

## **Enabling tipping dynamics in food system transformation: How information and experience with novel meat substitutes can create positive political feedbacks**

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### **Abstract**

The food system causes more than a third of the global anthropogenic greenhouse gas emissions, of which half are from livestock. Shifting towards plant-based diets could significantly reduce deforestation, protect biodiversity, and contribute to achieving the Paris climate targets. Yet, deep-rooted eating habits, pleasure, cultural status symbols, and personal freedom are just a few of many bottlenecks to reduce meat consumption. Here, we argue that technological innovation in meat substitutes, if successfully combined with effective informational triggers for behavioral changes, can foster positive political feedbacks to transform the food system. We are particularly interested in assessing the effects of such triggers on accelerating people's reduction of meat consumption and increasing public support for respective food policies. Using advanced machine learning and survey experiments with citizens (N= 2590) in China and the US, the globally largest meat markets, we find that personal experience with new plant-based meat substitutes strongly predicts individuals' intentions to reduce their meat consumption, eat more substitutes, and support public policies that catalyze a transition to more plant-based diets. We also find that in both countries information about the benefits of plant-based diets can increase citizens' behavioral change intentions and policy support. In China, emphasizing social norms in favor of plant-based diets has particularly strong effects on policy support. In the US, prior experience with innovative meat substitutes potentially can boost the positive effects of informational campaigns on public support for meat reduction policies. Overall, the results offer promising implications for a policy sequencing strategy to create positive political feedbacks and enable socio-technical tipping dynamics for food system transformation by fostering innovation in and experience with meat substitutes and highlighting the co-benefits of plant-based diets.

## Main

There are few areas of consumption that do as much damage to the environment as what humans eat. The food system is responsible for a third of global anthropogenic greenhouse gas emissions<sup>1-3</sup>, and is also the largest emitter of methane – a powerful short-lived greenhouse gas mainly due to red meat products<sup>1,4-6</sup>. Without transforming the food system, the goal of limiting the global temperature rise to 2°C would be hardly achievable even if all other sectors were to rapidly drive emissions to zero<sup>7</sup>. In particular, the shift to plant-based diets offers a cost-effective and environmentally integer solution to mitigate agricultural emissions, substantially reducing global deforestation and saving a few hundred gigatonnes of CO<sub>2</sub> from the atmosphere by 2050<sup>8</sup>. Moreover, the production and consumption of meat is also linked to human health, contributing to the outbreak of pandemics like Covid-19<sup>9</sup> and to increased risk of mortality due to cardiovascular diseases, cancer, and diabetes. Thus, changing meat consumption habits is key for transforming the food system and achieving the UN Sustainable Development Goals (SDGs). However, there is little to suggest that it will be easy to reduce global meat consumption. Even though consumption in some industrial countries is stagnating at a high level or falling slightly, demand in many other countries, including developing and emerging countries, remains high or even grows sharply<sup>1</sup>. To name a few, deep-rooted eating habits, pleasure, cultural status symbols and personal freedom are some of the most hindering bottlenecks that reduce the feasibility of reducing meat consumption<sup>2</sup>. Given these existing barriers for change and the simultaneous urgency of the sustainability problem, this prompts the question of how to accelerate reductions of meat consumption.

One potential way for speeding-up the transition of deep-rooted consumption patterns is triggering positive socio-technical tipping point dynamics<sup>3-7</sup>. Socio-technical tipping points (STPs) can be defined as points in a system “at which a small quantitative change inevitably triggers a non-linear change [...], driven by self-reinforcing positive-feedback mechanisms, that inevitably and often irreversibly lead to a qualitatively different state of the social system”<sup>8</sup>. While discussions on STP dynamics are an intriguing theoretical debate, we still lack empirical evidence if and how such dynamics unfold in practice, especially in the food sector<sup>3-7,9</sup>. Literature on inducing positive tipping and feedback dynamics in sustainability transitions almost exclusively focuses on the energy sector<sup>10-15</sup>, leaving an important gap in the empirical research on the specific enabling factors for triggering these dynamics in respect to food and meat system transformation. In contrast to homogenous goods like electricity, meat consumption is embedded into a social and cultural context. Thus, arguably, in the food sector a more holistic ‘system thinking approach’ is needed to account for interactions and feedbacks between technological, behavioral, social norm, and policy changes<sup>16</sup>. While technological innovation, for instance in meat substitutes, can be an important enabling factor for food system transformation<sup>17,18</sup>, the transition of deep-rooted consumption patterns relies on social norm and behavioral changes<sup>2,18-23</sup>. Moreover, interactions between technological, behavioral, and social norm changes might feed back into public opinion about food policies<sup>16,24</sup>. This in turn, could reduce public backlash and increase the political feasibility of adopting meat reduction measures with visible cost implications in citizens’ everyday lives<sup>16,24</sup>. Thus, to understand the specific mechanisms for enabling tipping dynamics and accelerating meat consumption reduction, it is essential to empirically investigate the feedback effects of growing information and experience with technological innovations in meat substitutes on public opinion about a shift towards plant-based diets. Ideally, this empirical assessment also takes a comparative perspective and accounts for the potential context-dependencies of such feedback effects.

In this study, we thus address this important research gap by focusing on how such feedback effects related to novel meat substitutes can potentially create the enabling conditions for positive tipping dynamics in food system transformation. More specifically, we take a comparative research approach and empirically assess how (factual and social norm) information about and experience with novel plant-based meat substitutes<sup>1</sup> affect individuals’ intentions to reduce their own meat consumption, eat more substitutes, and support respective public policies in two distinct countries. In doing so, we use advanced machine learning techniques and conducted two large-N survey experiments with citizens (N= 2590) in China and the US, the globally largest meat markets.

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<sup>1</sup> Plant-based meat substitutes are foods that try to replicate the texture, flavor, and/or nutritional value of meat, often sold as vegetarian burgers, minced meat, sausages, or chicken nuggets. Plant-based meat substitutes are usually made of ingredients such as peas, wheat, vegetable oils, mushrooms and other plants.

China and the US are not only the globally largest producers and consumers of meat (in absolute terms)<sup>25</sup>, but also differ substantially in their socio-political, economic, and cultural context. Amongst others, research has shown that Asian countries, including China, have rather collectivist cultures valuing group integration over self-realization, as opposed to the rather individualistic cultures in Western countries, including the US<sup>26</sup>. Moreover, food consumption traditions<sup>27</sup> as well as the market developments of innovative plant-based meat substitutes<sup>28</sup> differ in these two countries. In China plant-based meat alternatives, such as tofu or soy protein, have a long tradition<sup>29</sup>, whereas in the US meat rather tends to be replaced, for example, with vegetables, cheese, dairy, and eggs<sup>30</sup>. Yet, within the last years there has been an increase in demand for novel meat substitute products, which lead substitute producers to develop new products using novel ingredients and technologies to make the products increasingly like meat in terms of flavor, texture, and appearance in both countries<sup>29,31</sup>. Comparing China to the US is also interesting because China has experienced a sharper increase in meat production and consumption in recent decades<sup>25,32</sup>. While China's per capita meat consumption is still below that of an average US citizen, the rise in meat consumption is largely driven by the urban middle-class in China who consumes meat at rates comparable to those of European and US citizens<sup>32,33</sup>.

### ***Creating positive political feedbacks from information and experience with novel meat substitutes***

In recent years, technologically innovative plant-based meat substitutes have experienced an exponential market growth<sup>28</sup>. Today, due to technological learning and economies of scale, these new substitutes are becoming more readily available and affordable for a larger number of consumers around the globe. Here, we expect that a growing information about and consumer experience with such innovative meat substitutes can increase citizens' intentions to reduce own meat consumption, eat more meat substitutes, and support respective policies. This expectation builds on dual-process models of human decision-making<sup>34,35</sup>. These models suggest that humans use two different processes when making decisions. First, the affective (experiential) system that makes rather unconscious and fast conclusions with low cognitive effort based on learned behavior and experience. Second, the deliberative (analytical) system that makes conscious and reflected decisions with high cognitive effort based on logic, knowledge, and the information received<sup>36</sup>. The two systems often work in parallel, complementing one another, yet, they can also be in conflict<sup>37</sup>.

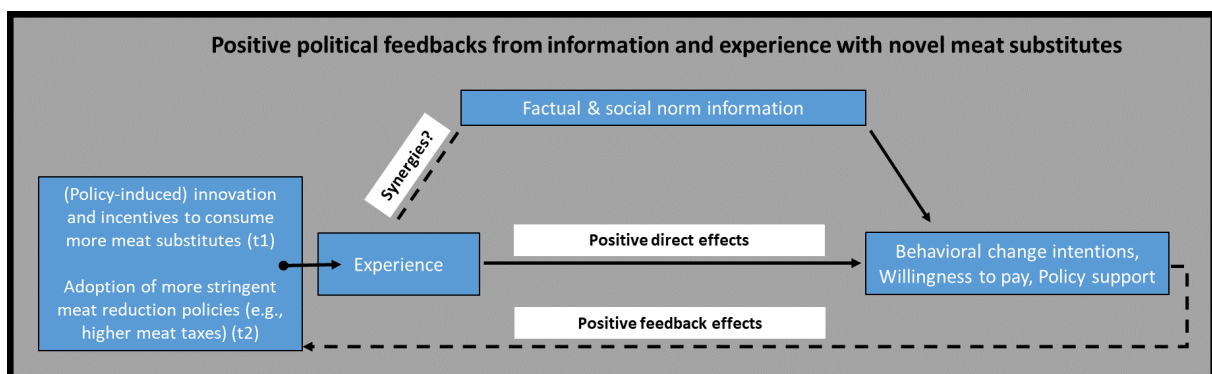
Arguably, food-related decisions often tend to be rather subconscious<sup>27</sup> and, especially for people with low involvement, such decisions are often habitual and normative<sup>18</sup>. Simple decision heuristics that are based on individuals' past experience with substitute products<sup>18</sup> are therefore likely to be an important predictor of individuals' intentions to consume more meat substitutes and less meat. Moreover, positive experiences with meat substitutes might also alter the individuals' subjective cost-benefit ratio when it comes to supporting policies aiming at meat reduction<sup>38-40</sup>. If individuals' perceive substitutes to be of high quality and see no strong utility decrease when consuming these meat alternatives, then there might be a higher probability they will also support meat reduction measures and policies to incentivize meat substitute consumption<sup>16,24</sup>.

While meat substitute experience is likely to be a key factor in driving public opinion, prior research also highlights the role of factual information (analytical system) in increasing people's knowledge and awareness about the health and sustainability aspects of their diets, especially in closing the knowledge gap about meat consumption and climate change<sup>2,27,41-47</sup>. This line of research is also aligned with discussions around Bayesian updating concerning climate change<sup>48</sup>. For instance, Van Loo, Hoefkens and Verbeke<sup>46</sup> mention that the inability of people to directly observe health and sustainability attributes of food products justifies using informational campaigns as instruments to increase awareness and knowledge in earlier stages of the transition towards more plant-based diets. Apostolidis and McLeay<sup>47</sup> further suggest that information campaigns can be effective in encouraging people to substitute meat, especially for health- and environmentally conscious consumers. Yet, in large comparative survey experiments in China, Germany, and the US, Fesenfeld et al.<sup>43</sup> only find limited effects of simple information treatments on individuals' intentions to reduce their meat consumption and support public policies to reduce meat consumption. However, we still lack evidence if positively framed information related to the benefits of meat substitutes could increase individuals' intentions to move towards more plant-based diets and support respective policies.

In addition to factual information, also social norm messages likely play an important role in changing consumer habits and policy attitudes<sup>9,20,49-51</sup>, yet we still lack knowledge about such effects in the food sector, particularly in respect to meat and meat substitutes. Previous literature underlines the importance

of the social environment and individuals' perceived social norms in shaping food-related decisions<sup>19,20,52</sup>. According to the theory of planned behavior<sup>53</sup>, the more a person believes that other people (social referent) approve or not approve of a certain behavior, the stronger this person will adhere to these subjective social norms. For instance, research in environmental psychology has found that social norm appeals can be more effective in motivating environmentally friendly behavior than economic cost-benefit appeals that operate mainly through individuals' self-interest<sup>54-56</sup>. Depending on the context, peer-group-led, celebrity-led, or government-led social norm interventions can be particularly effective in promoting environmental behavior change<sup>56</sup>. Social norms can also enable policy change by creating the necessary public support for interventions<sup>20,49-51</sup>. Overall, we thus expect that social norm appeals, which combine factual and normative statements about the benefits of plant-based diets and meat substitutes, are likely to cause changes in public opinion and increase policy support. We expect social norm messages to have larger effects than factual information – especially in a society in which social norms play a particularly important role<sup>57</sup>. In our empirical analysis, the case of China offers an opportunity to test the possibility of such a hypothesis.

Finally, building on dual-process models of human decision-making<sup>34,35</sup>, we explore the possibility that informational and social norm campaigns, respectively, could interact with individuals' experiences with innovative meat substitutes in a way that generates positive synergies and increase support for policies to transform the meat system. We expect that the interplay of humans' analytical and associative systems is essential for changing individuals' behaviors and policy support in the food domain because people can relate their personal experiences (affective system) to the information (analytical system) about the benefits of plant-based diets and meat substitutes. Thus, by paying attention to the interaction of personal experience with the informational and social norm campaign, respectively, our analyses offer answers to a novel and important question: Can information and experiences with novel meat substitutions jointly create feedbacks and thus enable tipping dynamics for reducing meat consumption?



**Figure 1 – Creating positive political feedbacks from information and experience with novel meat substitutes:** The figure outlines the proposed argument of enabling socio-technical tipping dynamics to reduce meat consumption by creating positive political feedbacks. We expect that first (t1) (policy-induced) innovation in the production of plant-based meat consumption and larger incentives to consume such products (e.g., lower prices, better taste) lead to a growing consumer experience of such products. We expect that this user experience then has positive direct effects on consumers' intentions to reduce their personal meat consumption and eat more meat substitutes in future. We also expect positive direct effects on consumers' willingness to pay for meat substitutes, as well as on their support for policies to reduce meat consumption. Factual information and social norm messages about the benefits of plant-based diets might positively interact with growing user experience and also have positive direct effects on behavioral change intentions, willingness to pay, and policy support. Changing behavior, willingness to pay, and policy support then feed back into the subsequent policymaking process (t2) and enable the adoption of more stringent meat reduction policies (e.g., higher meat taxes).

**Observational results: Meat substitute experience key factor for meat consumption reduction**

First, in Table 1, we show the reported experience with plant-based meat substitutes. Among the Chinese respondents, 37 percent can be classified as heavy users eating substitutes several times a month or more, 44 percent can be classified as light users eating substitutes rarely or about once a month, while about 19 percent of respondents are non-users that never ate substitute products before. In contrast, among the US respondents, 19 percent can be classified as heavy users, 32 percent can be classified as light users, and 49 percent never consumed any substitute products. Overall, Chinese respondents are more likely than US respondents to already have made experiences with plant-based meat substitutes.

**Table 1 – Reported experience with plant-based meat substitutes:**

*Chinese and US respondents self-reported their personal experience with plant-based meat substitutes using the following survey question: “Within the last year, how frequently have you eaten plant-based meat substitute products?”*

*Please note: Plant-based meat substitutes are foods that try to replicate the texture, flavor, and/or nutritional value of meat, often sold as vegetarian burgers, minced meat, sausages, or chicken nuggets. Plant-based meat substitutes are usually made of ingredients such as peas, wheat, vegetable oils, mushrooms and other plants.”*

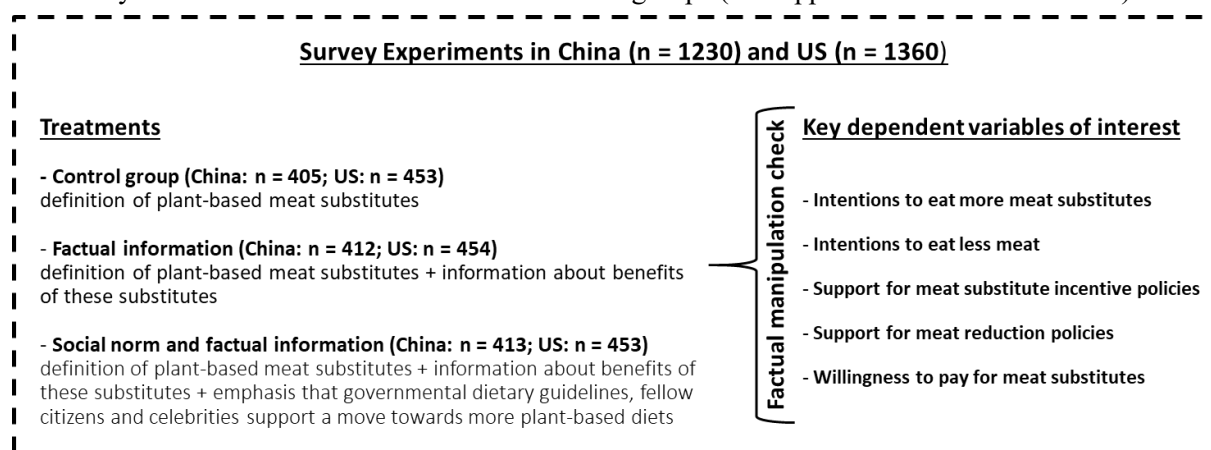
	Non-users	Light users			Heavy users		
User frequency	Never	Rarely	About once per month	Several times per month	About once per week	Several times per week	Every day
<b>China (N = 1230)</b>	19% (237)	18% (219)	8% (94)	18% (226)	14% (171)	19% (231)	4% (52)
<b>US (1360)</b>	49% (668)	20% (273)	7% (98)	5% (75)	7% (86)	9% (115)	3% (45)

Second, we reviewed the existing literature and carefully selected the most important predictors of intentions to eat more of these substitutes, to reduce their meat consumption, to pay more for meat substitutes, and to support policies that incentivize meat substitute consumption, and policies that reduce meat consumption identified by existing studies. For example, we included individuals’ sustainability-related shopping criteria<sup>2,43</sup>, food neophobia<sup>18,59</sup>, their perceived meat substitute product availability of and ability to cook such products<sup>47,60</sup>, household characteristics and behaviors of family, friends, co-workers measuring perceived social norms<sup>47,60</sup>, as well as general socio-demographic and ideological variables<sup>2,43</sup> (please see Method section for further details). We z-transformed all included variables to make the relative effect sizes comparable. We then used machine-learning-based Bayesian sparse-regression LASSOplus models<sup>58</sup> and random forests to explore the relative importance of individuals’ experience with plant-based meat substitutes in predicting the various outcome variables of interest compared to these other theory-based and carefully selected predictors (see Method section). The LASSOplus algorithm selects those variables<sup>58</sup> that are robust and relevant predictors of the outcomes among a large set of potentially predictive variables and their possible interactions. The permutation feature importance of a random forest assigns a score to every variable that indicates its relevance for building an accurate model. Using both these complementary variable selection approaches thus increases the robustness of our results (also see Method section).

