not to say

Q18 [if Q17 is not equal to None]: How often do you post own content on social media?

1. Multiple times every day
2. Every day
3. A couple of times a week
4. A couple of times a month
5. Only sporadically
6. Never
7. Prefer not to say

Q19: Are you currently working?

1. Yes
2. No

Q20 [If Q19 equals Yes]: Please describe your employment status (multiple answers possible):

1. Full-time job
2. Part-time job
3. Hiwi job, working student or Mini Job
4. Self-employed
5. Occasional Jobs
6. Other _____

Q21: How much montly (net) income (including BAFÖG, sustenance, scholarships etc.) do you have at your disposal?

1. Less than 500€
2. 500-1000€
3. 1000-1500€

4. 1500-2500€
5. More than 2500€
6. Prefer not to say

Q22: As an appreciation for your participation, you have the chance of winning a voucher of your choice for two toasts from Simply Toast, a local restaurant that was founded in 2016. Simply Toast offers a variety of vegan, vegetarian and meat-containing toasts and is open for takeaway during the lockdown. The restaurant therefore takes the different tastes of its customers into account.

[Info Treatment only:] Reducing one's consumption of animal products can have significant environmental benefits. For example, food-related greenhouse gas emissions can on average be lowered by about a quarter (24%) through following a vegetarian diet and by about half (53%) through following a vegan diet.

After completion of the survey, we will randomly draw 10 percent of the participants who will then receive the voucher they have chosen. Vouchers are personalized and non-transferable.

[Public Treatment only:] The winners will be publicly announced directly in the breakout room and asked for their choice of voucher so that we can pass on the selection to the restaurant. Please indicate which type of voucher you would like to receive if you win:

[Private Treatment only:] The winners will be publicly announced directly in the breakout room. Their choice of voucher will **not be revealed** to other participants. Please indicate which type of voucher you would like to receive if you win:

1. Voucher for two vegan toasts
2. Voucher for two vegetarian toasts
3. Voucher for two toasts with meat
4. I don't want to participate in the drawing

Q23: Please indicate your name here so we can identify you for the drawing. Your name will be used for the drawing only and deleted from all data within the next day.

Q24: My diet is best described as...

1. Omnivorous (including meat and/or fish and dairy products like eggs and cheese)
2. Flexitarian (primarily vegetarian diet with occasional inclusion of meat and/or fish)
3. Vegetarian (including dairy products like eggs and cheese, but not meat and fish)
4. Vegan (not including any products of animal origin)
5. Other: _____

Q25: In the past four weeks, I have consumed meat and/or fish...

1. Daily
2. 4-6 times a week
3. 1-3 times a week
4. Only sporadically

5. Not at all

Q26: In the past four weeks, I have consumed dairy products (like eggs or cheese)...

1. Daily
2. 4-6 times a week
3. 1-3 times a week
4. Only sporadically
5. Not at all

Q27:Please indicate how important the following attributes are for your personal diet on a scale from 1 (not important at all) to 7 (extremely important):

	1	2	3	4	5	6	7
Health	❑	❑	❑	❑	❑	❑	❑
Taste	❑	❑	❑	❑	❑	❑	❑
Convenience/Effortlessness	❑	❑	❑	❑	❑	❑	❑
Animal welfare	❑	❑	❑	❑	❑	❑	❑
Environmental friendliness	❑	❑	❑	❑	❑	❑	❑
Social Approval	❑	❑	❑	❑	❑	❑	❑
Price	❑	❑	❑	❑	❑	❑	❑
Appeal (nice looks and texture)	❑	❑	❑	❑	❑	❑	❑
Habit	❑	❑	❑	❑	❑	❑	❑
Religious/spiritual beliefs	❑	❑	❑	❑	❑	❑	❑

Q28: Overall, how do you evaluate the following diets on a scale from 1 (extremely negative) to 7 (extremely positive)?

