Food waste salience and task knowledge to reduce individual food waste: a field experiment in a restaurant setting

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Abstract

Food waste related to individual consumption creates high economic, social and environmental costs. This study explores two informational strategies for reducing food waste among restaurant guests. We test a two-stage intervention to achieve a customer food waste reduction. First, we introduce a food waste-related message emphasizing the salience of food waste as an issue and highlighting the restaurant's commitment to reducing food waste, inviting guests to join its efforts before they select their meals. The second intervention additionally informs guests with details about the portion size of each meal and encourages reflection on their current hunger levels. We find that salience about the issue of food waste alone leads to a 16 percentage point reduction in the probability of reporting food waste compared to the control group. The second intervention, which provides additional task knowledge on better matching individual hunger with ordered portion size, shows no difference from the control. We further explore pathways on how salience reduces the probability of reporting food waste and show that the effective intervention had no negative effects on customer satisfaction.

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1. Introduction

Around 75 percent of food waste in the hospitality industry is avoidable, showing immense potential for prevention as combating food waste more generally can address several problems (Oliveira et al., 2016). Food waste is associated with various environmental issues, such as climate change, biodiversity loss, and soil degradation (FAO, 2015; Thyberg & Tonjes, 2016), while also threatening global food security (Godfray et al., 2010). Furthermore, the large proportion of food waste significantly contributes to the costs in the hospitality industry (Filimonau & De Coteau, 2019; Neaves et al., 2022). The persistence of food waste remains a significant challenge, even with the widespread incentives employed to reduce it. Hence, it appears clear that addressing this issue requires a better understanding of why people create food waste and testing which practically feasible interventions can effectively decrease food waste. Based on the evaluation of different interventions, the hospitality sector can implement effective tools to improve its economic outcomes and environmental impact. Additionally, the insights can play a crucial role in informing policies that support broader waste reduction efforts.

One domain of application for combating food waste is plate food waste reduction of guests in restaurants and canteens. In survey-based research, guests indicated the main reasons for having plate leftovers in a canteen setting are a too-large portion size, lack of hunger, and ingredients that they do not like (Betz et al., 2015). Although consumers produce food waste, they have negative associations with throwing food away (Abeliotis et al., 2014; Graham-Rowe et al., 2014), signifying a negative attitude of consumers towards food waste. Such negative attitudes, combined with the self-reported reasons for producing food waste in these settings, suggest that the choices leading up to food waste are not well described as informed or might be impaired by the presence of behavioral barriers.

Food choices in restaurant settings occur in a particular context. For instance, work lunches might take place under time pressure, while people at a private dinner might choose their food with more time but with a rather hedonistic mindset. These are all situations in which people are unlikely to have their concerns about food waste readily in mind. Exploratory research in a buffet restaurant indicates that a positive attitude towards avoiding waste may be transformed into real food waste reduction with brief informational appeals to reduce food waste (Schäufele-Elbers et al., 2024). Hence, reminding people or making them aware of the food waste problem before ordering their food might help them reduce food waste. Indeed, even if people are well-intended to avoid food waste when selecting their food, further barriers might often prevent them from avoiding leftovers. As people frequently report large portions and a lack of hunger as important reasons for food waste, they might struggle to match the portion size of their order with their appetite. To overcome these barriers, additional task knowledge regarding the portion size of dishes might be a promising way to help restaurant guests

make more informed food choices and reduce their plate waste.

We are not the first to test interventions based on these determinants. However, previous research on the impact of food waste salience campaigns in canteen and restaurant settings has yielded mixed results. In Swiss university canteens, prompts asking people to leave no food and information about the impact of food waste improved visitors' positive beliefs and personal norms regarding plate waste avoidance, but it did not significantly reduce plate waste (Visschers et al., 2020). In a university cafeteria in the United Arab Emirates, information about the extent of greenhouse gas emissions of food waste did not lead to a reduction in food waste, whereas an emotional appeal significantly reduced food waste (Nisa et al., 2021). In contrast, information about the negative impacts of food waste in landfills significantly reduced solid food waste among university students in a dining setting (Qi & Roe, 2017). These studies suggest that while informational interventions making people aware of the food waste problem can enhance attitudes and norms regarding food waste avoidance, their direct impact on reducing food waste may be limited unless combined with other persuasive elements.