Both, the sparse regression and random forest analysis, suggest that in both China and the US individuals’ experience with plant-based meat substitutes is selected as one of the four most important predictors of individuals’ intentions to eat more substitutes and reduce their personal meat consumption (see Appendix C and F). In the US, it is even by far the most important predictor of individuals’ intentions to change their personal behavior (see Appendix C and F). In both countries, personal experience with plant-based meat substitutes is also one of the four most important predictors of individuals’ willingness to pay more for such substitutes. Again, in the US, it is even by far the most important predictor of willingness to pay (see Appendix C and F) compared to other potential predictors such as individuals’ sustainability shopping criteria. Finally, our sparse regression and random forest analysis also indicate that in the US, experience with plant-based meat substitutes belongs to the two most important predictors of respondents’ support for policies to reduce meat consumption and incentivize more plant-based meat substitute consumption (see Appendix C and F). Only general ideological beliefs on state intervention still outperform meat substitute experience when predicting policy support. In China, however, consumers’ sustainability shopping criteria rather than their personal experiences with meat substitutes are selected as the key predictors of support of policies targeted at reducing meat consumption and incentivizing meat substitute consumption (see Appendix C and F). This indicates an interesting divergence between the two country contexts.

### ***Experimental results: Social norm messages and information about the benefits of meat substitutes can shift behavioral intentions and policy support to reduce meat consumption***

Next, we turn to presenting the results of our survey-embedded experiments. Figure 2 outlines the treatment design. In both China and the US, we implemented the same framing experimental design including a control group, a factual information treatment group, and a factual information treatment that also included a social norm message. The results of our factual manipulation check<sup>61</sup> clearly indicate that most respondents in both countries understood the respective treatments well. Also, our balance checks indicate that random assignment to treatments worked as expected. Moreover, people perceive the received information as credible, which is an important prerequisite for engaging in a conscious information updating process<sup>48</sup>. Importantly, we do not find any significant differences in these credibility evaluations across the different treatment groups (see Appendix B table B2a & B2b).

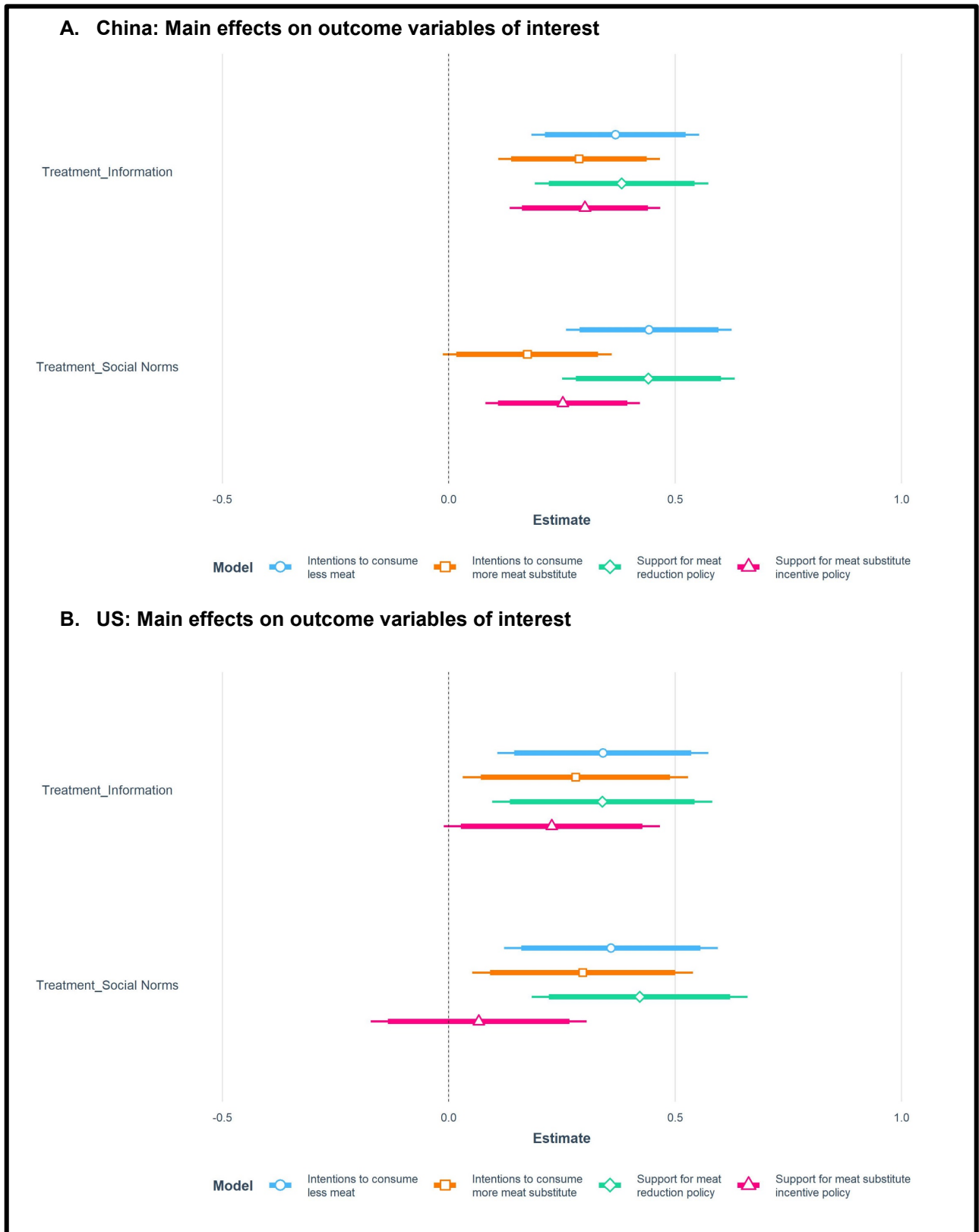


**Figure 2 - Survey experimental design:** In both China and the US, we implemented the same survey experiment including a control group, a factual information treatment group, and a social norm & factual information treatment group. In the control group, individuals were only presented with a definition of plant-based meat substitutes and a graphical illustration of such products (see Methods for details). In the two treatment groups, respondents received not only the definition but also factual information about the negative impacts of meat and positive impacts of meat substitutes on human health, animal welfare, and the environment. In the social norm treatment, respondents additionally received a statement about national governmental dietary guidelines, fellow citizens, and celebrities supporting a reduction of meat and increase of meat substitute consumption (see Methods for details). After a factual manipulation and information credibility check, respondents then answered a series of outcome variables, namely their intentions to start eating more meat substitutes and reducing their meat consumption within the next two weeks as well as their support for governmental policies to incentivize meat substitute and reduce meat consumption. We also measured the effects on individuals' willingness to pay for meat substitutes.

Figure 3 presents the main treatment effects of our experiments in China (Figure 3a) and the US (Figure 3b). In both countries, we find that the treatments significantly affected most of the dependent variables compared to the control group. In China and the US, the factual information treatment significantly increased individuals' intentions to change their personal consumption towards more plant-based diets and their support for respective policies (effects range from 0.23 to 0.38 on a 7-point Likert scale). Only in the US, the effect of the information treatment on the support for policies to incentivize meat substitute consumption is not significant at the 5 percent but only the 10 percent significance level ( $p = 0.06$ ), all other treatment effects are significant at the 5 percent level ( $p < 0.01$ ). In general, for both country samples we find slightly larger information treatment effects for the outcome variables focusing on meat reduction rather than meat substitute consumption. Nevertheless, these differences are not significant.

Concerning the social norm treatment, we find some cross-country variation. In China, all treatments are significant (effects range from 0.17 to 0.44 on a 7-point Likert scale,  $p < 0.01$ , except for intentions to eat more meat substitutes  $p = 0.06$ ). Yet, in the US, the social norm frame clearly does not have any significant effects on citizens' support for policies to incentivize meat substitute consumption while it has on all other outcome variables (effects range from 0.30 to 0.42 on a 7-point Likert scale,  $p < 0.01$ ).

In China, we also find clear evidence that the social norm frame has larger effects on intentions to reduce meat consumption (0.44,  $p < 0.01$ ) and support meat reduction policies (0.44,  $p < 0.01$ ) than on intentions to eat more meat substitutes (0.25,  $p < 0.01$ ) and support respective policies (0.25,  $p < 0.05$ ).



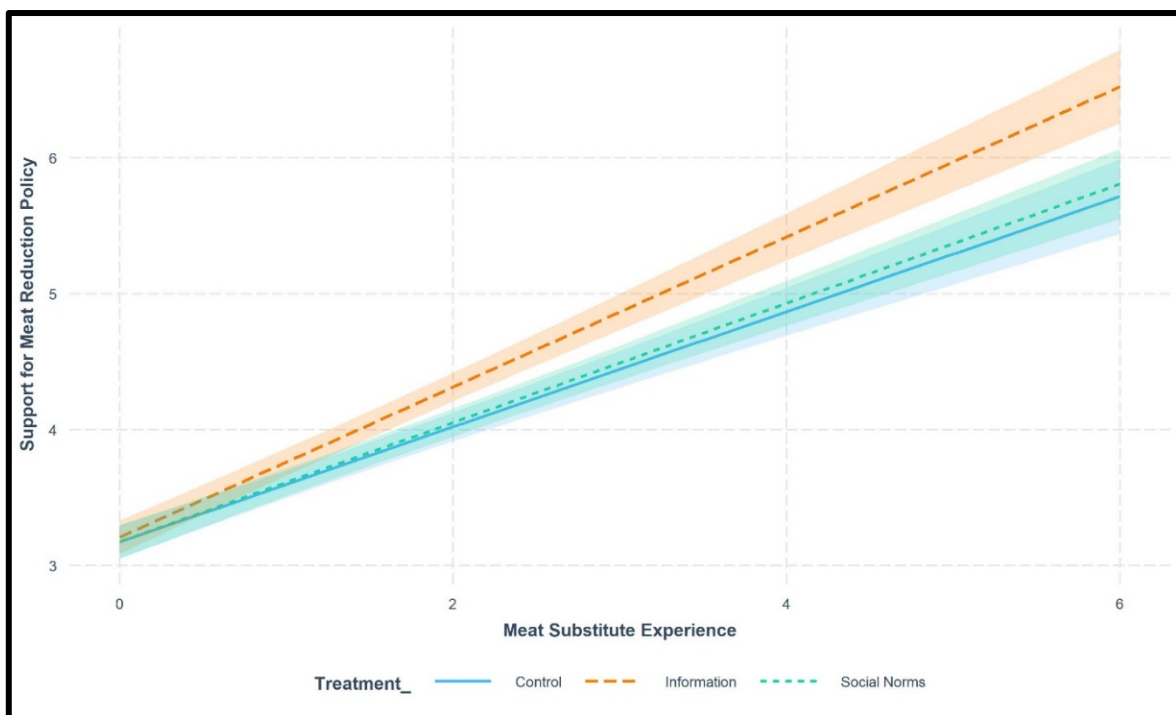
**Figure 3 – Main effects:** The figure outlines the main effects of the factual information and social norm treatment group compared to the control group (dashed baseline). Figure 3a present the effects for the Chinese sample, while Figure 3b for the US sample. In the four different colors, we present the effects on the different outcome variables, namely the intentions to consume less meat (blue), intentions to consume more meat substitutes (orange), support for policies to reduce meat consumption (green), and support for policies to incentivize meat substitute consumption (red). We measured all outcome variables on a 7-point Likert scale with higher values indicating higher intentions to change personal consumption and higher policy support. The error bars represent the 90 percent (thicker lines) and 95 percent (thinner lines) confidence intervals based on OLS regressions with robust standard errors.

In the US, we observe a tendency for the social norm treatment to affect slightly more outcomes concerning meat consumption reduction (effects range from 0.36 to 0.42 on a 7-point Likert scale,  $p < 0.01$ ) than those concerning intentions to consume more meat substitute (0.29,  $p < 0.05$ ) and support policies to incentivize meat substitute consumption (0.06,  $p = 0.59$ ).

An additional LASSOplus sparse regression also confirms that particularly the social norm treatment is a relevant and strong predictor of respondents' support for meat reduction policies, both in China and the US (see Appendix C table C3 & C12).

Next, we investigate potential treatment effects on respondents' willingness to pay more for meat substitutes. Here, again we find that in China the social norm treatment effect is particularly strong. Respondents' receiving this treatment increased their average willingness to pay for meat substitutes by around 5 percentage points ( $p < 0.05$ ) compared to respondents in the factual information or control group. In the US, however, we do not find any significant treatment effects on respondents' willingness to pay for meat substitutes.

Finally, given our argument about the importance of individuals' prior experience with new plant-based meat substitutes we analyzed if an increase in respondents' personal experience with such products positively interacts with any of the treatments. Figure 4 shows that in the US there is indeed a significant interaction between individuals' degree of meat substitute experience and the factual information treatment (but not the social norm treatment) on the support of meat reduction policies. In essence, we find that increasing meat substitute experience by one unit increases the positive effect of receiving the information treatment on individuals' support for meat reduction policy by about 0.13 points ( $p < 0.05$ ). We find a similar positive interaction effect between the information treatment and meat substitute experience for US respondents' support of meat substitute incentive policies (see Appendix E table E2a) but not for any of the outcomes on intentions to shift personal behaviors. In contrast, in China we do not find any significant interaction effects. However, these results should be interpreted with some caution because when running robustness check analyses with additional control variables, as well as using more advanced LASSOplus regressions, we cannot support the significant interaction effects in the US case. These effects might thus be caused by an omitted interaction bias<sup>62-64</sup>.



**Figure 4 - Interaction effects:** The figure outlines the predicted effects of the control, factual information, and social norm treatment group on respondents support for meat reduction policies for different levels of plant-based meat substitute experience. Meat substitute experience was measured on a 6-point Likert scale (see Table 1 above) while the support for meat reduction policies was measured on a 7-point Likert scale with higher values indicating higher policy support. The shaded error bars represent the 95 percent confidence intervals based on OLS regressions with robust standard errors.



### ***Implications for policymaking and future research***

Our study sheds light on how technological innovation and behavioral change interact and feed back into the politics of food system transformation. Building on the burgeoning policy feedback and social tipping point literature in climate governance and politics<sup>3-7,10,13,16,65,66</sup>, we empirically investigate the mechanisms through which technological innovation in meat replacement products and increased consumer experience with such innovative meat substitutes feeds back into public opinion on meat consumption and substitutes and respective policy interventions to reduce meat consumption and production. In essence, we find evidence for a positive political feedback effects from information about and experience with novel meat substitutes that might enable tipping dynamic for reducing meat consumption. We conducted surveys with 2590 respondents in China and the US, the globally largest meat markets. Using machine-learning-based Bayesian sparse regression and nonparametric ensemble learning methods, we find that growing personal experience with new plant-based meat substitutes strongly predicts individuals' intentions to reduce their meat consumption, eat more substitutes, and support respective public policies. Using survey-embedded experiments we also find that in both countries information about the benefits of plant-based diets can increase citizens' behavioral change intentions and policy support. In China, emphasizing social norms in favor of plant-based diets has particularly strong effects on respondents' policy support compared to the US context. This cross-country difference could potentially be a result of cultural and socio-political differences in the importance of social norms in general and/or the acceptance of governmental-led norm interventions into the personal life of citizens<sup>57</sup>. In the US, prior experience with innovative meat substitutes can boost the positive effects of informational and social norm campaigns on public support for meat reduction policies but these interaction effects are explorative and require further research to check for their robustness and external validity.

Overall, the results suggest that policymakers can harness such political feedback effects to create positive socio-technical tipping dynamics in food system transformation by fostering innovation in and widespread experience with meat substitutes while highlighting the co-benefits of more plant-based diets. Following lessons from the burgeoning climate policy sequencing literature<sup>10,13,16,65,66</sup>, we suggest that policymakers could use innovation-oriented subsidies to induce technological learning and reduce the economic costs of innovative meat substitutes. This can pave the way for subsequent, more ambitious demand-side policies (e.g., public procurement standards and nudging interventions to increase the use of meat substitutes in public canteens, VAT reductions for climate-friendly food products, and sustainability food labels) that can increase consumer experience with meat substitutes. Such increased consumer experience, as shown by our findings in the US case, can then lead to higher public support for the introduction of more stringent policies to reduce meat consumption (e.g., higher meat taxes) (see Appendix C table C8) and thus reduce the risks of public backlash against food system transformation.

There are several avenues for further research. First, future studies could investigate in more-depth how such political feedback effects unfold across different political and cultural contexts. For example, while the market of innovative plant-based meat substitutes, such as vegetarian burgers and minced meat, is growing faster in the US than in China<sup>28</sup>, we find that Chinese respondents report more frequently to have had experience with consuming meat substitute products. This is likely to result from cultural differences in cuisine and consumption habits of plant-based food products.