	1	2	3	4	5	6	7
Omnivorous diet	❑	❑	❑	❑	❑	❑	❑
Flexitarian diet	❑	❑	❑	❑	❑	❑	❑
Vegetarian diet	❑	❑	❑	❑	❑	❑	❑
Vegan diet	❑	❑	❑	❑	❑	❑	❑

Q29: Please indicate how much you agree to the following statements on a scale from 1 (disagree strongly) to 7 (strongly agree):

	1	2	3	4	5	6	7
I feel very connected to nature.	❑	❑	❑	❑	❑	❑	❑
Climate change is a serious problem.	❑	❑	❑	❑	❑	❑	❑
Eating meat is natural to humans.	❑	❑	❑	❑	❑	❑	❑
Pandemics and diseases resulting from animal husbandry and trade	❑	❑	❑	❑	❑	❑	❑

have negatively impacted my attitude towards meat and dairy consumption.							
I usually find vegetarians and vegans rather annoying.	❑	❑	❑	❑	❑	❑	❑
I personally can do something about climate change and other environmental problems.	❑	❑	❑	❑	❑	❑	❑

Q30: How important is eco-friendliness when you make decisions in your everyday life, such as the choice of food, transport, clothes, vacations, or donations, on a scale from 1 (not important at all) to 7 (extremely important)?

	1	2	3	4	5	6	7
Importance of eco-friendliness for everyday life decisions	❑	❑	❑	❑	❑	❑	❑

Q31: Please guess which share of people in the course [course name] follow...

- an omnivorous diet: _____
- a flexitarian diet: _____
- a vegetarian diet: _____
- a vegan diet: _____

Q32: Please guess which share of your friends follow...

- an omnivorous diet: _____
- a flexitarian diet: _____
- a vegetarian diet: _____
- a vegan diet: _____

Q33: How often do you discuss food-related topics with your friends?

1. Often
2. Sometimes
3. Rarely
4. Never
5. Prefer not to say

Q34: When you eat out or at Mensa with friends, how often does at least one of them eat a vegetarian or vegan meal?

1. Always
2. Often
3. Sometimes
4. Rarely
5. Never
6. Prefer not to say

Q35: When you eat out or at Mensa, how often do you adjust your choice of food depending on the people who are with you?

1. Always
2. Often
3. Sometimes
4. Rarely
5. Never
6. Prefer not to say

Q36: When you are having dinner at home with friends, how often is the meal prepared by you or your friends vegetarian or vegan?

1. Always
2. Often
3. Sometimes
4. Rarely
5. Never
6. Prefer not to say

Q37: When you eat together with other people, how often do you try to influence what they eat?

1. Always
2. Often
3. Sometimes
4. Rarely
5. Never
6. Prefer not to say

Q38: How often do you prepare your own food?

1. Always
2. Often
3. Sometimes
4. Rarely
5. Never

Q39: How much do you like the taste of the following products on a scale from 1 (not at all) to 7 (extremely)?

	1	2	3	4	5	6	7
Meat	❑	❑	❑	❑	❑	❑	❑
Fish	❑	❑	❑	❑	❑	❑	❑
Milk products	❑	❑	❑	❑	❑	❑	❑
Eggs	❑	❑	❑	❑	❑	❑	❑

Q40: Which diet do you intend to follow in the future?

1. Omnivorous
2. Flexitarian
3. Vegetarian
4. Vegan
5. Other: _____

Q41: Please answer the following questions:

	1	2	3	4	5	6	7	Prefer not to say
How important is it for you how your fellow students in the course [course name] view you?	❑	❑	❑	❑	❑	❑	❑	❑
How important is it for you how your friends view you?	❑	❑	❑	❑	❑	❑	❑	❑
How strongly do you feel admired among your fellow students in the course [course name]?	❑	❑	❑	❑	❑	❑	❑	❑
How strongly do you feel admired among your friends?	❑	❑	❑	❑	❑	❑	❑	❑

Q42:
[No Info only:] The consumption of animal products has an influence on the environment. Please guess how much a person's food-related greenhouse gas emissions can on average be reduced by following a vegetarian or vegan diet (in %):

[Info only:] Earlier, you received an information about the benefits of reducing one's consumption of animal products for the environment. Do you recall how much a person's food-related greenhouse gas emissions can on average be reduced by following a vegetarian and a vegan diet (in %)? (You may provide an approximation if you do not remember the precise number).

Vegetarian:

Vegan:

Q43: Do you have any remarks concerning this study?

Thank you very much for completing this survey. You may now close this window.