In contrast, providing knowledge on how to reduce food waste has shown more consistent effects on food waste reduction. In a university canteen setting, enhancing the salience of food waste alongside offering smaller servings led to a 20 percent reduction in plate waste (Visschers et al., 2020). Within a US College, presenting a narrow menu that made smaller portions more accessible significantly reduced food waste (Liu et al., 2022). All options were equally available on both menus, but they differed in how easily and quickly customers could choose their dishes. In an all-you-can-eat buffet setting, informing guests that they could fill their plates more than once reduced food waste by 20.5 percent (Kallbekken & Sælen, 2013). In another experiment in a pizzeria, diners who were made aware of the food waste problem and guided to ask the staff for a pizza box significantly asked for more takeaway of their leftovers than in the control group (Stöckli et al., 2018). These findings indicate that highlighting practical knowledge in combination with enhancing salience or as a standalone intervention can effectively reduce food waste across various restaurant and canteen settings. As shown by the systematic meta-analysis by Lohmann et al., 2024, interventions to reduce food waste generally can have a range of different effect sizes, averaging from small to medium. Among the array of experiments, choice architecture interventions that target decision information, such as framing, often prove to be as effective, if not more, than providing explicit incentives.

Despite the variety of studies on food waste reduction through information provision that makes the food waste problem more salient or guides consumers, significant research gaps remain. Existing studies predominantly focus on institutional settings such as school cafeterias (Martins et al., 2016; Sharma et al., 2019), university canteens (Nisa et al., 2021; Visschers et al., 2020, and household environments (Roe et al., 2022; Soma et al., 2020). The choice situation in these settings differs from the dynamics and characteristics of *à la carte* restaurant environments, where diners usually have greater autonomy and selection

in their food choices and portion sizes. In *à la carte* settings, customers typically select from a wide range of menu options. They can customize their meals, leading to an individualized dining experience, but can rarely adjust portion sizes. This variability presents unique challenges and opportunities for food waste reduction that are not prevalent in more standardized environments like cafeterias or canteen settings. Understanding how interventions work in this more hedonistic and individualistic context is crucial for developing effective strategies across different dining experiences. Due to the mixed results about salience measures, further research is needed on this type of intervention. Making people aware of the food waste problem in an *à la carte* restaurant setting might not be sufficient to reduce food waste since guests potentially need practical guidance on reducing food waste. Thus, combining salience interventions with practical task knowledge might be a fruitful approach.

This study addresses the impact of informational interventions on self-reported food waste reduction in a real-world *à la carte* restaurant setting. The experiment took place in a public restaurant in Copenhagen and explored two key research questions: (1) Does increasing the salience of the food waste problem reduce diners' food waste? (2) Does increasing the salience of the food waste problem and providing task knowledge reduce diners' food waste? The field experiment ran for nine weeks, contrasting a control group, a *salience* intervention emphasizing the problem of food waste, and a *task knowledge* intervention providing guidance on relative portion sizes. We communicated the interventions using informational materials placed on dining tables. The primary outcome measures included self-reported food waste and the average meal size customers ordered.

The results show that making restaurant guests aware of the food waste issue significantly reduced the proportion of guests stating they left food on their plates by 16 percentage points compared to the control group. However, adding the task knowledge treatment, which included guidance on portion sizes, did not significantly reduce reported food waste compared to the control group and the salience condition.

The study makes three significant contributions to the literature on food waste reduction and behavioral interventions in dining contexts. First, conducting a field experiment in a real, *à la carte* restaurant in Copenhagen provides insights into the effectiveness of behavioral interventions in an understudied setting. Second, the study tests two informational strategies to reduce reported food waste: raising salience about the issue and raising salience in combination with providing task knowledge on the relative portion sizes. By investigating the effectiveness of these interventions, the study sheds light on the role of different communication approaches that may affect food waste in *à la carte* restaurants. Third, the study generates valuable insights for policy recommendations. Policies could focus on increasing food waste salience campaigns at the restaurant, city, or national level. Further, by providing clear, accessible information on portion sizes, restaurants may help diners make more informed choices.