Second, in our survey experimental research design we could not randomly vary the degree of experience with meat substitutes. Future field experimental studies could use different nudging interventions to randomly induce varying levels of meat substitute experience and measure how this difference in meat substitute exposure affects meat consumption and policy attitudes. Using field experimental designs, for example in larger supermarkets and public cafeterias, would also allow increasing the ecological validity of the study and measure revealed behavior changes over time. Investigating how political feedbacks from information and experience of novel meat substitutes unfold over time requires a panel research design that measures direct treatment and respective feedback effects for the same respondents over a longer period. Such longitudinal research designs are also necessary to empirically assess if these feedbacks truly enable tipping dynamics and thus an acceleration of socio-technical system change.

Third, here we only studied the effects of increasing meat substitute experience on public opinion about meat consumption reduction and respective policies but do not investigate how policy narratives and actor network coalitions change over time as result of technological innovation in meat substitutes. Arguably, public opinion change is a necessary but not sufficient condition for enabling a fundamental

change in meat consumption levels given the importance of interest groups in the food system<sup>2,24,67,68</sup>. Future research could use other methods including process-tracing, advanced natural language processing, and discourse network analytical methods to explore potential feedback effects of food technology innovations on shifts in policy debates and interest group coalitions.

Overall, we hope that our study triggers a fruitful discussion about the political feedback effects of information and experience with novel meat substitutes. Ideally, our study thus offers an example for how to empirically investigate the enabling conditions and mechanisms for socio-technical tipping dynamics in the food system. The results show that policymakers can embrace and strategically foster experience with and information about meat substitutes to reduce political, economic, and behavioral barriers to transform the food system in line with the SDGs.

## **Methods**

### ***Survey sample***

We test our arguments by a survey-embedded experiment with a representative sample of 2590 respondents in China and the US fielded in December 2020 and January 2021. After pretesting the survey with a student panel (N = 80), an internet panel from a commercial provider of sampling services (Kantar Group, Munich, Germany) was used to recruit the study participants. The respondents were told that they are participating in a study about food choices and product preferences, and they received a small financial reward for their participation. Quota sampling was used based on interlocked quotas on gender, education, and age in the US<sup>69</sup> and on gender and age in China<sup>70</sup>. During data collection, participants that were younger than 18 years old and/or that were not allowed to vote in the last US election in November 2020 were screened out from the survey right in the beginning, as their answers would be less relevant for the policy-related questions. To ensure high response quality we set a speeder limit (< 40% of median response time) and excluded respondents falling below this threshold. As an additional quality check, after the survey completion, the sum of the duration in seconds of all matrix questions in the survey was calculated for all participants and everyone who took less than half of the median time to answer the matrix questions was excluded, as this is an indicator for straightlining survey response behavior. We used forced-choice questions to prevent missing values.

The final sample consisted of N = 1360 participants in the US and N = 1230 participants in China. The sample distribution closely follows the national population statistics for the 18+ voting age population of US citizens (see Appendix A table A1), while in China the urban, higher-income, and younger generation is somewhat overrepresented in our sample (see Appendix A table A2). Yet, due to differently paced economic developments within China, the Chinese sample in this study represents the most relevant subgroup in the country considering meat consumption and sustainability, i.e., the urban middle-class, since their food consumption patterns have the greatest impact on the countries' environment<sup>32,33</sup>. Moreover, the samples from both the US and China are representative of the politically and economically relevant population, since the respondents in the US sample represent the voting age population and the respondents in the Chinese sample represent the urban middle-class that is on average younger, has a higher education, and a higher income.

### ***Survey Procedure/Measures***

We used Qualtrics, an online survey software, to design the survey experiment and to collect the data. The median survey completion time in US sample was about 18 minutes as compared to about 31 minutes in the Chinese sample. The longer median completion time of the Chinese survey was due to some issues with the survey being hosted on Qualtrics, which resulted in longer page loading times of the graphics for the Chinese respondents. This had no substantial effects on survey response quality.

At the start of the survey, after the screening and the first part of the demographical questions, we asked different questions related to our key explanatory variable of interest, namely individuals' previous experience with plant-based meat substitutes, and various control variables. To measure individuals' personal experience with plant-based meat substitutes we used the following item<sup>71</sup>:

*Within the last year*, how frequently have you eaten **plant-based meat substitute products** (see definition below)?

Plant-based meat substitutes are foods that try to replicate the texture, flavor, and/or nutritional value of meat, often sold as vegetarian burgers, minced meat, sausages, or chicken nuggets. Plant-based meat substitutes are usually made of ingredients such as peas, wheat, vegetable oils, mushrooms and other plants.

- Every day
- Several times a week
- About once a week
- Several times a month
- About once a month
- Rarely
- Never

In addition, we selected the following control variables since they have been identified in the existing literature as the most relevant predictors of meat consumption and the willingness to switch to more plant-based diets in the food consumption behavior literature. Hence, in addition to basic sociodemographic variables (e.g., age, gender, education, income, household size) we also asked questions on: a) participants' diets because meat consumption habits affect the willingness to eat more plant-based products<sup>60</sup>; b) their food shopping criteria, especially how much emphasis they put on sustainability criteria such as animal welfare and environmental impacts of food products<sup>2,43</sup>; c) the amount of substitutes consumed, e.g., by friends, family etc. to analyze the degree of socialization of eating plant-based meat substitutes in their closer environment<sup>60</sup>; d) their food neophobia to determine the degree of reluctance to try new foods using the original Food Neophobia Scale<sup>18,59</sup>; e) their perceived ability to cook with meat substitutes as a proxy for the participants' ability to switch to more plant-based diets<sup>60</sup>; f) their perceived availability of meat substitute products when shopping which has been shown to be a barrier to changing the diet accordingly<sup>47</sup>; g) their household characteristics influencing the likelihood of following more plant-based diets<sup>60,72</sup>; h) their shopping behavior as a predictor of higher or lower involvement in food purchasing<sup>47</sup>; i) their use of a shoppinglist as a proxy of translating purchasing intentions into actual behavior<sup>73</sup> (see the detailed question wording in the questionnaire in Appendix F).

Then the respondents were randomly assigned to one of three groups (also see Figure 1 above): 1) a control group including only a graphical and textual definition of plant-based meat substitutes; 2) a factual information group receiving the same definition plus a graphical and textual message about the negative impacts of meat and positive impacts of meat substitutes on human health, animal welfare, and the environment; 3) a social norms group receiving the definition and factual information combined with a statement about national governmental dietary guidelines, fellow citizens, and celebrities supporting a reduction of meat and an increase of meat substitute consumption. As factual manipulation checks, measuring respondents' factual understanding and reinforcing the information received in the treatments, the participants then had to answer short multiple-choice questions on the information received (see questionnaire in Appendix F). The graphics below show the design of the control group and the treatments:

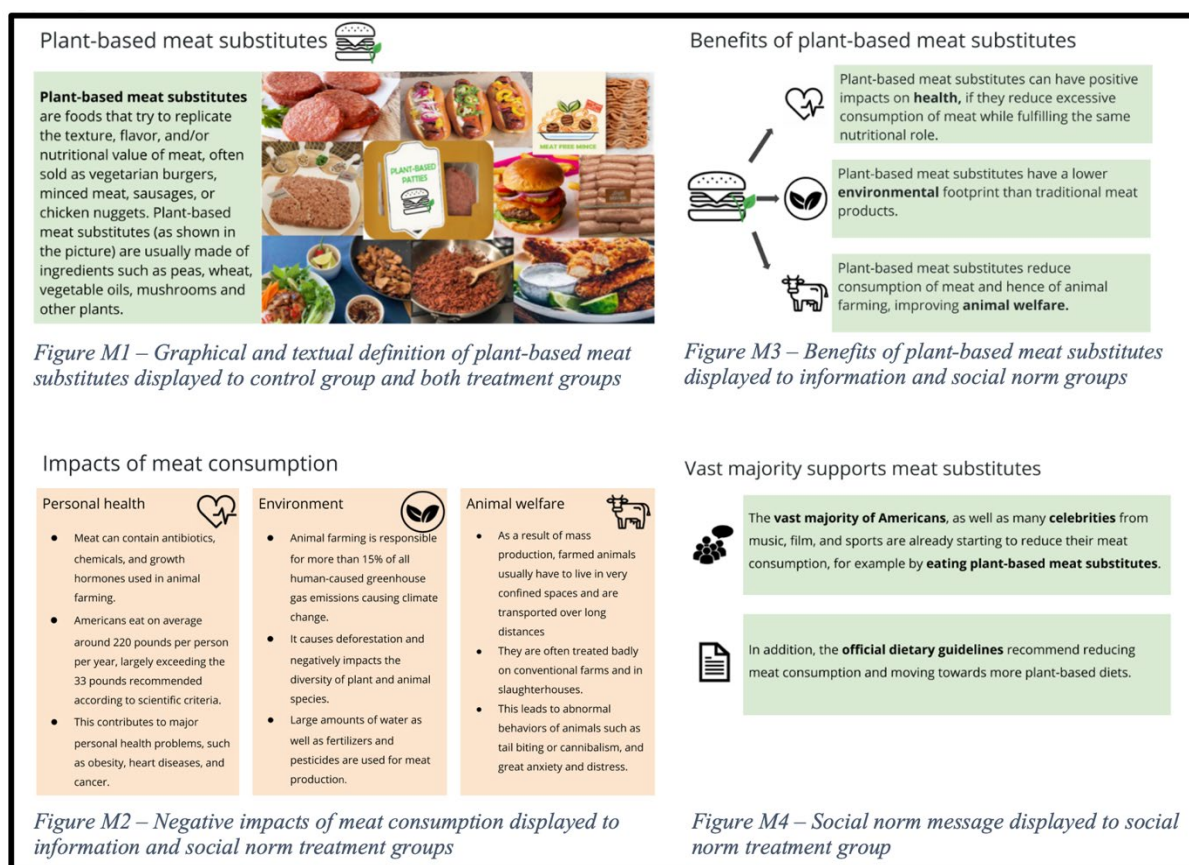


Figure M1 – Graphical and textual definition of plant-based meat substitutes displayed to control group and both treatment groups

Figure M3 – Benefits of plant-based meat substitutes displayed to information and social norm groups

Figure M2 – Negative impacts of meat consumption displayed to information and social norm treatment groups

Figure M4 – Social norm message displayed to social norm treatment group

After the treatments, we used 7-point Likert scales to assess our dependent variables of interest, namely, respondents’ intentions to reduce their meat consumption, to eat more substitutes and to support different types of food policies with the following items (based on survey items from Fesenfeld et al<sup>2,43</sup>):

- DV1a: How likely or unlikely is it that you increase your consumption of plant-based meat substitutes in the next two weeks? (Extremely unlikely – Extremely likely)
- DV1b: How likely or unlikely is it that you reduce your meat consumption within the next two weeks? (Extremely unlikely – Extremely likely)
- DV2a – general meat reduction policy support: Would you support or oppose government policies to reduce the consumption of meat products in the US/China? (Strongly oppose – Strongly support)
- DV2b – general meat substitute incentive policy support: Would you support or oppose government policies to increase the consumption of plant-based meat substitutes in the US/China? (Strongly oppose – Strongly support)
- DV2c – specific meat reduction policy support: Would you support or oppose the following government policies to reduce meat consumption in the US/China? (Strongly oppose – Strongly support)
  - Taxes on meat products increasing the price of meat
  - Two mandatory meat-free days per week in public cafeterias (like in universities, hospitals, government agencies)
  - Elimination of financial support (subsidies) for meat producers
- DV2d – specific meat substitute incentive policy support: Would you support or oppose the following government policies to incentivize the consumption of plant-based meat substitutes in the US/China? (Strongly oppose – Strongly support)
  - Lower taxes on plant-based meat substitutes decreasing their price
  - Two mandatory days per week in which public cafeterias (e.g. in universities, hospitals, government agencies) serve plant-based meat substitutes
  - Introduction of financial support (subsidies) for plant-based meat substitute producers

As robustness check for general policy support, we also used the specific policy support items to build an additive index for meat reduction and meat substitute incentive policies by adding the respective specific policy items together and dividing the sum by the number of items (three in each case).

We also measured respondents' willingness to pay for meat substitutes with the following item:

- DV1c: Now think about the average price of a pound/half a kilogram of meat in the US/China that currently is 4.80 Dollar/20 Yuan. What is the maximum price, compared to the average price of a pound of meat, that you would pay for a pound of plant-based meat substitute?

Here, we asked participants to use a slider to determine the maximal price, compared to the average price of a pound/half a kilogram of meat which they would pay for a pound/half a kilogram of plant-based meat substitute. The figure in the US/Chinese sample of the average meat price of about 4.80 Dollar per pound/20 Yuan per half kilogram has been taken from the U.S. Bureau of Labor Statistics<sup>74</sup>/Chinese Ministry of Agriculture and Rural Affairs. In the US, the price was calculated by taking the average meat price in US cities averaged over all types of meat, however, not weighted for the consumption frequency of each meat type. The values provided on the slider were 4.80 Dollar/20 Yuan in the middle, which was labelled as "same" as for meat, 2.40 Dollar/10 Yuan on the left, and 7.20 Dollar / 40 Yuan on the right. Here the endpoints of the slider correspond to 50 percent less and, respectively, 50 percent more than the average price of meat.

Further as additional variables of interest we asked the participants to answer questions attempting to reveal their attitudes towards plant-based meat substitutes and towards the reduction of meat consumption, as well as questions that should reveal the strength and credibility of the information received in the treatments. Finally, the participants in the US sample had to answer some short questions to reveal their political ideology before the survey ended with the second part of the demographical questions.

### ***Observational analysis***

To get an overview and a better understanding of the underlying data, different exploratory analyses were conducted. As part of the first exploratory analysis we used advanced variable selection methods to avoid overfitting the regression models with too many control variables, since there are several potentially important predictors of food consumption behavior and policy support according to the existing literature (see above). First, we applied the Bayesian machine-learning based variable selection method LASSOplus<sup>58</sup> to test the relative importance of the experience variable compared to the other potentially important predictors identified in the literature. LASSOplus performs variable selection using a regularization parameter to improve the prediction accuracy and interpretability of statistical models in settings with many predictor variables. By selecting the scale type "TTX" in the sparsereg package in R, the model also automatically creates and thus controls for interactions between each level of the treatment variables and between every control variable added to the regression<sup>58</sup>. The LASSOplus algorithm then selects those variables that are robust and relevant predictors of the dependent variables in both, the US and the Chinese sample, among the larger set of potentially predictive control variables. To enable the selection and comparison of coefficients, we z-transformed all predictors, i.e., all the control variables, including demographics, from the survey. The LASSOplus analysis yields specific posterior median estimates for each selected variable and is thus a first step to determine how strongly and in which direction prior experience with meat-substitute products affects the outcome variables of interest compared to the other potential predictor variables.

However, LASSOplus is a parametric method; therefore, the functional form of the true underlying model must be assumed. As there is no guarantee that the true underlying model is linear, we also use the random forest method to validate the relative importance of the experience variable from LASSOplus and add more robustness to our findings. Random forest is a nonparametric ensemble learning method that randomly creates decision trees. For regression tasks, random forests return the average results of all decision trees to avoid overfitting. The permutation importance method is used to assess the feature importance of the random forest. In the permutation importance method, the values of single features are shuffled randomly to break the dependency between the feature and the dependent variable. For important features, this shuffling will decrease the accuracy of the model. The random forest is implemented with the Python package scikit-learn and uses 1000 trees per forest. To compute the permutation feature importance, the package eli5 was used. It shuffles the values of each feature 50 times and measures how much the accuracy of the model changes for each shuffling. This package returns the feature importance, which is the mean decrease of the model score when a feature is permuted and its standard deviation. Combining the complementary benefits of both approaches thus yields very robust prediction outcomes.

**Experimental study**

Following the exploratory observational analysis, three main regression models with robust standard errors were calculated for each dependent variable:

**Linear model 1:**  $Y = \beta_0 + \beta_1 * \text{Information Group} + \beta_2 * \text{Social Norms Group} + \varepsilon$

In the first model to estimate the main treatment effects (compare Figure 3), Y stands for the dependent variable and Group is a factor variable indicating treatment assignment with 1 control group, 2 information group and 3 social norms group. Since the assumption of constant error variances cannot be justified, robust standard errors were used throughout the analysis. To determine whether there is a significant impact of the treatment assignment on the dependent variables, non-parametric Kruskal Wallis rank-sum tests were conducted followed by Dunn's tests for post-hoc pairwise comparisons. Those tests were chosen instead of an analysis of variance (ANOVA) followed by post hoc TukeyHSD tests, since the ANOVA assumptions of homogeneity of the variances between the treatments and normality of the residuals (Feir-Walsh & Toothaker, 1974) are not met. As robustness check for the policy support outcomes, we also used the additive policy support index variables (see above). The results of our robustness check analyses support the findings from the main regression outcomes.

**Linear model 2:**  $Y = \beta_0 + \beta_1 * \text{Information Group} + \beta_2 * \text{Social Norms Group} + \beta_3 * \text{experience} + \beta_4 * (\text{Information Group} * \text{experience}) + \beta_5 * (\text{Social Norms Group} * \text{experience}) + \varepsilon$

In the second model to estimate interaction effects between the treatments and experience (compare Figure 4), Y stands for the dependent variable, Group is a factor variable indicating treatment assignment with 1 control group, 2 information group and 3 social norms group, and experience is an ordinal numeric variable indicating substitute consumption frequency ranging from 0 never to 6 every day.

**Linear model 3:**  $Y = \beta_0 + \beta_1 * \text{Information Group} + \beta_2 * \text{Social Norms Group} + \beta_3 * \text{experience} + \beta_4 * (\text{Information Group} * \text{experience}) + \beta_5 * (\text{Social Norms Group} * \text{experience}) + \text{control variables} + \varepsilon$

Lastly, in the third model, as a robustness check, we included additional control variables to see whether the interaction effects estimated in model 2 are robust. We included only those control variables that were identified to have a strong (significant) relationship with the dependent variables in the LASSOplus regressions as well as core socio-demographic variables (age, gender, education, income, region). These robustness check tests could not confirm the significant interaction effects identified in the US sample (see Appendix F table F2a).