2. Material & Methods

2.1 Field setting

The study is set in a public restaurant owned by the municipality of Copenhagen. We chose this restaurant because its management supported our interest in reducing food waste and had already started internally collecting its guests' daily food waste before the experiment without any communication about it with their guests. The restaurant has an *à la carte* setting where guests choose from a menu card and order at the cashier. The food is served at the table. The restaurant has around 20 indoor tables, most arranged for two or four people to sit together. The restaurant has local and international guests. The experimental setting allows for the observation of participants' actual behavior, as they are unaware that they are part of an experiment.

2.2 Treatments

The field experiment consisted of two informational treatment groups and a control group.[1] This first treatment (T1) aimed at making the problem of food waste more salient to guests and underlined the importance of their food choices for reducing food waste. Specifically, the salience intervention targeted two aspects: (1) a lack of awareness about the problem of food waste in general and (2) not thinking about food waste in the context of a restaurant. The intervention was framed as an effort by the restaurant to reduce food waste, and we used the following phrasing: "We are committed to reducing food waste - You can help!" It further noted that: "About one-third of all food produced for human consumption is wasted every year. As our beloved guest, you too can make a difference and avoid leftovers." (see Figure 1)

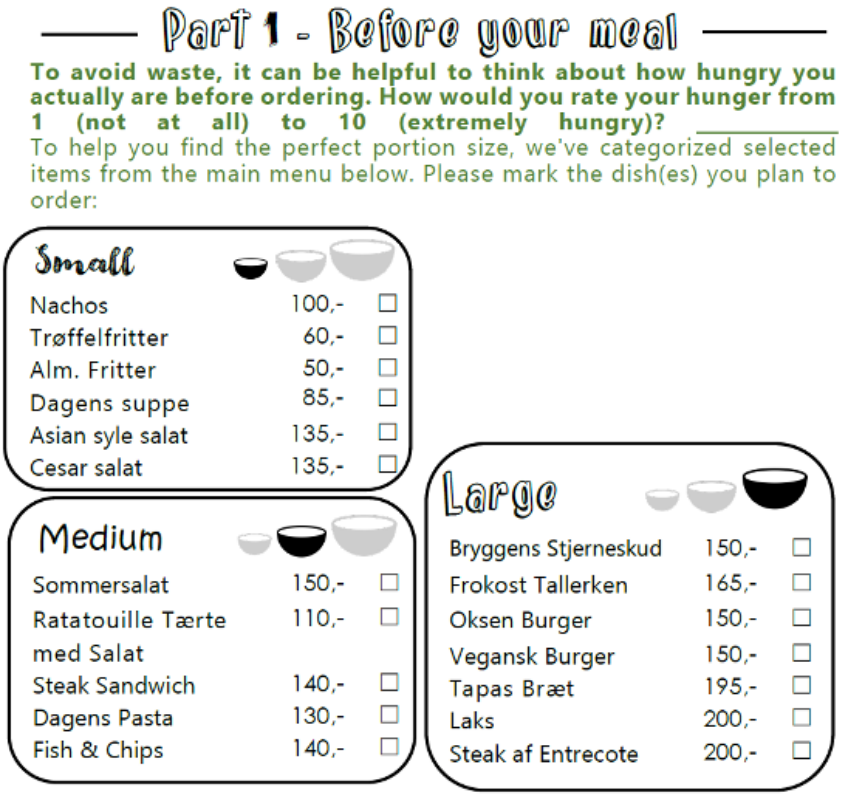
Figure 1: Survey Header of Both Treatments.

As in the salience treatment, the second task-knowledge intervention (T2) also highlighted the problem of food waste and its importance. In addition, it also targeted the lack of guidance on how to relate the issue of food waste to the necessary individual actions (i.e., the choice of portion sizes) and what might cause ordering too large portions (i.e., ignoring one's actual hunger level). We made suggestions on how to tackle the problem

[1]This study followed open science standards. We pre-registered the study on the OSF platform: https://osf.io/9rgze. The Ethics Council at Copenhagen Business School approved the study.

of food waste and provided guidance on the dishes' portion size by categorizing all dishes of the restaurant into three categories: small, medium, and large (see Figure 2).[2] The categorization of the dishes followed the sentence, "To help you find the perfect portion size, we've categorized selected items from the main menu below." Furthermore, we attempted to make participants reflect on their level of hunger: "To avoid waste, it can be helpful to think about how hungry you actually are before ordering."

Figure 2: Survey Section on Task Knowledge for T2.



2.3 Implementation

The field experiment took place over nine consecutive weeks from 02.10.2023 to 03.12.2023.[3] [4] The randomization into treatment was conducted at the week level rather than the individual level: each week, a different treatment was implemented, and customers visiting the restaurant within that week were exposed to the designated treatment. The exper-

[2]The categorization into the different size categories was carried out together with the manager of the restaurant.

[3]The initial plan was to conduct the experiment for only six consecutive weeks on weekdays. Due to issues reaching the pre-registered sample size, we extended the experiment to the weekends after the first three weeks and prolonged for three weeks after six weeks in mutual agreement with the restaurant. We made this decision before accessing the data beyond sample size information. Similarly, due to the limited sample size of the second treatment, the pre-registered analysis of the self-reported hunger level was disregarded.

[4]The restaurant provides a menu card that changes depending on the time of the day. We chose the main menu card for our interventions. This menu card remains unchanged on weekdays from 11:30 a.m. to 9 p.m. and between 1 p.m. to 9 p.m. on the weekend. The experimental materials were only provided to guests during these hours.

iment started with the control group, followed by the salience and the task knowledge treatments. After three weeks, the interventions were introduced again in the same order. The experimental design includes the distribution of table tents and surveys at the restaurant's tables. The surveys and the table tents were printed on both sides, Danish on one side and English on the other. We placed the table tent in the middle of each table to communicate the informational treatments to the guests (see above) and prompt them to fill in the survey. A description of the survey content is provided in Appendix A.1. The surveys were placed in the cutlery holders and designed to resemble commonly used customer satisfaction surveys. Their header repeated the table tents' treatment-specific core text to ensure participants connected both materials and re-iterated the treatment information (see Appendix Figure A1). For the control group, food waste was not mentioned explicitly, so we framed table tents and surveys exclusively as customer satisfaction surveys. In all groups, both the table tent and the surveys mention a free coffee voucher redeemable at the counter by presenting the answered survey. The free coffee vouchers served as an incentive to get people to participate in the study. As a further incentive to participate in the study, we offered a lottery of 1,000 DKK, which corresponds to about $140.[5]

2.4 Variables

The main outcome variable of this study is the self-reported measure of food waste; we use the terms plate waste and leftovers interchangeably. *Self-reported leftovers* is a binary variable indicating participants' survey response to the question: "Did you leave any leftovers at the end of your meal?" (1=yes, 0=no). We also obtained a measure of food waste from a scale linked to a dedicated bin in the kitchen, corresponding to the daily weighted food waste in kilograms (kg) collected by staff from all customers, including those who did not complete the survey. Portion size is analyzed both as a categorical measure, *Size Categorical*, describing the three sizes together, and as three separate dummy variables, *Small Dish*, *Medium Dish* and *Large Dish*, indicating a specific portion size (i.e., small vs. non-small; medium vs. non-medium; large vs. non-large). Finally, *Dish Sum* is an additional dependent variable corresponding to the number of dishes ordered. Beyond treatment assignment as the main explanatory variable, our analyses also include additional measures, mostly from the customer survey, which we explain in more detail in Appendix A.1. The main control variables in our estimations are a binary indicator of whether participants identified as *Female* and a continuous measure of their *Age*.

[5]The lottery option was added for the later six out of nine weeks of data collection as a further incentive. Participation in the lottery was voluntary. Guests who wanted to participate in this lottery could leave their email addresses on the survey.

2.5 Hypotheses & Model Specification

We test the following four hypotheses that were developed prior to data collection and pre-registered on the OSF platform:

H1: Increasing the salience of the food waste problem (T1) will reduce individual food waste.

H2: Increasing the salience of the food waste problem and providing task knowledge (T2) will reduce individual food waste.

H3: Increasing the salience of the food waste problem and providing task knowledge (T2) will reduce individual food waste more than just increasing the salience of the food waste problem (T1).