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**Supplementary Information for “Enabling tipping dynamics in food system transformation: How information and experience with novel meat substitutes can create positive political feedbacks”**

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**A. Sample Characteristics**

Sample	N = 1360 (total sample)	N = 1094 (reduced sample incl. regional questions)	US Census 2019
<i>Gender</i>			
Male	50%		49%
Female	49.5%		51%
Other	0.5%		–
<i>Age</i>			
18-24	8%		9%
25-34	12%		14%
35-44	13%		13%
45+	66%		64%
<i>Education</i>			
No College	32%		39%
Some college	30%		30%
College+	38%		31%
<i>Income</i>			
\$27,999 or less	23%		20%
\$28,000 - \$53,499	27%		20%
\$53,500 - \$86,499	22.3%		20%
\$86,500 - \$142,499	17%		20%
\$142,500 - \$269,999	8.5%		15%
\$270,000 or more	2%		5%
<i>Region</i>			
Northeast		18%	17%
Midwest		22%	21%
South		38%	38%
West		22%	24%

*Table A Fehler! Kein Text mit angegebener Formatvorlage im Dokument.-1 – Comparison of US national statistics<sup>65</sup> and US sample statistics*

Sample	N = 1230 (total sample)	China Statistical Yearbook 2020
<i>Gender</i>		
Male	49.8%	51%
Female	49.8%	49%
Other	0.2%	–
<i>Age</i>		
15-24	15%	13%
25-34	28%	19%
35-44	25%	17%
45+	33%	51%
<i>Education</i>		
No College	8%	85%
Professional college	17%	8%
Bachelor	68%	6%
Postgraduate	7%	1%
<i>Income</i>		
Less than CNY 76,000	8%	20%
CNY 76,000 to 89,999	7%	20%
CNY 90,000 to 125,999	19%	20%
CNY 126,000 to 198,999	29%	20%
CNY 199,000 to 342,999	25%	15%
More than CNY 343,000	8%	5%
<i>Region</i>		
North	14%	14%
Northeast	7%	7%
East	35%	36%
South Central	23%	24%
Southwest	12%	12%
Northwest	5%	5%

*Table A Fehler! Kein Text mit angegebener Formatvorlage im Dokument.-2 - Comparison of Chinese national statistics<sup>66</sup> and Chinese sample statistics*

**B. Factual Manipulation Check***Credibility of Treatments*

Perceived credibility in %	Control group			Information group			Social norms group		
	<i>Not credible</i>	<i>Neither nor</i>	<i>Credible</i>	<i>Not credible</i>	<i>Neither nor</i>	<i>Credible</i>	<i>Not credible</i>	<i>Neither nor</i>	<i>Credible</i>
<b>China (N=1230)</b>	4%	17%	79%	3%	12%	85%	4%	12%	84%
<b>US (N=1360)</b>	10%	22%	68%	12%	19%	69%	13%	21%	66%

Table B1 - Perceived credibility of information received in the control and the treatment groups (in %)

*Regression Outputs of Credibility*

Table B2a: Check impact of treatment assignment on credibility of information received in the US Sample

<u>Dependent variable:</u>	
credibility	
Information Group	0.026 (0.092)
Social Norms Group	- 0.035 (0.094)
Constant	4.976*** (0.065)
Observations	1,360
R <sup>2</sup>	0.0003
Adjusted R <sup>2</sup>	-0.001
Residual Std. Error	1.405 (df = 1357)
F Statistic	0.221 (df = 2; 1357)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table B2b: Check impact of treatment assignment on credibility of information received in the Chinese Sample

<u>Dependent variable:</u>	
credibility	
Information Group	0.255*** (0.074)
Social Norms Group	0.212*** (0.074)
Constant	5.284*** (0.054)
Observations	1,230
R <sup>2</sup>	0.011
Adjusted R <sup>2</sup>	0.010
Residual Std. Error	1.047 (df = 1227)
F Statistic	6.928*** (df = 2; 1227)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**C. LASSOplus Output****Predictor Variable Index**

<i>Predictor Name</i>	<i>Explanation</i>	<i>Question No</i>
gov_intervention	level of preferred governmental intervention	133
political_spectrum	political views on a scale from left to right	135
region	geographical region in country	145
age	age	4
education	highest degree of formal education	8
gender	gender	10
diet	type of diet (Meat-Eater, Vegetarian, Vegan or Pescatarian)	12
experience	degree of personal experience with plant-based meat substitutes	18
cooking	cooking experience with plant-based meat substitutes	20.1
restaurant	experience with plant-based meat substitutes in restaurants	20.3
neophobia	reluctance to try new food using the original food neophobia scale	24
socializedfriend	degree of socialization with meat substitutes among friends	22.2
socializedfam	degree of socialization with meat substitutes among family	22.1
socializedwork	degree of socialization with meat substitutes among co-workers	22.3
household	household size	31
able	perceived ability to cook with meat-substitutes	26
available	availability of plant-based meat substitute at participant's standard shopping outlets	29
outlet	place where participant mostly buys food	28
mainshopper	being the main shopper of the household	33
shoplist	use of shopping list	35
esc	environmental and social sustainability criteria for grocery shopping	160.5-160.12
Group_Control	part of control group	39
Group_Information	part of factual information treatment	45,47,49
Group_Social_Norms	part of social norms treatment	57,59,61,63



**LASSOplus Output Tables US Sample**  
*LASSOplus outputs for the US sample:*

DV1a: Intention to eat substitutes

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	6

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
experience	0,661	0,575	0,831	0	0	1
able	0,287	0,232	0,435	0	0	1
esc	0,273	0,241	0,408	0	0	1
gov:intervention	0,199	0,155	0,336	0	0	1
cooking	0,168	0,127	0,331	0	0	1
restaurant	0,114	0,0981	0,26	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

*Table C1 - LASSOplus regression output US sample for DV1a showing the posterior median of the standardized and selected main effects ordered by their magnitude*

DV1b: Intention to reduce meat consumption

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	4

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
experience	0,505	0,422	0,68	0	0	1
gov:intervention	0,289	0,248	0,433	0	0	1
able	0,246	0,191	0,41	0	0	1
esc	0,187	0,157	0,336	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

*Table C2 - LASSOplus regression output US sample for DV1b showing the posterior median of the standardized and selected main effects ordered by their magnitude*

DV2a: Intention to support meat reduction policies

LASSOplus results:

---

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	5

---

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0,638	0,591	0,79	0	0	1
experience	0,29	0,216	0,475	0	0	1
treat:Social Norms	0,192	0,215	0,658	0,001	0	0,999
able	0,152	0,117	0,36	0,001	0	0,999
esc	0,128	0,115	0,308	0	0	1

---

Posterior intervals using quantiles of the approximate confidence interval

*Table C3 - LASSOplus regression output US sample for DV2a showing the posterior median of the standardized and selected main effects ordered by their magnitude*

DV2a\_Index: Intention to support meat reduction policies

LASSOplus results:

---

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	3

---

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0,525	0,485	0,653	0	0	1
experience	0,282	0,216	0,446	0	0	1
restaurant	0,0884	0,0943	0,262	0	0	1

---

Posterior intervals using quantiles of the approximate confidence interval

*Table C4 - LASSOplus regression output US sample for DV2a\_Index showing the posterior median of the standardized and selected main effects ordered by their magnitude*

DV2b: Intention to support policies incentivizing substitute consumption

LASSOplus results:

---

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	4

---

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0,615	0,565	0,763	0	0	1
experience	0,269	0,2	0,454	0	0	1
able	0,21	0,156	0,393	0	0	1
esc	0,103	0,107	0,29	0	0	1

---

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C5 - LASSOplus regression output US sample for DV2b showing the posterior median of the standardized and selected main effects ordered by their magnitude*

---

DV2b\_Index: Intention to support policies incentivizing substitute consumption

LASSOplus results:

---

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	5

---

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0,575	0,531	0,714	0	0	1
able	0,24	0,182	0,41	0	0	1
esc	0,236	0,201	0,378	0	0	1
restaurant	0,168	0,141	0,306	0	0	1
experience	0,162	0,0941	0,342	0,002	0	0,998

---

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C6 - LASSOplus regression output US sample for DV2b\_Index showing the posterior median of the standardized and selected main effects ordered by their magnitude*

---

DV1c: Willingness to pay for substitutes

LASSOplus results:

-----  
 Variable Selection:  
           Original variables: 62  
           Selected variables: 3  
 -----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
experience	0,306	0,248	0,439	0	0	1
age	-0,162	-0,284	-0,135	1	0	0
esc	0,083	0,0816	0,224	0	0	1

-----  
 Posterior intervals using quantiles of the approximate confidence interval

---

*Table C7 - LASSOplus regression output US sample for DV1c showing the posterior median of the standardized and selected main effects ordered by their magnitude*

DV2c: Intention to support specific meat reduction policy instruments

**##taxes**

LASSOplus results:

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	2

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0.465	0.422	0.623	0	0	1
experience	0.361	0.289	0.541	0	0	1

Posterior intervals using quantiles of the approximate confidence interval

**##two meat-free days**

LASSOplus results:

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	4

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0.559	0.522	0.728	0	0	1
experience	0.247	0.157	0.476	0	0	1
restaurant	0.143	0.126	0.33	0	0	1
esc	0.12	0.125	0.347	0.001	0	0.999

Posterior intervals using quantiles of the approximate confidence interval

**##eliminate subsidies for producers**

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	62
	Selected	variables:	2

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0.5	0.455	0.672	0	0	1
experience	0.159	0.0987	0.387	0.002	0	0.998

-----

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C8 - LASSOplus regression output US sample for DV2c (1- taxes, 2- two meat-free days, 3 – eliminate subsidies for producers) showing the posterior median of the standardized and selected main effects ordered by their magnitude*

DV2d: Intention to support specific policy instruments incentivizing substitute consumption

##taxes

LASSOplus

results:

-----  
Variable

Selection:

Original variables: 62

Selected variables: 4

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0.529	0.483	0.704	0	0	1
able	0.298	0.239	0.492	0	0	1
restaurant	0.152	0.135	0.327	0	0	1
esc	0.0962	0.113	0.334	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

##two substitute days

LASSOplus

results:

-----  
Variable

Selection:

Original variables: 62

Selected variables: 6

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0.604	0.553	0.775	0	0	1
experience	0.299	0.218	0.506	0	0	1
treat:information	0.296	0.277	0.714	0	0	1
esc	0.184	0.15	0.368	0	0	1
able	0.152	0.132	0.372	0.002	0	0.998
restaurant	0.124	0.118	0.324	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

##introduce subsidies for producers

LASSOplus	results:					
-----						
Variable	Selection:					
	Original	variables:	62			
	Selected	variables:	4			
-----						
Coefficients:						
	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
gov:intervention	0.569	0.525	0.726	0	0	1
esc	0.34	0.301	0.495	0	0	1
able	0.202	0.14	0.4	0.002	0	0.998
restaurant	0.137	0.12	0.309	0	0	1
-----						

Posterior intervals using quantiles of the approximate confidence interval

*Table C9 - LASSOplus regression output US sample for DV2d (1- taxes, 2- two substitute days, 3 – introduce subsidies for producers) showing the posterior median of the standardized and selected main effects ordered by their magnitude*



### LASSOplus Output Tables China Sample

DV1a: Intention to eat substitutes

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	7

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
able	0.338	0.297	0.43	0	0	1
esc	0.308	0.279	0.395	0	0	1
shoplist	0.099	0.0762	0.202	0	0	1
experience	0.0968	0.0565	0.22	0	0	1
mainshopper	0.0848	0.0785	0.196	0	0	1
available	0.0683	0.0666	0.197	0	0	1
fns	-0.0565	-0.177	-0.068	1	0	0

-----

Posterior intervals using quantiles of the approximate confidence interval

*Table C10 - LASSOplus regression output Chinese sample for DV1a showing the posterior median of the standardized and selected main effects ordered by their magnitude*

DV1b: Intention to reduce meat consumption

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	5

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.334	0.3	0.422	0	0	1
treat:Social Norms	0.304	0.249	0.514	0	0	1
able	0.165	0.127	0.267	0	0	1
shoplist	0.103	0.0807	0.216	0	0	1
experience	0.0783	0.0552	0.219	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

*Table C11 - LASSOplus regression output Chinese sample for DV1b showing the posterior median of the standardized and selected main effects ordered by their magnitude*

---

DV2a: Intention to support meat reduction policies

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	3

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.326	0.289	0.428	0	0	1
treat:Social Norms	0.258	0.211	0.523	0	0	1
able	0.233	0.196	0.345	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C12 - LASSOplus regression output Chinese sample for DV2a showing the posterior median of the standardized and selected main effects ordered by their magnitude*

---

DV2a\_Index: Intention to support meat reduction policies

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	3

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.459	0.417	0.564	0	0	1
age	0.183	0.15	0.296	0	0	1
able	0.148	0.113	0.271	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C13 - LASSOplus regression output Chinese sample for DV2a\_Index showing the posterior median of the standardized and selected main effects ordered by their magnitude*

---

DV2b: Intention to support policies incentivizing substitute consumption

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	3

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.282	0.254	0.367	0	0	1
able	0.27	0.236	0.367	0	0	1
fns	-0.116	-0.213	-0.1	1	0	0

-----

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C14 - LASSOplus regression output Chinese sample for DV2b showing the posterior median of the standardized and selected main effects ordered by their magnitude*

---

DV2b\_Index: Intention to support policies incentivizing substitute consumption

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	3

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.272	0.244	0.362	0	0	1
able	0.183	0.15	0.284	0	0	1
fns	-0.157	-0.253	-0.135	1	0	0

-----

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C15 - LASSOplus regression output Chinese sample for DV2b\_Index showing the posterior median of the standardized and selected main effects ordered by their magnitude*

---

DV1c: Willingness to pay for substitutes

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	3

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
shoplist	0.708	0.583	1.11	0	0	1
esc	0.602	0.487	1.01	0	0	1
experience	0.593	0.452	1.09	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C16 - LASSOplus regression output Chinese sample for DV1c showing the posterior median of the standardized and selected main effects ordered by their magnitude*

---

DV2c: Intention to support specific meat reduction policy instruments

##taxes

LASSOplus

results:

-----  
Variable

Selection:

Original variables: 59

Selected variables: 3  
-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.442	0.396	0.568	0	0	1
shoplist	0.199	0.162	0.343	0	0	1
age	0.0968	0.104	0.276	0	0	1

-----  
Posterior intervals using quantiles of the approximate confidence interval

##two meat-free days

LASSOplus

results:

-----  
Variable

Selection:

Original variables: 59

Selected variables: 2  
-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.518	0.474	0.629	0	0	1
able	0.226	0.185	0.347	0	0	1

-----  
Posterior intervals using quantiles of the approximate confidence interval

**##eliminate subsidies for producers**

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	3

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.363	0.324	0.477	0	0	1
age	0.16	0.133	0.29	0	0	1
able	0.146	0.115	0.279	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C17 - LASSOplus regression output Chinese sample for DV2c (1- taxes, 2- two meat-free days, 3 – eliminate subsidies for producers) showing the posterior median of the standardized and selected main effects ordered by their magnitude*

DV2d: Intention to support policy instruments incentivizing substitute consumption

##taxes

LASSOplus results:

-----  
 Variable Selection:  
 Original variables: 59  
 Selected variables: 3  
 -----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
fns	-0.222	-0.321	-0.2	1	0	0
able	0.187	0.154	0.289	0	0	1
esc	0.177	0.152	0.275	0	0	1

##two substitute days

LASSOplus results:

-----  
 Variable Selection:  
 Original variables: 59  
 Selected variables: 3  
 -----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.389	0.355	0.49	0	0	1
able	0.229	0.193	0.342	0	0	1
fns	-0.101	-0.229	-0.099	1	0	0

-----  
 Posterior intervals using quantiles of the approximate confidence interval

**##introduce subsidies for producers**

LASSOplus results:

-----

Variable	Selection:		
	Original	variables:	59
	Selected	variables:	3

-----

Coefficients:

	Posterior Median	5%	95%	Pr(b<0)	Pr(b=0)	Pr(b>0)
esc	0.268	0.239	0.364	0	0	1
fns	-0.178	-0.279	-0.158	1	0	0
able	0.177	0.146	0.283	0	0	1

-----

Posterior intervals using quantiles of the approximate confidence interval

---

*Table C18 - LASSOplus regression output Chinese sample for DV2c (1- taxes, 2- two substitute days, 3 – introduces subsidies for producers) showing the posterior median of the standardized and selected main effects ordered by their magnitude*



**D. Main Experimental Regression Outputs**

Table D1a: Main Effects US Sample - Intentions to reduce meat consumption (DV1b) and to eat more substitutes (DV1a)

	<i>Dependent variable:</i>	
	DV1b	DV1a
	(1)	(2)
Information Group	0.340*** (0.119)	0.280**(0.127) 0.296**(0.124)
Social Norms Group	0.358*** (0.120)	
Constant	3.018*** (0.082)	2.932*** (0.087)
Observations	1,295	1,360
R <sup>2</sup>	0.009	0.005
Adjusted R <sup>2</sup>	0.007	0.004
Residual Std. Error	1.773 (df = 1292)	1.903 (df = 1357)
F Statistic	5.612*** (df = 2; 1292)	3.465** (df = 2; 1357)

*Note:* \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table D1b: Main Effects Chinese Sample - Intentions to reduce meat consumption (DV1b) and to eat more substitutes (DV1a)

	<i>Dependent variable:</i>	
	DV1b	DV1a
	(1)	(2)
Information Group	0.367*** (0.094)	0.287*** (0.091)
Social Norms Group	0.441*** (0.093)	0.173* (0.095)
Constant	4.541*** (0.067)	4.812*** (0.065)
Observations	1,156	1,230
R <sup>2</sup>	0.022	0.008
Adjusted R <sup>2</sup>	0.020	0.006
Residual Std. Error	1.293 (df = 1153)	1.329 (df = 1227)
F Statistic	12.789*** (df = 2; 1153)	4.827*** (df = 2; 1227)

*Note:* \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table D2a: Main Effects US Sample - Intentions to support meat reduction (DV2a) and substitute incentivizing policies (DV2b)

	<i>Dependent variable:</i>	
	DV2a	DV2b
	(1)	(2)
Information Group	0.339*** (0.124)	0.227* (0.122)
Social Norms Group	0.422*** (0.122)	0.066 (0.122)
Constant	3.137*** (0.083)	3.742*** (0.083)
Observations	1,360	1,360
R <sup>2</sup>	0.009	0.003
Adjusted R <sup>2</sup>	0.008	0.001
Residual Std. Error (df = 1357)	1.874	1.850
F Statistic (df = 2; 1357)	6.438***	1.813
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table D2b: Main Effects Chinese Sample - Intentions to support meat reduction (DV2a) and substitute incentivizing policies (DV2b)

	<i>Dependent variable:</i>	
	DV2a	DV2b
	(1)	(2)
Information Group	0.381*** (0.098)	0.299*** (0.085)
Social Norms Group	0.437*** (0.097)	0.256*** (0.087)
Constant	4.704*** (0.071)	5.136*** (0.062)
Observations	1,230	1,230
R <sup>2</sup>	0.019	0.012
Adjusted R <sup>2</sup>	0.018	0.010
Residual Std. Error (df = 1227)	1.379	1.215
F Statistic (df = 2; 1227)	12.111***	7.212***
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table D3a: Main Effects US Sample - Willingness to pay (DV1c)

<i>Dependent variable:</i>	
DV1c	
Information Group	0.019 (0.086)
Social Norms Group	0.017 (0.085)
Constant	4.220*** (0.061)
Observations	1,360
R <sup>2</sup>	0.0001
Adjusted R <sup>2</sup>	-0.001
Residual Std. Error	1.290 (df = 1357)
F Statistic	0.085 (df = 2; 1357)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table D3b: Main Effects Chinese Sample - Willingness to pay (DV1c)

<i>Dependent variable:</i>	
DV1c	
Information Group	0.372 (0.354)
Social Norms Group	0.926** (0.361)
Constant	17.470*** (0.255)
Observations	1,230
R <sup>2</sup>	0.006
Adjusted R <sup>2</sup>	0.004
Residual Std. Error	5.106 (df = 1227)
F Statistic	3.414** (df = 2; 1227)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table D4a: Main Effects US Sample - Additive meat reduction (DV2c) and substitute incentivizing policy support (DV2d) indexes

	<i>Dependent variable:</i>	
	DV2c (1)	DV2d (2)
Information Group	0.282** (0.118)	0.277** (0.113)
Social Norms Group	0.182 (0.118)	0.180 (0.110)
Constant	3.619*** (0.083)	2.811*** (0.076)
Observations	1,360	1,360
R <sup>2</sup>	0.004	0.005
Adjusted R <sup>2</sup>	0.003	0.003
Residual Std. Error (df = 1357)	1.785	1.699
F Statistic (df = 2; 1357)	2.908*	3.106**
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table D4b: Main Effects Chinese Sample - Additive meat reduction (DV2c) and substitute incentivizing policy support (DV2d) indexes

	<i>Dependent variable:</i>	
	DV2c (1)	DV2d (2)
Information Group	0.307*** (0.080)	0.261*** (0.096)
Social Norms Group	0.233*** (0.083)	0.264*** (0.097)
Constant	4.953*** (0.061)	4.144*** (0.068)
Observations	1,230	1,230
R <sup>2</sup>	0.013	0.008
Adjusted R <sup>2</sup>	0.011	0.006
Residual Std. Error (df = 1227)	1.140	1.385
F Statistic (df = 2; 1227)	8.065***	4.894***
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table D5a: Main Effects US Sample - Intention to support substitute incentivizing policy instruments (DV2d)

	<i>Dependent variable:</i>		
	taxes	two substitute days	introduction of subsidies
	(1)	(2)	(3)
Information Group	0.256** (0.129)	0.350*** (0.132)	0.241* (0.127)
Social Norms Group	0.243* (0.132)	0.084 (0.130)	0.219* (0.128)
Constant	3.978*** (0.093)	3.157*** (0.091)	3.722*** (0.088)
Observations	1,360	1,360	1,360
R <sup>2</sup>	0.004	0.006	0.003
Adjusted R <sup>2</sup>	0.002	0.004	0.002
Residual Std. Error (df = 1357)	1.966	1.992	1.938
F Statistic (df = 2; 1357)	2.431*	3.815**	2.136

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Table D5b: Main Effects Chinese Sample - Intention to support substitute incentivizing policy instruments (DV2d)

	<i>Dependent variable:</i>		
	taxes	two substitute days	introduction of subsidies
	(1)	(2)	(3)
Information Group	0.340*** (0.087)	0.302*** (0.097)	0.280*** (0.090)
Social Norms Group	0.254*** (0.089)	0.239** (0.100)	0.204** (0.095)
Constant	5.119*** (0.065)	4.768*** (0.071)	4.973*** (0.071)
Observations	1,230	1,230	1,230
R <sup>2</sup>	0.013	0.009	0.008
Adjusted R <sup>2</sup>	0.012	0.007	0.007
Residual Std. Error (df = 1227)	1.235	1.396	1.292
F Statistic (df = 2; 1227)	8.367***	5.323***	5.106***

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Table D6a: Main Effects US Sample - Intention to support meat reduction policy instruments (DV2c)

	<i>Dependent variable:</i>		
	taxes	two meat-free days	elimination of subsidies
	(1)	(2)	(3)
Information Group	0.325*** (0.121)	0.295** (0.132)	0.211* (0.125)
Social Norms Group	0.121 (0.119)	0.143 (0.130)	0.274** (0.125)
Constant	2.492*** (0.082)	2.934*** (0.091)	3.007*** (0.085)
Observations	1,360	1,360	1,360
R <sup>2</sup>	0.005	0.004	0.004
Adjusted R <sup>2</sup>	0.004	0.002	0.002
Residual Std. Error (df = 1357)	1.834	1.986	1.904
F Statistic (df = 2; 1357)	3.636**	2.507*	2.574*

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Table D6b: Main Effects Chinese Sample - Intention to support meat reduction policy instruments (DV2c)

	<i>Dependent variable:</i>		
	taxes	two meat-free days	elimination of subsidies
	(1)	(2)	(3)
Information Group	0.344*** (0.120)	0.223** (0.111)	0.217** (0.106)
Social Norms Group	0.339*** (0.119)	0.253** (0.112)	0.201* (0.107)
Constant	3.770*** (0.085)	4.425*** (0.079)	4.237*** (0.075)
Observations	1,230	1,230	1,230
R <sup>2</sup>	0.009	0.005	0.004
Adjusted R <sup>2</sup>	0.007	0.003	0.002
Residual Std. Error (df = 1227)	1.715	1.595	1.532
F Statistic (df = 2; 1227)	5.374***	3.069**	2.538*

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

## E. Main Experimental Regression Outputs with Interaction Effects

Table E1a: Interaction Effects US Sample - Intentions to reduce meat consumption (DV1b) and to eat more substitutes (DV1a)

	<i>Dependent variable:</i>	
	DV1b (1)	DV1a (2)
Information Group	0.288* (0.163)	0.294* (0.158)
Social Norms Group	0.308** (0.154)	0.224 (0.167)
experience	0.186*** (0.037)	0.315*** (0.033)
experience*Information Group	0.018 (0.052)	-0.023 (0.048)
experience*Social Norms Group	0.046 (0.062)	-0.029 (0.057)
Constant	2.308*** (0.081)	1.987*** (0.075)
Observations	1,295	1,360
R <sup>2</sup>	0.328	0.465
Adjusted R <sup>2</sup>	0.326	0.463
Residual Std. Error	1.461 (df = 1289)	1.396 (df = 1354)
F Statistic	125.994*** (df = 5; 1289)	235.531*** (df = 5; 1354)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table E1b: Interaction Effects Chinese Sample - Intentions to reduce meat consumption (DV1b) and to eat more substitutes (DV1a)

	<i>Dependent variable:</i>	
	DV1b (1)	DV1a (2)
Information Group	0.288* (0.163)	0.294* (0.158)
Social Norms Group	0.308** (0.154)	0.224 (0.167)
experience	0.186*** (0.037)	0.315*** (0.033)
experience*Information Group	0.018 (0.052)	-0.023 (0.048)
experience*Social Norms Group	0.046 (0.049)	-0.029 (0.049)
Constant	4.078*** (0.108)	4.011*** (0.109)
Observations	1,156	1,230
R <sup>2</sup>	0.115	0.190
Adjusted R <sup>2</sup>	0.111	0.187
Residual Std. Error	1.231 (df = 1150)	1.203 (df = 1224)
F Statistic	29.862*** (df = 5; 1150)	57.449*** (df = 5; 1224)
<i>Note:</i>	* p<0.1; **p<0.05; ***p<0.01	

Table E2a: Interaction Effects US Sample - Intentions to support meat reduction (DV2a) and substitute incentivizing policies (DV2b)

	<i>Dependent variable:</i>	
	DV2a	DV2b
	(1)	(2)
Information Group	0.139 (0.132)	0.035 (0.134)
Social Norms Group	0.315** (0.131)	0.0002 (0.135)
experience	0.404*** (0.048)	0.423*** (0.045)
experience*Information Group	0.135** (0.063)	0.129** (0.057)
experience*Social Norms Group	0.045 (0.064)	0.015 (0.062)
Constant	2.596*** (0.089)	3.176*** (0.093)
Observations	1,360	1,360
R <sup>2</sup>	0.219	0.225
Adjusted R <sup>2</sup>	0.216	0.222
Residual Std. Error (df = 1354)	1.666	1.633
F Statistic (df = 5; 1354)	75.789***	78.501***
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table E2b: Interaction Effects Chinese Sample - Intentions to support meat reduction (DV2a) and substitute incentivizing policies (DV2b)

	<i>Dependent variable:</i>	
	DV2a	DV2b
	(1)	(2)
Information Group	0.591*** (0.172)	0.284* (0.147)
Social Norms Group	0.498*** (0.173)	0.220 (0.151)
experience	0.185*** (0.038)	0.143*** (0.035)
experience*Information Group	-0.089* (0.053)	-0.004 (0.046)
experience*Social Norms Group	-0.029 (0.053)	0.010 (0.049)
Constant	4.233*** (0.120)	4.772*** (0.103)
Observations	1,230	1,230
R <sup>2</sup>	0.062	0.063
Adjusted R <sup>2</sup>	0.058	0.059
Residual Std. Error (df = 1224)	1.351	1.184
F Statistic (df = 5; 1224)	16.132***	16.543***
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	



Table E3a: Interaction Effects US Sample - Willingness to pay (DV1c)

<i>Dependent variable:</i>	
	DV1c
Information Group	0.024 (0.100)
Social Norms Group	0.062 (0.098)
experience	0.358*** (0.028)
experience*Information Group	-0.040 (0.039)
experience*Social Norms Group	-0.057 (0.039)
Constant	3.740*** (0.069)
Observations	1,360
R <sup>2</sup>	0.216
Adjusted R <sup>2</sup>	0.214
Residual Std. Error	1.143 (df = 1354)
F Statistic	74.800*** (df = 5; 1354)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table E3b: Interaction Effects Chinese Sample - Willingness to pay (DV1c)

<i>Dependent variable:</i>	
	DV1c
Information Group	1.122** (0.552)
Social Norms Group	1.781*** (0.587)
experience	0.904*** (0.129)
experience*Information Group	- 0.334* (0.181)
experience*Social Norms Group	- 0.352* (0.184)
Constant	15.168*** (0.388)
Observations	1,230
R <sup>2</sup>	0.072
Adjusted R <sup>2</sup>	0.069
Residual Std. Error	4.938 (df = 1224)
F Statistic	19.108*** (df = 5; 1224)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

## F. Regression Output Robustness Checks

Table F1a: Interaction Effects with controls US Sample - Intentions to reduce meat consumption (DV1b) and to eat more substitutes (DV1a)

	<i>Dependent variable:</i>	
	DV1b (1)	DV1a (2)
Information Group	0.252* (0.149)	0.351** (0.141)
Social Norms Group	0.469*** (0.157)	0.388*** (0.140)
experience	0.274*** (0.057)	0.365*** (0.056)
ability	0.154*** (0.042)	0.207*** (0.039)
cooking exp	0.351** (0.149)	0.411*** (0.145)
restaurant exp	0.325** (0.148)	0.477*** (0.138)
government intervention	0.167*** (0.029)	0.109*** (0.028)
esc	0.989*** (0.273)	1.541*** (0.259)
education	0.037 (0.052)	0.042 (0.043)
age	0.001 (0.003)	- 0.004 (0.003)
gender	0.012*** (0.003)	- 0.002 (0.008)
region	- 0.064 (0.052)	0.019 (0.046)
income	0.051 (0.043)	0.0004 (0.039)
experience*Information Group	0.059 (0.057)	- 0.011 (0.056)
experience*Socia Norms Group	- 0.019 (0.068)	0.031 (0.064)
Constant	0.815*** (0.314)	0.882*** (0.303)
Observations	797	837
R <sup>2</sup>	0.434	0.552
Adjusted R <sup>2</sup>	0.423	0.544
Residual Std. Error	1.381 (df = 781)	1.315 (df = 821)
F Statistic	39.897*** (df = 15; 781)	67.496*** (df = 15; 821)

Note:

\* p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table F1b: Interaction Effects with controls Chinese Sample - Intentions to reduce meat consumption (DV1b) and to eat more substitutes (DV1a)

	<i>Dependent variable:</i>	
	DV1b (1)	DV1a (2)
Information Group	0.244 (0.152)	0.310** (0.143)
Social Norms Group	0.335** (0.141)	0.319** (0.140)
experience	0.088** (0.040)	0.132*** (0.033)
ability	0.269*** (0.046)	0.457*** (0.046)
cooking exp	0.006 (0.093)	0.212*** (0.079)
restaurant exp	0.102 (0.072)	0.153** (0.061)
esc	2.593*** (0.264)	2.381*** (0.254)
education	0.016 (0.055)	0.020 (0.051)
age	0.007** (0.003)	- 0.006** (0.003)
gender	0.010 (0.007)	0.004 (0.005)
region	0.011 (0.027)	0.017 (0.024)
income	0.032 (0.029)	0.048* (0.028)
experience*Information Group	0.031 (0.049)	- 0.034 (0.043)
experience*Social Norms Group	0.054 (0.046)	- 0.042 (0.042)
Constant	1.228*** (0.330)	1.222*** (0.302)
Observations	1,104	1,173
R <sup>2</sup>	0.261	0.389
Adjusted R <sup>2</sup>	0.251	0.382
Residual Std. Error	1.133 (df = 1089)	1.049 (df = 1158)
F Statistic	27.406*** (df = 14; 1089)	52.661*** (df = 14; 1158)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table F2a: Interaction Effects with controls US sample - Intentions to reduce meat consumption (DV1b) and to eat more substitutes (DV1a)

	<i>Dependent variable:</i>	
	DV1b (1)	DV1a (2)
Information Group	0.252* (0.149)	0.351** (0.141)
Social Norms Group	0.469*** (0.157)	0.388*** (0.140)
experience	0.274*** (0.057)	0.365*** (0.056)
ability	0.154*** (0.042)	0.207*** (0.039)
cooking exp	0.351** (0.149)	0.411*** (0.145)
restaurant exp	0.325** (0.148)	0.477*** (0.138)
government intervention	0.167*** (0.029)	0.109*** (0.028)
esc	0.989*** (0.273)	1.541*** (0.259)
education	0.037 (0.052)	-0.042 (0.043)
age	0.001 (0.003)	-0.004 (0.003)
gender	0.012*** (0.003)	-0.002 (0.008)
region	-0.064 (0.052)	-0.019 (0.046)
income	0.051 (0.043)	0.0004 (0.039)
experience*Information Group	0.059 (0.057)	-0.011 (0.056)
experience*Social Norms Group	-0.019 (0.068)	-0.031 (0.064)
Constant	0.815*** (0.314)	0.882*** (0.303)
Observations	797	837
R <sup>2</sup>	0.434	0.552
Adjusted R <sup>2</sup>	0.423	0.544
Residual Std. Error	1.381 (df = 781)	1.315 (df = 821)
F Statistic	39.897*** (df = 15; 781)	67.496*** (df = 15; 821)

Note:

\* p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Table F2b: Interaction Effects with controls Chinese Sample - Intentions to support meat reduction (DV2a) and substitute incentivizing policies (DV2b)

	<i>Dependent variable:</i>	
	DV2a (1)	DV2b (2)
Information Group	0.552*** (0.159)	0.297** (0.133)
Social Norms Group	0.518*** (0.160)	0.265* (0.135)
experience	0.067* (0.041)	0.025 (0.036)
ability	0.324*** (0.050)	0.384*** (0.043)
cooking exp	0.049 (0.100)	0.017 (0.084)
restaurant exp	- 0.022 (0.076)	0.052 (0.065)
diet	-0.134*** (0.037)	- 0.101*** (0.035)
esc	2.323*** (0.291)	2.041*** (0.239)
education	0.108* (0.060)	0.049 (0.052)
age	0.007** (0.003)	0.005* (0.003)
gender	0.004 (0.013)	0.010 (0.008)
region	0.007 (0.028)	- 0.008 (0.024)
income	0.073** (0.032)	0.058** (0.028)
experience*Information Group	-0.090* (0.049)	- 0.012 (0.042)
experience*Social Norms Group	- 0.022 (0.049)	0.006 (0.044)
Constant	1.630*** (0.390)	2.400*** (0.333)
Observations	1,173	1,173
R <sup>2</sup>	0.210	0.238
Adjusted R <sup>2</sup>	0.199	0.229
Residual Std. Error (df = 1157)	1.253	1.079
F Statistic (df = 15; 1157)	20.443***	24.151***