H4: Increasing the salience of the food waste problem and providing task knowledge (T2) will reduce the average meal size ordered compared to Control and T1.

Hypotheses 1-3 are tested using both a linear and logit regression (for robustness) to study the main effect of the two treatments on the likelihood of self-reported food waste. The main analysis, Model 1 and 2 presented in Table 3, can be formalized in the following regression equation 1:

$$Y_i = \beta_0 + \beta_1 T_{1,i} + \beta_2 T_{2,i} + \beta_3 \text{Age}_i + \beta_4 \text{Gender}_i + \sum_d \gamma_d D_{d,i} + \varepsilon_i \tag{1}$$

The dependent variable Y_i is the primary outcome of interest (self-reported food waste); β_0 captures the intercept; $T_{1,i}$ and $T_{2,i}$ are the indicators for the treatment change weekly; Age_i and $Gender_i$ are our individual-level controls and $D_{d,i}$ are day-of-the-week fixed effects. We cluster the standard errors at the day level. We re-estimate our results on the aggregate level for the measured daily food waste quantity using linear regression and aggregating all individual data on the day level.

Hypothesis 4 is similarly tested using portion size-specific logit models, where the dependent variable Y_i corresponds to a dummy indicating a specific portion size (i.e., small, medium, large), displayed in Models 1 to 3 of Table 4, and an ordered logit model for the categorical variable *Dish size* for Model 4 of Table 4. *Dish Sum* is the dependent variable in Model 5 of Table 4 and corresponds to the number of dishes ordered. While this variable was not part of our pre-registered analyses, we include this measure of the quantity of food as participants might be more likely to forgo an additional order than deviate from their preferred main dish to avoid food waste: a potential issue of our variable portion size, which measures choices between different dishes that also differ in size rather than choices of different portion sizes of the same dish.

2.6 Descriptive Statistics

The following sections describe the experimental sample and distributions of our main outcome variables.

2.6.1 Sample characteristics

The target group of the experiment was adult guests planning to eat in the restaurant. A total of 321 restaurant guests participated in the study. For the main analyses, we followed the pre-registered protocol and excluded participants who made the survey unreadable and therefore invalid (n=21) as well as participants who filled the survey for their children (n=2) or who did not indicate whether they have left food waste (n=13) leading to a sample of 285 participants. In this sample, 62% of participants are female, and the average age is 49 years. Table 1 describes and compares the socio-demographic variables between the three experimental groups.

Table 1: Sample Demographics and Standardized Mean Differences across Treatments.

	Control (N=131)	Treatment 1 (N=104)	Treatment 2 (N=50)	All (N=285)	P-value	C vs.T1 SMD	C vs.T2 SMD
Age	47.37	53.82	46.04	49.51	0.013	-0.36	0.07
Female	0.61	0.68	0.54	0.62	0.244	-0.14	0.14
DietRestrictions	0.10	0.06	0.08	0.08	0.509	0.15	0.07
SatisfactionOffer	4.07	4.14	4.04	4.09	0.743	-0.09	0.03
SatisfactionTaste	4.12	4.19	4.06	4.14	0.631	-0.08	0.07
SatisfactionPortions	3.60	3.52	3.54	3.56	0.659	0.12	0.08

Notes: Age is a continuous variable; female is a binary variable (1=female, 0=male); dietary restriction is a binary variable derived from an open-text question (= 1 if any restriction is mentioned, =0 if no restriction is indicated or left unanswered); participants' satisfaction with the food offer was measured on a 5-point Likert scale ranging from 1 ("very unsatisfied") to 5 ("very satisfied"); participants' satisfaction with the food taste was measured on a 5-point Likert scale from 1 ("poor") to 5 ("excellent"); participants rated the portion size of their food from 1 ("very small") to 5 ("very large"). The differences between the groups were tested using linear regressions for continuous variables and Pearson χ^2 tests for binary variables.