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table F3a: Interaction Effects with controls US Sample - Willingness to pay (DV1c)

	<i>Dependent variable:</i>
	DV1c
Information Group	0.143 (0.131)
Social Norms Group	0.106 (0.126)
experience	0.208*** (0.038)
ability	0.056* (0.032)
cooking exp	0.040 (0.102)
restaurant exp	0.204* (0.106)
government intervention	0.059*** (0.022)
esc	0.564*** (0.202)
education	0.045 (0.040)
age	- 0.012*** (0.002)
gender	-0.001 (0.006)
region	- 0.026 (0.040)
income	0.011 (0.033)
experience*Information Group	-0.067 (0.045)
experience*Social Norms Group	- 0.060 (0.047)
Constant	3.733*** (0.252)
Observations	837
R <sup>2</sup>	0.271
Adjusted R <sup>2</sup>	0.258
Residual Std. Error	1.119 (df = 821)
F Statistic	20.369*** (df = 15; 821)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table F3b: Interaction Effects with controls Chinese Sample - Willingness to pay (DV1c)

<u>Dependent variable:</u>	
	DV1c
Information Group	0.846 (0.551)
Social Norms Group	1.580*** (0.579)
experience	0.777*** (0.152)
ability	0.089 (0.180)
cooking exp	- 0.354 (0.366)
restaurant exp	- 0.741** (0.292)
esc	5.024*** (0.981)
education	0.233 (0.238)
age	- 0.037*** (0.012)
gender	- 0.046** (0.019)
region	- 0.249** (0.109)
income	0.371*** (0.117)
experience*Information Group	- 0.326* (0.181)
experience*Social Norms Group	- 0.311* (0.184)
Constant	12.449*** (1.362)
Observations	1,173
R <sup>2</sup>	0.129
Adjusted R <sup>2</sup>	0.118
Residual Std. Error	4.771 (df = 1158)
F Statistic	12.211*** (df = 14; 1158)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

## G. Random Forest Permutation Feature Importance

### Predictor Variable Index

<i>Predictor Name</i>	<i>Explanation</i>	<i>Question No</i>
gov_intervention	level of preferred governmental intervention	133
political_spectrum	political views on a scale from left to right	135
region	geographical region in country	145
age	age	4
education	highest degree of formal education	8
gender	gender	10
diet	type of diet (Meat-Eater, Vegetarian, Vegan or Pescatarian)	12
experience	degree of personal experience with plant-based meat substitutes	18
cooking	cooking experience with plant-based meat substitutes	20.1
restaurant	experience with plant-based meat substitutes in restaurants	20.3
neophobia	reluctance to try new food using the original food neophobia scale	24
socializedfriend	degree of socialization with meat substitutes among friends	22.2
socializedfam	degree of socialization with meat substitutes among family	22.1
socializedwork	degree of socialization with meat substitutes among co-workers	22.3
household	household size	31
able	perceived ability to cook with meat-substitutes	26
available	availability of plant-based meat substitute at participant's standard shopping outlets	29
outlet	place where participant mostly buys food	28
mainshopper	being the main shopper of the household	33
shoplist	use of shopping list	35
esc	environmental and social sustainability criteria for grocery shopping	160.5-160.12
Group_Control	part of control group	39
Group_Information	part of factual information treatment	45,47,49
Group_Social_Norms	part of social norms treatment	57,59,61,63



**Random Forest Output Tables USA**

Weight	Feature
0.5354 ± 0.1638	experience
0.0207 ± 0.0360	esc
0.0126 ± 0.0173	gov_intervention
0.0086 ± 0.0168	able
0.0053 ± 0.0162	age
0.0036 ± 0.0067	outlet
0.0024 ± 0.0041	available
0.0023 ± 0.0036	diet
0.0018 ± 0.0145	political_spectrum
0.0015 ± 0.0092	neophobia
0.0014 ± 0.0045	socializedwork
0.0007 ± 0.0026	cooking
0.0006 ± 0.0040	socializedfam
0.0006 ± 0.0044	restaurant
-0.0000 ± 0.0096	household
-0.0001 ± 0.0038	Group_Control
-0.0001 ± 0.0062	mainshopper
-0.0003 ± 0.0057	gender
-0.0011 ± 0.0034	Group_Information
-0.0018 ± 0.0058	Group_Social_Norms
-0.0019 ± 0.0046	education
-0.0023 ± 0.0057	socializedfriend
-0.0035 ± 0.0055	shoplist
-0.0051 ± 0.0102	region

Table G1: Feature Importance for willingness to reduce meat consumption (DV1a). Green means high importance, red means low importance of predictor.

Weight	Feature
0.3364 ± 0.0935	experience
0.0547 ± 0.0358	able
0.0456 ± 0.0299	gov_intervention
0.0387 ± 0.0323	esc
0.0085 ± 0.0051	socializedfam
0.0060 ± 0.0136	political_spectrum
0.0058 ± 0.0036	available
0.0045 ± 0.0250	age
0.0035 ± 0.0079	region
0.0032 ± 0.0050	outlet
0.0027 ± 0.0037	cooking
0.0015 ± 0.0102	education
0.0013 ± 0.0044	restaurant
0.0013 ± 0.0022	Group_Information
0.0009 ± 0.0052	socializedwork
0.0006 ± 0.0058	gender
0.0003 ± 0.0032	Group_Control
0.0003 ± 0.0062	shoplist
-0.0001 ± 0.0036	socializedfriend
-0.0002 ± 0.0160	neophobia
-0.0005 ± 0.0013	diet
-0.0013 ± 0.0078	mainshopper
-0.0015 ± 0.0067	Group_Social_Norms
-0.0059 ± 0.0060	household

Table G2: Feature Importance for willingness to eat more meat substitutes (DV1b). Green means high importance, red means low importance of predictor.

Weight	Feature
0.1876 ± 0.0756	experience
0.1197 ± 0.0761	age
0.0311 ± 0.0276	esc
0.0123 ± 0.0136	able
0.0122 ± 0.0202	gov_intervention
0.0112 ± 0.0143	neophobia
0.0075 ± 0.0060	available
0.0072 ± 0.0082	shoplist
0.0067 ± 0.0271	political_spectrum
0.0037 ± 0.0130	region
0.0036 ± 0.0061	gender
0.0018 ± 0.0040	Group_Control
0.0016 ± 0.0038	socializedfam
0.0010 ± 0.0041	socializedfriend
0.0008 ± 0.0122	education
0.0003 ± 0.0049	Group_Social_Norms
0.0000 ± 0.0015	cooking
-0.0006 ± 0.0020	outlet
-0.0009 ± 0.0026	Group_Information
-0.0012 ± 0.0030	diet
-0.0018 ± 0.0061	mainshopper
-0.0020 ± 0.0027	socializedwork
-0.0035 ± 0.0045	restaurant
-0.0127 ± 0.0123	household

Table G3: Feature Importance for willingness to pay for meat substitutes (DV1c). Green means high importance, red means low importance of predictor.

Weight	Feature
0.1801 ± 0.0859	gov_intervention
0.0522 ± 0.0478	experience
0.0193 ± 0.0479	esc
0.0172 ± 0.0115	Group_Control
0.0116 ± 0.0252	able
0.0053 ± 0.0116	Group_Social_Norms
0.0042 ± 0.0039	available
0.0041 ± 0.0056	socializedwork
0.0031 ± 0.0109	education
0.0025 ± 0.0029	Group_Information
0.0018 ± 0.0053	restaurant
0.0007 ± 0.0016	diet
-0.0002 ± 0.0022	outlet
-0.0009 ± 0.0060	household
-0.0011 ± 0.0066	socializedfam
-0.0018 ± 0.0179	age
-0.0020 ± 0.0060	socializedfriend
-0.0022 ± 0.0048	gender
-0.0026 ± 0.0219	neophobia
-0.0053 ± 0.0090	cooking
-0.0057 ± 0.0117	region
-0.0066 ± 0.0180	political_spectrum
-0.0082 ± 0.0121	mainshopper
-0.0090 ± 0.0156	shoplist

Table G4: Feature Importance for support of meat reduction policies (DV2a). Green means high importance, red means low importance of predictor.

Weight	Feature
0.0996 ± 0.0722	experience
0.0783 ± 0.0507	gov_intervention
0.0403 ± 0.0434	neophobia
0.0321 ± 0.0243	age
0.0117 ± 0.0382	esc
0.0046 ± 0.0079	region
0.0042 ± 0.0177	household
0.0040 ± 0.0041	Group_Information
0.0039 ± 0.0038	outlet
0.0024 ± 0.0126	education
0.0018 ± 0.0106	socializedwork
0.0017 ± 0.0046	Group_Control
0.0013 ± 0.0048	gender
0.0009 ± 0.0041	cooking
0.0002 ± 0.0017	diet
0.0001 ± 0.0046	available
-0.0004 ± 0.0053	Group_Social_Norms
-0.0006 ± 0.0118	able
-0.0014 ± 0.0137	shoplist
-0.0027 ± 0.0069	socializedfam
-0.0027 ± 0.0065	socializedfriend
-0.0039 ± 0.0099	restaurant
-0.0071 ± 0.0312	political_spectrum
-0.0122 ± 0.0105	mainshopper

Table G5: Feature Importance for policy support of meat tax. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1328 ± 0.0636	gov_intervention
0.0403 ± 0.0499	experience
0.0335 ± 0.0372	age
0.0143 ± 0.0377	esc
0.0111 ± 0.0307	restaurant
0.0097 ± 0.0090	Group_Control
0.0079 ± 0.0087	available
0.0075 ± 0.0076	education
0.0068 ± 0.0091	outlet
0.0043 ± 0.0130	shoplist
0.0033 ± 0.0032	Group_Information
0.0027 ± 0.0196	political_spectrum
0.0010 ± 0.0039	diet
0.0006 ± 0.0037	gender
-0.0001 ± 0.0050	Group_Social_Norms
-0.0008 ± 0.0052	socializedwork
-0.0011 ± 0.0298	neophobia
-0.0020 ± 0.0083	socializedfam
-0.0021 ± 0.0066	socializedfriend
-0.0050 ± 0.0077	region
-0.0061 ± 0.0130	cooking
-0.0069 ± 0.0322	able
-0.0072 ± 0.0105	household
-0.0136 ± 0.0118	mainshopper

Table G6: Feature Importance for policy support of two meat free days. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1572 ± 0.0686	gov_intervention
0.0568 ± 0.0399	experience
0.0091 ± 0.0333	neophobia
0.0076 ± 0.0416	esc
0.0069 ± 0.0256	education
0.0062 ± 0.0105	socializedwork
0.0061 ± 0.0118	restaurant
0.0059 ± 0.0092	outlet
0.0054 ± 0.0067	gender
0.0043 ± 0.0224	age
0.0042 ± 0.0064	available
0.0025 ± 0.0036	Group_Social_Norms
0.0020 ± 0.0043	socializedfam
0.0016 ± 0.0036	diet
0.0011 ± 0.0080	Group_Control
0.0010 ± 0.0035	Group_Information
0.0006 ± 0.0089	socializedfriend
-0.0007 ± 0.0090	household
-0.0018 ± 0.0052	cooking
-0.0044 ± 0.0110	able
-0.0056 ± 0.0150	region
-0.0058 ± 0.0127	shoplist
-0.0063 ± 0.0080	mainshopper
-0.0120 ± 0.0230	political_spectrum

Table G7: Feature Importance for policy support of elimination of all meat subsidies. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1906 ± 0.1000	gov_intervention
0.1127 ± 0.0866	experience
0.0109 ± 0.0172	political_spectrum
0.0081 ± 0.0317	age
0.0066 ± 0.0063	diet
0.0064 ± 0.0246	neophobia
0.0063 ± 0.0068	household
0.0051 ± 0.0063	available
0.0034 ± 0.0056	Group_Control
0.0018 ± 0.0025	Group_Information
0.0017 ± 0.0052	socializedwork
0.0016 ± 0.0128	education
0.0014 ± 0.0043	socializedfriend
0.0004 ± 0.0036	outlet
-0.0002 ± 0.0249	esc
-0.0002 ± 0.0084	gender
-0.0004 ± 0.0046	Group_Social_Norms
-0.0024 ± 0.0186	restaurant
-0.0040 ± 0.0104	shoplist
-0.0045 ± 0.0042	cooking
-0.0051 ± 0.0104	mainshopper
-0.0059 ± 0.0246	able
-0.0060 ± 0.0066	socializedfam
-0.0075 ± 0.0078	region

Table G8: Feature Importance for support of meat substitute support policies (DV2b). Green means high importance, red means low importance of predictor.

Weight	Feature
0.1108 ± 0.0683	gov_intervention
0.0355 ± 0.0373	experience
0.0335 ± 0.0402	esc
0.0260 ± 0.0227	restaurant
0.0178 ± 0.0223	neophobia
0.0147 ± 0.0263	able
0.0140 ± 0.0122	education
0.0084 ± 0.0159	age
0.0066 ± 0.0137	mainshopper
0.0059 ± 0.0176	political_spectrum
0.0054 ± 0.0071	Group_Control
0.0049 ± 0.0136	available
0.0025 ± 0.0034	outlet
0.0024 ± 0.0077	socializedfriend
0.0024 ± 0.0070	Group_Social_Norms
0.0012 ± 0.0035	socializedwork
0.0010 ± 0.0115	household
-0.0014 ± 0.0053	gender
-0.0017 ± 0.0067	socializedfam
-0.0021 ± 0.0031	Group_Information
-0.0030 ± 0.0070	diet
-0.0037 ± 0.0056	cooking
-0.0053 ± 0.0070	region
-0.0107 ± 0.0194	shoplist

Table G9: Feature Importance for policy support of lower taxes on meat substitutes. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1763 ± 0.0792	gov_intervention
0.0428 ± 0.0492	esc
0.0216 ± 0.0391	experience
0.0212 ± 0.0176	age
0.0195 ± 0.0284	political_spectrum
0.0150 ± 0.0124	education
0.0130 ± 0.0107	Group_Control
0.0072 ± 0.0382	able
0.0072 ± 0.0190	restaurant
0.0071 ± 0.0054	Group_Information
0.0041 ± 0.0056	socializedwork
0.0037 ± 0.0067	outlet
0.0026 ± 0.0051	socializedfam
0.0017 ± 0.0056	available
0.0007 ± 0.0123	shoplist
0.0005 ± 0.0058	Group_Social_Norms
-0.0001 ± 0.0036	gender
-0.0008 ± 0.0068	region
-0.0021 ± 0.0053	socializedfriend
-0.0026 ± 0.0041	diet
-0.0029 ± 0.0095	household
-0.0059 ± 0.0042	cooking
-0.0070 ± 0.0084	mainshopper
-0.0125 ± 0.0205	neophobia

Table G10: Feature Importance for policy support two mandatory meat substitute days in cafeterias. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1443 ± 0.0695	gov_intervention
0.0789 ± 0.0504	esc
0.0382 ± 0.0446	experience
0.0195 ± 0.0251	restaurant
0.0185 ± 0.0158	political_spectrum
0.0147 ± 0.0201	age
0.0087 ± 0.0290	able
0.0055 ± 0.0053	mainshopper
0.0046 ± 0.0044	Group_Control
0.0041 ± 0.0054	socializedfriend
0.0026 ± 0.0051	outlet
0.0023 ± 0.0100	household
0.0018 ± 0.0243	neophobia
0.0012 ± 0.0044	Group_Social_Norms
0.0009 ± 0.0065	region
0.0003 ± 0.0040	socializedwork
-0.0001 ± 0.0040	available
-0.0002 ± 0.0052	diet
-0.0004 ± 0.0064	education
-0.0020 ± 0.0050	cooking
-0.0032 ± 0.0030	Group_Information
-0.0041 ± 0.0090	socializedfam
-0.0052 ± 0.0062	gender
-0.0099 ± 0.0162	shoplist

Table-G11: Feature Importance for policy support of meat substitute subsidies. Green means high importance, red means low importance of predictor.

### Random Forest Output Tables China

Weight	Feature
0.1121 ± 0.0466	experience
0.1103 ± 0.0513	esc
0.1069 ± 0.0425	able
0.0337 ± 0.0205	age
0.0162 ± 0.0128	available
0.0102 ± 0.0088	mainshopper
0.0079 ± 0.0166	shoplist
0.0060 ± 0.0050	socializedfam
0.0057 ± 0.0064	household
0.0053 ± 0.0092	gender
0.0022 ± 0.0064	education
0.0021 ± 0.0061	Group_Control
0.0016 ± 0.0042	restaurant
0.0011 ± 0.0041	socializedfriend
0.0011 ± 0.0129	region
0.0011 ± 0.0018	diet
-0.0003 ± 0.0039	Group_Social_Norms
-0.0010 ± 0.0035	cooking
-0.0012 ± 0.0024	Group_Information
-0.0014 ± 0.0084	outlet
-0.0032 ± 0.0070	socializedwork
-0.0062 ± 0.0233	neophobia

Table G12: Feature Importance for willingness to reduce meat consumption (DV1a). Green means high importance, red means low importance of predictor.

Weight	Feature
0.1574 ± 0.0716	esc
0.0468 ± 0.0353	experience
0.0211 ± 0.0218	available
0.0176 ± 0.0187	shoplist
0.0139 ± 0.0301	able
0.0129 ± 0.0246	neophobia
0.0080 ± 0.0276	age
0.0063 ± 0.0107	Group_Control
0.0022 ± 0.0089	Group_Social_Norms
0.0016 ± 0.0059	education
0.0016 ± 0.0036	socializedfriend
0.0009 ± 0.0044	restaurant
-0.0001 ± 0.0061	socializedwork
-0.0002 ± 0.0075	gender
-0.0004 ± 0.0108	mainshopper
-0.0004 ± 0.0031	Group_Information
-0.0005 ± 0.0118	region
-0.0005 ± 0.0029	cooking
-0.0016 ± 0.0084	household
-0.0017 ± 0.0038	socializedfam
-0.0019 ± 0.0054	diet
-0.0086 ± 0.0168	outlet

Table G13: Feature Importance for willingness to eat more meat substitutes (DV1b). Green means high importance, red means low importance of predictor.

Weight	Feature
0.0841 ± 0.0457	shoplist
0.0392 ± 0.0482	esc
0.0386 ± 0.0303	age
0.0334 ± 0.0395	experience
0.0104 ± 0.0181	outlet
0.0088 ± 0.0110	restaurant
0.0076 ± 0.0132	education
0.0066 ± 0.0072	able
0.0061 ± 0.0097	Group_Social_Norms
0.0055 ± 0.0272	neophobia
0.0036 ± 0.0069	household
0.0032 ± 0.0123	region
0.0028 ± 0.0042	Group_Information
0.0016 ± 0.0044	gender
0.0003 ± 0.0086	available
0.0000 ± 0.0030	diet
-0.0008 ± 0.0054	cooking
-0.0010 ± 0.0069	socializedwork
-0.0011 ± 0.0084	Group_Control
-0.0015 ± 0.0076	socializedfam
-0.0023 ± 0.0020	socializedfriend
-0.0033 ± 0.0084	mainshopper

Table G14: Feature Importance for willingness to pay for meat substitutes (DV1c). Green means high importance, red means low importance of predictor.

Weight	Feature
0.1204 ± 0.0826	esc
0.0419 ± 0.0255	able
0.0209 ± 0.0315	age
0.0140 ± 0.0110	available
0.0120 ± 0.0146	mainshopper
0.0119 ± 0.0130	region
0.0099 ± 0.0105	Group_Control
0.0098 ± 0.0116	Group_Social_Norms
0.0079 ± 0.0219	neophobia
0.0077 ± 0.0140	education
0.0067 ± 0.0196	experience
0.0050 ± 0.0299	shoplist
0.0019 ± 0.0041	cooking
0.0002 ± 0.0024	socializedfriend
-0.0002 ± 0.0025	diet
-0.0002 ± 0.0083	restaurant
-0.0002 ± 0.0031	Group_Information
-0.0004 ± 0.0034	socializedfam
-0.0005 ± 0.0095	gender
-0.0009 ± 0.0132	household
-0.0036 ± 0.0039	socializedwork
-0.0145 ± 0.0132	outlet

Table G15: Feature Importance for support of meat reduction policies (DV2a). Green means high importance, red means low importance of predictor.

Weight	Feature
0.1004 ± 0.0769	esc
0.0369 ± 0.0295	neophobia
0.0363 ± 0.0323	age
0.0292 ± 0.0304	experience
0.0119 ± 0.0301	shoplist
0.0057 ± 0.0120	socializedfam
0.0045 ± 0.0074	household
0.0044 ± 0.0096	available
0.0029 ± 0.0061	Group_Control
0.0025 ± 0.0075	cooking
0.0020 ± 0.0063	diet
0.0015 ± 0.0089	gender
0.0011 ± 0.0040	Group_Information
0.0005 ± 0.0065	socializedfriend
0.0004 ± 0.0042	restaurant
0.0002 ± 0.0109	mainshopper
-0.0009 ± 0.0165	region
-0.0014 ± 0.0137	outlet
-0.0018 ± 0.0131	education
-0.0026 ± 0.0068	socializedwork
-0.0044 ± 0.0124	Group_Social_Norms
-0.0048 ± 0.0151	able

Table G16: Feature Importance for policy support of meat tax. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1798 ± 0.1034	esc
0.0250 ± 0.0198	region
0.0241 ± 0.0487	able
0.0226 ± 0.0407	age
0.0152 ± 0.0096	education
0.0086 ± 0.0083	available
0.0059 ± 0.0337	neophobia
0.0047 ± 0.0041	restaurant
0.0037 ± 0.0173	experience
0.0018 ± 0.0052	socializedfriend
0.0012 ± 0.0055	socializedwork
0.0010 ± 0.0056	Group_Control
0.0002 ± 0.0076	Group_Social_Norms
-0.0009 ± 0.0045	diet
-0.0017 ± 0.0069	cooking
-0.0025 ± 0.0105	household
-0.0036 ± 0.0139	gender
-0.0045 ± 0.0052	socializedfam
-0.0048 ± 0.0083	mainshopper
-0.0051 ± 0.0041	Group_Information
-0.0051 ± 0.0114	outlet
-0.0072 ± 0.0193	shoplist

Table G17: Feature Importance for policy support of two meat free days. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1332 ± 0.0812	esc
0.0351 ± 0.0446	age
0.0228 ± 0.0257	neophobia
0.0195 ± 0.0224	able
0.0111 ± 0.0167	region
0.0052 ± 0.0171	outlet
0.0051 ± 0.0154	experience
0.0043 ± 0.0049	Group_Social_Norms
0.0030 ± 0.0162	socializedwork
0.0020 ± 0.0084	education
0.0020 ± 0.0040	Group_Information
0.0018 ± 0.0118	Group_Control
0.0017 ± 0.0098	household
0.0011 ± 0.0059	socializedfam
0.0010 ± 0.0056	gender
0.0004 ± 0.0107	available
0.0002 ± 0.0042	cooking
-0.0003 ± 0.0041	diet
-0.0019 ± 0.0046	restaurant
-0.0028 ± 0.0058	socializedfriend
-0.0033 ± 0.0150	shoplist
-0.0040 ± 0.0074	mainshopper

Table G18: Feature Importance for policy support of elimination of all meat subsidies. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1280 ± 0.0897	esc
0.0851 ± 0.0392	able
0.0411 ± 0.0366	neophobia
0.0293 ± 0.0197	available
0.0236 ± 0.0236	age
0.0061 ± 0.0067	gender
0.0044 ± 0.0090	mainshopper
0.0042 ± 0.0084	Group_Control
0.0037 ± 0.0172	shoplist
0.0034 ± 0.0046	socializedfriend
0.0032 ± 0.0183	experience
0.0022 ± 0.0092	education
0.0018 ± 0.0119	region
0.0002 ± 0.0048	socializedfam
0.0001 ± 0.0025	diet
-0.0003 ± 0.0042	restaurant
-0.0007 ± 0.0041	cooking
-0.0022 ± 0.0063	Group_Information
-0.0025 ± 0.0132	Group_Social_Norms
-0.0026 ± 0.0034	socializedwork
-0.0048 ± 0.0186	outlet
-0.0048 ± 0.0196	household

Table G19: Feature Importance for support of meat substitute support policies (DV2b). Green means high importance, red means low importance of predictor.

Weight	Feature
0.0642 ± 0.0613	esc
0.0618 ± 0.0506	neophobia
0.0434 ± 0.0251	able
0.0218 ± 0.0316	age
0.0102 ± 0.0065	socializedfriend
0.0097 ± 0.0176	experience
0.0048 ± 0.0087	mainshopper
0.0047 ± 0.0102	Group_Control
0.0036 ± 0.0074	restaurant
0.0027 ± 0.0039	socializedfam
0.0010 ± 0.0043	socializedwork
-0.0005 ± 0.0027	cooking
-0.0007 ± 0.0106	household
-0.0010 ± 0.0063	gender
-0.0014 ± 0.0046	Group_Information
-0.0015 ± 0.0027	Group_Social_Norms
-0.0028 ± 0.0095	available
-0.0050 ± 0.0121	outlet
-0.0056 ± 0.0132	region
-0.0088 ± 0.0147	education
-0.0095 ± 0.0042	diet
-0.0098 ± 0.0093	shoplist

Table G20: Feature Importance for policy support of lower taxes on meat substitutes. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1694 ± 0.1240	esc
0.0340 ± 0.0367	able
0.0254 ± 0.0547	age
0.0249 ± 0.0187	education
0.0180 ± 0.0382	neophobia
0.0119 ± 0.0163	experience
0.0101 ± 0.0134	gender
0.0058 ± 0.0083	available
0.0050 ± 0.0064	socializedfriend
0.0028 ± 0.0061	diet
0.0018 ± 0.0067	Group_Control
0.0007 ± 0.0044	restaurant
-0.0003 ± 0.0127	region
-0.0004 ± 0.0047	Group_Social_Norms
-0.0005 ± 0.0129	household
-0.0007 ± 0.0047	cooking
-0.0008 ± 0.0039	Group_Information
-0.0010 ± 0.0106	outlet
-0.0019 ± 0.0048	socializedfam
-0.0019 ± 0.0097	socializedwork
-0.0050 ± 0.0156	mainshopper
-0.0089 ± 0.0133	shoplist

Table G21: Feature Importance for policy support two mandatory meat substitute days in cafeterias. Green means high importance, red means low importance of predictor.

Weight	Feature
0.1879 ± 0.0949	esc
0.0749 ± 0.0625	neophobia
0.0511 ± 0.0353	able
0.0322 ± 0.0551	age
0.0153 ± 0.0138	experience
0.0092 ± 0.0075	available
0.0051 ± 0.0054	socializedfriend
0.0042 ± 0.0078	Group_Control
0.0041 ± 0.0113	shoplist
0.0032 ± 0.0055	Group_Information
0.0030 ± 0.0085	mainshopper
0.0026 ± 0.0079	restaurant
0.0021 ± 0.0029	socializedfam
0.0008 ± 0.0126	region
0.0005 ± 0.0093	outlet
0.0004 ± 0.0039	cooking
0.0003 ± 0.0041	diet
-0.0005 ± 0.0062	socializedwork
-0.0012 ± 0.0131	household
-0.0033 ± 0.0089	gender
-0.0033 ± 0.0033	Group_Social_Norms
-0.0091 ± 0.0124	education

Table G22: Feature Importance for policy support of meat substitute subsidies. Green means high importance, red means low importance of predictor.

## H. Questionnaire

In the following you can see the English version of the questionnaire that was distributed via the panel provider to the participants. The Chinese survey has been translated and coded in the exact same way, however, political ideology related questions, i.e., questions number q6 and q133 – q139 in the US questionnaire, have not been asked in the Chinese survey. Moreover, demographical questions have been adjusted to match the Chinese census data.

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### Start of Block: Welcome

q1 Welcome to our survey.

This survey is carried out for a research project by the ETH Zurich and the University of Basel in Switzerland. We are interested in better understanding your opinions concerning **food choices and product preferences**. Your participation is an important contribution to our research. It is anonymous and has no commercial or government-related purpose. Your participation is voluntary, and all your details will be treated confidentially and anonymously. There are no known risks when participating in the survey. It will take you about 20 minutes to complete this survey.

This survey addresses, among other things, questions about health issues. All sensitive data collected in this survey will be kept confidential in accordance with Kantar Profiles privacy policy. This is a sensitive topic and something that may make some people uncomfortable. If answering questions about this topic makes you uncomfortable, you may close the survey now or at any time during the survey. If you choose to participate, please select "I agree to participate in this survey" and proceed to the next page. Otherwise select "I do not want to proceed with this survey".

We appreciate your thoughts and participation, thank you!

I agree to participate in this survey. (1)

I do not want to proceed with this survey. (0)

*Skip To: End of Block If Welcome to our survey. This survey is carried out for a research project by the ETH Zurich and... = I do not want to proceed with this survey.*

Page Break

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q2 Thank you for participating.

If you feel unsure about the topic, please do not worry. There is no right or wrong answer and we encourage you to select the response that comes **closest** to your own views.

End of Block: Welcome

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### Start of Block: Screening out questions

q4 How old are you (in years)?

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*Skip To: End of Block If Condition: How old are you (in years)? Is Less Than 18. Skip To: End of Block.*

Page Break

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q6 Were you allowed to vote in this year's presidential election?

Yes, I was allowed to vote. (1)

No, I was not allowed to vote. (0)

End of Block: Screening out questions

Start of Block: Demographics

q8 What is the highest level of education you have completed?

- Some education, but no high school degree (1)
- Graduated from high school (or equivalent) (2)
- Some college or associate's degree (3)
- Bachelor's degree (4)
- Graduate or professional degree (5)

Page Break

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q10 Which of the following best describes you?

- Female (1)
- Male (0)
- Other (99) \_\_\_\_\_
- I prefer not to say (98)

End of Block: Demographics

---

Start of Block: Diet

q12 How would you describe your diet?

- I eat meat and fish. (5)
- I eat meat, but I do not eat fish. (4)
- I eat fish, but I do not eat meat. (3)
- I am vegetarian, I do not eat meat or fish. (2)
- I am vegan, I do not eat any animal products. (1)

Page Break

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**Display This Question:**

*If How would you describe your diet? = I eat meat and fish.*

*Or How would you describe your diet? = I eat meat, but I do not eat fish.*



q14 **How often** do you eat meat? Choose the option that describes your eating habits best.

- Several times per day (7)
- Every day (6)
- Several times a week (5)
- About once a week (4)
- Several times a month (3)
- About once a month (2)
- Rarely (1)

Page Break

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*Display This Question:*

*If How would you describe your diet? = I eat meat and fish.*

*Or How would you describe your diet? = I eat fish, but I do not eat meat.*

q16 **How often** do you eat fish? Choose the option that describes your eating habits best.

- Several times per day (7)
- Every day (6)
- Several times a week (5)
- About once a week (4)
- Several times a month (3)
- About once a month (2)
- Rarely (1)

Page Break

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q160 We are interested in your food consumption habits.  
Whilst grocery shopping, how important are the following to you?



	Extremely unimportant (1)	Unimportant (2)	Somewhat unimportant (3)	Neither important nor unimportant (4)	Somewhat important (5)	Important (6)	Extremely important (7)
Taste (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Freshness (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health and nutritional impact (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fair trade (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Animal welfare (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food safety (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Locally produced (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organically certified (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate impact (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental impact (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seasonally produced (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Convenience  
(13)

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Page Break

End of Block: Diet

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Start of Block: Substitute consumption

q18 *Within the last year*, how frequently have you eaten **plant-based meat substitute products** (see definition below)?

Plant-based meat substitutes are foods that try to replicate the texture, flavor, and/or nutritional value of meat, often sold as vegetarian burgers, minced meat, sausages, or chicken nuggets. Plant-based meat substitutes are usually made of ingredients such as peas, wheat, vegetable oils, mushrooms and other plants.

- Every day (6)
- Several times a week (5)
- About once a week (4)
- Several times a month (3)
- About once a month (2)
- Rarely (1)
- Never (0)

---

Page Break

*Display This Question:*

*If Within the last year, how frequently have you eaten plant-based meat substitute products (see def... != Never*

q20 *Within the last year*, where did you eat plant-based meat substitute products? **Select all that apply.**

- At home cooked by myself (1)
- At home cooked by someone else (2)
- In a restaurant (3)
- At a friends home (4)
- Other (99) \_\_\_\_\_

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Page Break

q22 Do you know any *people in your closer environment* that have **experiences with plant-based meat substitutes**, i.e., that have eaten them and/or cooked with them?

	None (0)	Some of them (1)	All of them (2)	I don't know (999)
Family members (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coworkers (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

q24 Please indicate how much you agree or disagree with the following statements:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I am constantly sampling new and different foods. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not trust new foods. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like foods from different countries. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ethnic food looks too weird to eat. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At dinner parties, I will try a new food. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am afraid to eat things I have never had before. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to try new ethnic restaurants. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Substitute consumption

Start of Block: Perceived Ability and Availability

q26 Can you think of a **meal you can cook** that includes a plant-based meat substitute of your choice?

- Yes, for sure. (4)
- Most likely, I might have to look up a recipe. (3)
- Maybe, I am not sure. (2)
- Rather unlikely, it seems quite effortful. (1)
- No, for sure not. (0)

Page Break

q28 Where do you **mostly** buy your food?

- In the supermarket. (1)
  - At a local convenience store. (2)
  - I mostly eat out in a restaurant or get take-away food. (3)
  - I buy my food online. (4)
  - I go to a farmers market. (5)
  - Other (99) \_\_\_\_\_
- 

q29 Could you buy **plant-based meat substitutes** there?

- Yes, for sure. (2)
- I am not sure. (1)
- No, I do not think so. (0)

End of Block: Perceived Ability and Availability

---

Start of Block: Household Information and Shopping Behavior

q31 How many people are living in your household? (including yourself)

\_\_\_\_\_

Page Break

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q33 Are you the person that is *mainly* buying the groceries for your household?

- Yes, I always buy the groceries myself. (4)
- Yes, I mostly buy the groceries myself. (3)
- I sometimes buy the groceries myself, it depends. (2)
- I rarely buy the groceries myself. (1)
- No, I never buy the groceries myself. (0)

Page Break

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Display This Question:

If Are you the person that is mainly buying the groceries for your household? != No, I never buy the groceries myself.

Q35 When you go food shopping, are you using a **grocery list**?

- Yes, I always use a grocery list. (4)
- I mostly use a grocery list. (3)
- I sometimes use a grocery list. (2)
- I rarely use a grocery list. (1)
- I never use a grocery list. (0)

End of Block: Household Information and Shopping Behavior

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Start of Block: Treatment 1 – Control group

q37 In the next section, you will read some information about plant-based meat substitutes. **Please carefully read the text to understand the information provided.** After reading the text, you will be asked to answer a short question about it. You will not be able to retrieve the text while answering the question.

Page Break

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q39

## Plant-based meat substitutes

**Plant-based meat substitutes** are foods that try to replicate the texture, flavor, and/or nutritional value of meat, often sold as vegetarian burgers, minced meat, sausages, or chicken nuggets. Plant-based meat substitutes (as shown in the picture) are usually made of ingredients such as peas, wheat, vegetable oils, mushrooms and other plants.