With the exception of age, we find no differences between the groups. In addition to the p-values, Table 1 reports the standardized mean differences (SMD) for each variable between the control group and the two treatments to provide a clearer view of any potential imbalances across treatments, in line with Deaton & Cartwright, 2018. The SMD values support that most differences across groups are small and suggest a reasonable balance between the control and treatment groups. Age also shows the most notable imbalance in the SMDs, specifically between the control and the T1 group. In line with our pre-registration, we control for age in our regression models.

2.6.2 Descriptive Outcomes

In the full sample, the proportion of self-reported food waste is 0.35. Part of the analysis is also based on the portion size ordered, which includes different dishes of different portion sizes (not to be confused with the same dish in different portion sizes). Table 2 summarizes the outcome variables of the hypotheses tested, along with their proportion (or median if

the variable is categorical), minimum, and maximum values. A reference to the model in which they are employed, and the related hypothesis is also included.

Table 2: Descriptive Statistics of Outcome Variables.

Outcome Variable	Proportion/Median	Min	Max	Model	Hypothesis
Self-reported Leftovers	0.35	0	1	(1) & (2) in Table 3	H1, H2, H3
Small Dish	0.27	0	1	(1) in Table 4	H4
Medium Dish	0.24	0	1	(2) in Table 4	H4
Large Dish	0.46	0	1	(3) in Table 4	H4
Size Categorical	3.00	1	3	(4) in Table 4	H4
Dish Sum*	1.09	1	4	(5) in Table 4	H4

Notes: **Dish Sum* as an outcome variable for H4 was not pre-registered.

3. Results

In the first section, we cover the first three pre-registered hypotheses addressing the main effects of the two experimental treatments, contrasting participants' self-reported food waste. Table 3 shows these results. Our fourth pre-registered hypothesis concerns the effects of our treatments on the portion size of ordered dishes, and the results are presented in the second section. Table 4 summarizes these results. The third section includes pre-registered and additional robustness checks. The final section expands our analysis by presenting exploratory findings.

3.1 Intervention Effects on Reported Food Waste

In the absence of our two interventions, 41% of the guests in the control group reported leaving food waste behind. Our first hypothesis postulates that by increasing the salience on the issue of food waste, individuals would waste less food on their plates compared to those not exposed to such information. Our findings support a comparably large effect. Based on our pre-registered model specification, the proportion of people who reported leaving leftovers decreased by 16 percentage points (seen in Table 3 column 1 and Figure 3 for a graphical representation).

In the task knowledge intervention, we hypothesize that by increasing the salience of the food waste problem and providing task knowledge, individuals would reduce their self-reported plate waste compared to those who are not exposed to such information. Our findings do not support the second hypothesis: the estimated overall difference is only 3 percentage points and not statistically significant (Table 3 column 1).

In our third hypothesis, we predict that increasing the salience of the food waste problem and providing task knowledge (T2) will reduce self-reported food waste more than just increasing the salience of the food waste problem (T1). The statistical comparison

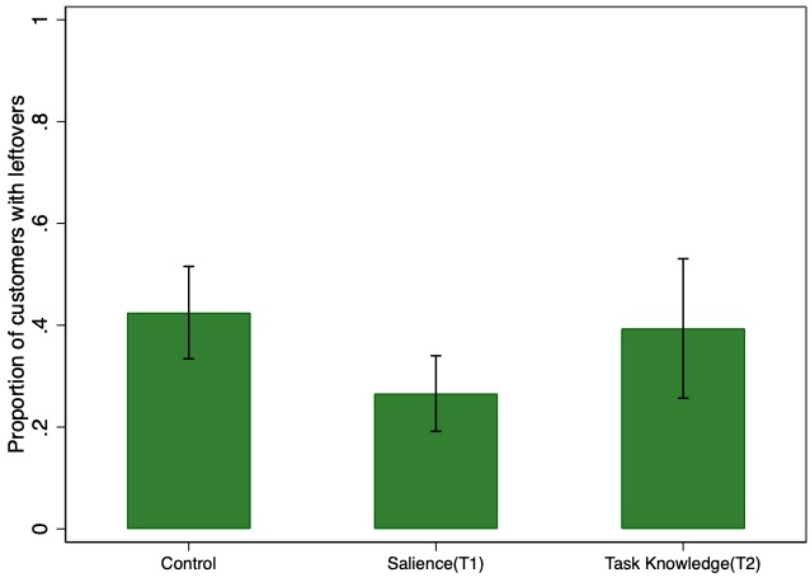
between the two groups shows that the estimated difference of 13 percentage points goes in the opposite direction and is not statistically significant (see in Table 3 column 2).