Page Break

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q41 What **ingredients** that are typically used for plant-based meat substitutes were mentioned in the text? **Select all that apply.**

- eggs (0)
- peas (1)
- wheat (1)
- vegetable oils (1)
- milk proteins (0)

–End of Block: Treatment 1 - Control group

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Start of Block: Treatment 2 – Analytical

q43 In the next section, you will read some information about plant-based meat substitutes. **Please carefully read the text to understand the information provided.** After reading the text, you will be asked to answer short questions about it. You will not be able to retrieve the text while answering the questions.

Page Break

q45

## Plant-based meat substitutes




**Plant-based meat substitutes** are foods that try to replicate the texture, flavor, and/or nutritional value of meat, often sold as vegetarian burgers, minced meat, sausages, or chicken nuggets. Plant-based meat substitutes (as shown in the picture) are usually made of ingredients such as peas, wheat, vegetable oils, mushrooms and other plants.



Page Break

q47

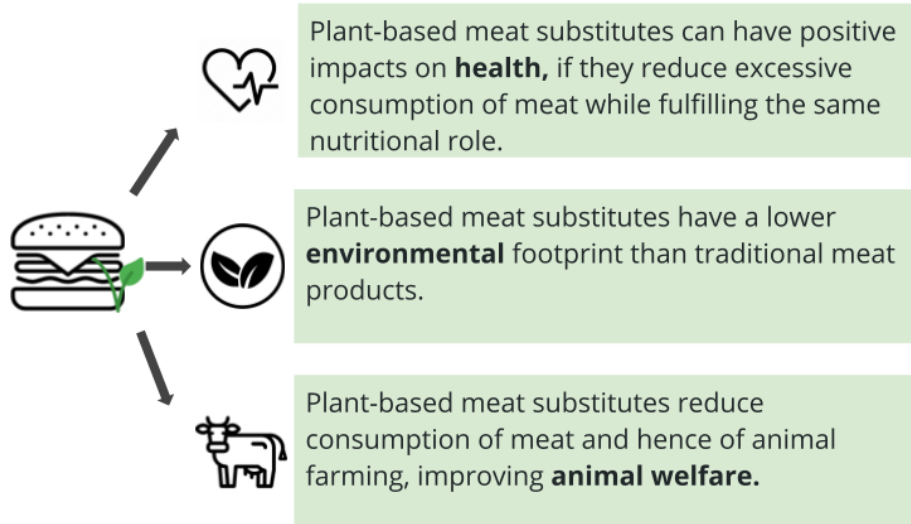
## Impacts of meat consumption

Personal health 	Environment 	Animal welfare 
<ul style="list-style-type: none"><li>• Meat can contain antibiotics, chemicals, and growth hormones used in animal farming.</li><li>• Americans eat on average around 220 pounds per person per year, largely exceeding the 33 pounds recommended according to scientific criteria.</li><li>• This contributes to major personal health problems, such as obesity, heart diseases, and cancer.</li></ul>	<ul style="list-style-type: none"><li>• Animal farming is responsible for more than 15% of all human-caused greenhouse gas emissions causing climate change.</li><li>• It causes deforestation and negatively impacts the diversity of plant and animal species.</li><li>• Large amounts of water as well as fertilizers and pesticides are used for meat production.</li></ul>	<ul style="list-style-type: none"><li>• As a result of mass production, farmed animals usually have to live in very confined spaces and are transported over long distances</li><li>• They are often treated badly on conventional farms and in slaughterhouses.</li><li>• This leads to abnormal behaviors of animals such as tail biting or cannibalism, and great anxiety and distress.</li></ul>

Page Break

q49

## Benefits of plant-based meat substitutes



Page Break

q51 Now answer the following questions as precisely as possible.

q52 What **ingredients** that are typically used for plant-based meat substitutes were mentioned in the text? **Select all that apply.**

- eggs (0)
- peas (1)
- wheat (1)
- vegetable oils (1)
- milk proteins (0)

q53 What **benefits of plant-based meat substitutes** were mentioned in the text? Select all that apply.

- Health benefits (1)
- Environmental benefits (1)
- Price benefits (0)
- Animal welfare benefits (1)

–End of Block: Treatment 2 - Analytical

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S–art of Block: Treatment 3 - Social Norms

q55 In the next section, you will read some information about plant-based meat substitutes. **Please carefully read the text to understand the information provided.** After reading the text, you will be asked to answer short questions about it. You will not be able to retrieve the text while answering the questions.

Page Break

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q57

## Plant-based meat substitutes

**Plant-based meat substitutes** are foods that try to replicate the texture, flavor, and/or nutritional value of meat, often sold as vegetarian burgers, minced meat, sausages, or chicken nuggets. Plant-based meat substitutes (as shown in the picture) are usually made of ingredients such as peas, wheat, vegetable oils, mushrooms and other plants.






Page Break

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q59

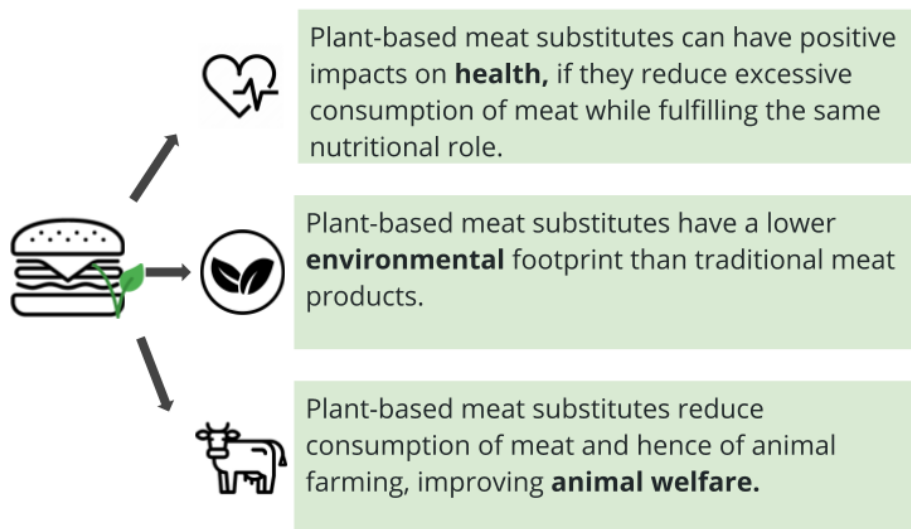
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Page Break

q61

## Benefits of plant-based meat substitutes



Page Break

q63

## Vast majority supports meat substitutes



The **vast majority of Americans**, as well as many **celebrities** from music, film, and sports are already starting to reduce their meat consumption, for example by **eating plant-based meat substitutes**.



In addition, the **official dietary guidelines** recommend reducing meat consumption and moving towards more plant-based diets.

Page Break

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q65 Now answer the following questions as precisely as possible.

---

q66 What **ingredients** that are typically used for plant-based meat substitutes were mentioned in the text? **Select all that apply.**

eggs (0)

peas (1)

wheat (1)

vegetable oils (1)

milk proteins (0)

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q67 What **benefits of plant-based meat substitutes** were mentioned in the text? Select all that apply.

- Health benefits (1)
- Environmental benefits (1)
- Price benefits (0)
- Animal welfare benefits (1)

---

q68 According to the information you just read, to what extent are **celebrities and the vast majority of the US population** supporting or opposing the **dietary guidelines to move towards more plant-based diets**?

- This was not mentioned in the text. (0)
- They just continue to consume meat as usual. (0)
- They are starting to move towards more plant-based diets, for example by eating more plant-based meat substitutes. (1)

–End of Block: Treatment 3 - Social Norms

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Start of Block: DV: Intention to buy/consume

q72 How likely or unlikely is it that you increase your consumption of **plant-based meat substitutes** in the next two weeks?

- Extremely unlikely (1)
- Unlikely (2)
- Somewhat unlikely (3)
- Neither likely nor unlikely (4)
- Somewhat likely (5)
- Likely (6)
- Extremely likely (7)

Page Break

Display This Question:

If How would you describe your diet? = I eat meat and fish.

Or How would you describe your diet? = I eat meat, but I do not eat fish.

q74 How likely or unlikely is it that you **reduce your meat consumption** within the next two weeks?

- Extremely unlikely (1)
- Unlikely (2)
- Somewhat unlikely (3)
- Neither likely nor unlikely (4)
- Somewhat likely (5)
- Likely (6)
- Extremely likely (7)

Page Break

q76 Now think about the average price of a pound of meat in the US that currently is 4.80 Dollar. What is the **maximum price**, compared to the average price of a pound of meat, that you would pay for a pound of plant-based meat substitute?



End of Block: DV: Intention to buy/consume

Start of Block: DV: food policy support



q78 Would you support or oppose government policies to reduce the consumption of meat products in the US?

- Strongly oppose (1)
  - Oppose (2)
  - Somewhat oppose (3)
  - Neither support nor oppose (4)
  - Somewhat support (5)
  - Support (6)
  - Strongly support (7)
- 

q79 Would you support or oppose **government policies to increase the consumption of plant-based meat substitutes** in the US?

- Strongly oppose (1)
- Oppose (2)
- Somewhat oppose (3)
- Neither support nor oppose (4)
- Somewhat support (5)
- Support (6)
- Strongly support (7)

Page Break

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q81 Would you *support or oppose* the following **government policies to reduce meat consumption** in the US?

	Strongly oppose (1)	Oppose (2)	Somewhat oppose (3)	Neither support nor oppose (4)	Somewhat support (5)	Support (6)	Strongly support (7)
Taxes on meat products increasing the price of meat (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Two mandatory meat-free days per week in public cafeterias (like in universities, hospitals, government agencies) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Elimination of financial support (subsidies) for meat producers (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

q83 Would you *support or oppose* the following **government policies to incentivize the consumption of plant-based meat substitutes** in the US?

	Strongly oppose (1)	Oppose (2)	Somewhat oppose (3)	Neither support nor oppose (4)	Somewhat support (5)	Support (6)	Strongly support (7)
Lower taxes on plant-based meat substitutes decreasing their price (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Two mandatory days per week in which public cafeterias (e.g. in universities, hospitals, government agencies) serve plant-based meat substitutes (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Introduction of financial support (subsidies) for plant-based meat substitute producers (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: DV: food policy support

Start of Block: DV: public endorsement intentions

q85 Please indicate in which of the following situations you intend or not intend to offer plant-based meat substitutes to your guests:

	No, for sure not. (1)	No, most likely not. (2)	Rather not. (3)	I am not sure. (4)	Rather yes. (5)	Yes, most likely. (6)	Yes, for sure. (7)
You are cooking at home for your friends. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You are cooking for your family on a holiday. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You are cooking for your family on a weekday. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You are hosting a party. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You are organizing a business meal. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You are cooking for vegetarians. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: DV: public endorsement intentions

Start of Block: Manipulation Check

q87 In the following section, we are interested in your perceptions of both the consumption of plant-based meat substitutes and meat products.

Display This Question:

If Group = 2

q88 Before answering, please recall the previous information about the benefits of plant-based meat substitutes concerning health, environmental and animal welfare aspects.

Display This Question:

If Group = 3

q89 Before answering, please recall the previous information about the vast majority of Americans and celebrities that are starting to move towards more plant-based diets, for example by eating plant-based meat substitutes.

Page Break

q91 List the first few words that pop up in your mind when you focus on how you feel about **meat consumption**:

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q92 List the first few words that pop up in your mind when you focus on how you feel about **reducing meat consumption**:

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q93 List the first few words that pop up in your mind when you focus on how you feel about **plant-based meat substitutes**:

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Page Break

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q95 In the following section, we are interested in **comparing your attitudes on meat products and plant-based meat substitutes**

Page Break

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q97 Please indicate on the following scale, which attributes describe **meat products** best in your opinion:

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)	10 (10)	11 (11)	
Festive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ordinary
Traditional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Modern
Simple to prepare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Effortful to prepare
Healthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unhealthy
Environmentally friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Environmentally unfriendly
Masculine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Feminine
Cheap	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expensive
Disgusting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tasty
Rich in protein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Low in protein
Artificial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Natural
Filling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not filling

q98 Please indicate on the following scale, which attributes describe **plant-based meat substitute products** best in your opinion:

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)	10 (10)	11 (11)	
Festive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ordinary
Traditional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Modern
Simple to prepare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Effortful to prepare
Healthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unhealthy
Environmentally friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Environmentally unfriendly
Masculin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Feminine
Cheap	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expensive
Disgusting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tasty
Rich in protein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Low in protein
Artificial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Natural
Filling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not filling

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q100 How *problematic or unproblematic* do you think the following **impacts of meat consumption** are?

	Very unproblematic (1)	Unproblematic (2)	Somewhat unproblematic (3)	Neither problematic nor unproblematic (4)	Somewhat problematic (5)	Problematic (6)	Very problematic (7)
Health impacts (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental impacts (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Animal welfare impacts (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

q101 How *beneficial or unbeneficial* do you think the following **benefits of plant-based meat substitutes** are?

	Very unbeneficial (1)	Unbeneficial (2)	Somewhat unbeneficial (3)	Neither beneficial nor unbeneficial (4)	Somewhat beneficial (5)	Beneficial (6)	Very beneficial (7)
Health benefits (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental benefits (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Animal welfare benefits (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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q103 Please think again about the **information you previously read about plant-based meat substitutes**. Do you think this information is *credible* or *not credible*?

- Completely uncredible (1)
- Uncredible (2)
- Somewhat uncredible (3)
- Neither credible nor uncredible (4)
- Somewhat credible (5)
- Credible (6)
- Completely credible (7)

End of Block: Manipulation Check

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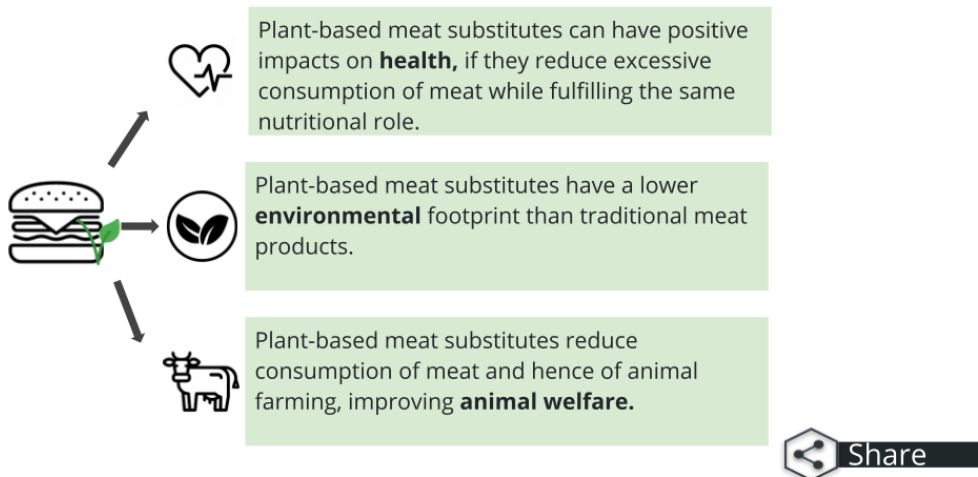
Start of Block: DV continued: Intentions to Share

q105 If you want to **share the following information about plant-based meat substitutes** via email or on your social media account(s) **now**, please select "Share". By clicking on the share button, you will not lose your survey answers.

- Share (1)
- Skip (0)

q106

## Benefits of plant-based meat substitutes



Page Break

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Display This Question:

If If you want to share the following information about plant-based meat substitutes via email or on... = Share

q108 Thank you for attempting to share the previous information sheet. However, by previously selecting “Share”, **you did not actually share the information**. This task was designed by our research team as part of a scientific experiment to learn more about what type of information is likely to be shared online.

Page Break

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Display This Question:

If If you want to share the following information about plant-based meat substitutes via email or on... = Skip

q110 Why did you decide **not to share the information flyer** via email or on your social media account(s)? **Select all that apply**.

- I do not think the information is true. (1)
- I do not like the design of the flyer. (2)
- I generally do not share much via email or on social media accounts. (3)
- I do not have email or social media accounts. (4)
- I was afraid to lose my previous survey answers. (5)
- Other (99) \_\_\_\_\_

End of Block: DV continued: Intentions to Share

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Start of Block: Political Ideology

q131 You have almost reached the end of the survey. We would like to ask you some more general questions about your personal background and your political views.

**Please keep in mind:** The survey is completely anonymous and we cannot link your responses to you. There is no right or wrong answer and we encourage you to select the response that comes **closest** to your own views.

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q133 Some people think the government is trying to do too many things that should be left to the individuals and businesses. Others think that the government should do more to solve our country's problems.

How would you place your own views on a scale from “government is doing too much” (1) to “government should do more” (7)?

- Government is doing too much (1) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Government should do more (7) (7)

Page Break

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q135 In political matters, people talk of “left” and right”. How would you place your own views on a scale from left (1) to right (10)?

- Left (1) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- 9 (9)
- Right (10) (10)

Page Break

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q137 Do you usually think of yourself as a Democrat, a Republican, an Independent, or something else?

- Democrat (1)
- Republican (2)
- Independent (3)
- Something else (Please specify) (99) \_\_\_\_\_
- Not close to any party (4)

Page Break

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q139 In this year's presidential election, I voted for...

- Donald Trump (1)
- Joe Biden (2)
- Someone else (3)
- I did not vote (4)

End of Block: Political Ideology

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Start of Block: Demographics 2

q141 Which of these categories describes your net household income last year?

- \$ 27,999 or less (1)
- \$ 28,000 - \$ 53,499 (2)
- \$ 53,500 - \$ 86,499 (3)
- \$ 86,500 - \$ 142,499 (4)
- \$ 142,500 - \$ 269,999 (5)
- \$ 270,000 or more (6)

Page Break

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q143 Please enter your zip code.

\_\_\_\_\_

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q144 What type of community do you live in?

- I live in a large city (4)
  - I live in a suburb near a large city (3)
  - I live in a small city or town (2)
  - I live in a rural area (1)
- 

q145 What region in the US do you live in?

- Northeast (1)
- Midwest (2)
- South (3)
- West (4)

End of Block: Demographics 2

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