Table 3: Main Regression Results of Experimental Intervention Treatments on Self-reported Food Waste.

	(1) b(se)	(2) b(se)
Control		0.16*
		(0.059)
Salience(T1)	-0.16*	
	(0.059)	
Task Knowledge(T2)	-0.03	0.13
	(0.081)	(0.078)
Female	0.16**	0.16**
	(0.051)	(0.051)
Age	-0.00	-0.00
	(0.002)	(0.002)
Day Fixed Effect	Yes	Yes
N	269	269
adj. R^2	0.05	0.05

Notes: The dependent variable is the binary variable of self-reported food waste. OLS regression models are employed in the table. A replication using logit models provides similar results. Estimates without controls are available in Appendix Table B1. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Figure 3: Proportion of Self-reported Food Waste by Treatment.



Notes: Figure shows marginal effects based on the model presented in Table 3. The outcome is the estimated proportion of self-reported food waste plotted by treatment group. Error bars indicate 95% CIs.

Finally, we also explored aggregate daily food waste data collected from the restaurant facility. The dataset comprises 52 daily measures, as some data points were missing. The aggregate food waste measure has a mean of 6.62, a standard deviation of 2.84, and a range of 2.7 to 15. Results presented in Appendix Table B2 show several specifications, including the pre-registered replication of our main model but also exploratory models, including weekly sales. None of the models show significant differences between the treatment groups. The interpretation of these results has several caveats. The analyses are based on a small number of observations, which measure food waste from the entire restaurant customer base, not just the experimental sample. Similarly, the data based on the daily survey responses are themselves aggregations over a small number of participants.

3.2 Intervention Effects on Portion Size

As for our fourth hypothesis, we change the dependent variable: we predict that increasing the salience of the food waste problem and providing task knowledge (T2) will reduce the average meal size ordered compared to the control group and T1. Given the discrete, categorical nature of the portion size variable, we run multiple analyses. The pre-registered approach employs a *logit* model on portion-size-specific differences (large vs. non-large, medium vs. non-medium, small vs. non-small) followed by an *ordered logit* model (small=1, medium=2, large =3). For this approach, we restrict the sample to participants who only chose one dish, which includes 86.82% of our overall sample. We additionally estimate a linear regression on the sum of dishes ordered by all individuals.

The results show that none of the pre-registered models regarding the selected portion sizes indicate significant differences for the treatment groups. Table 4 columns 1-3 show the estimates for the specific portion sizes. The salience treatment leads to a negative but insignificant decrease in the probability of opting for small or medium portion sizes, while a positive but insignificant effect emerges for large portion sizes. On the other hand, the task knowledge treatment triggers mixed effects for small, medium, and large sizes, respectively; all are statistically insignificant. For those people who only ordered one dish, we also find no evidence that their selected portion size was affected by either of the two interventions when using an ordered model (see Table 4 column 4).

Some people, however, ordered more than one dish. The estimated average number of selected dishes was significantly lower in the salience treatment. For every eight guests, about one dish less was ordered. The task knowledge treatment showed a similar effect size that was, however, less precisely estimated and is not statistically significant (see Table 4 column 5).

We replicate the analysis to contrast T2 and T1 in Appendix Table B3 and we do not find any significant result.

Table 4: Main Regression Results of Experimental Intervention Treatments on Portion Sizes.

	(1) Small b(se)	(2) Medium b(se)	(3) Large b(se)	(4) Dish Size b(se)	(5) Dish Sum b(se)
Salience(T1)	-0.14	-0.13	0.20	0.26	-0.12*
	(0.374)	(0.458)	(0.415)	(0.347)	(0.046)
Task Knowledge(T2)	-0.04	0.08	-0.04	0.09	-0.11
	(0.572)	(0.458)	(0.524)	(0.506)	(0.084)
Female	0.67*	0.99*	-1.28***	-1.10***	-0.05
	(0.334)	(0.443)	(0.347)	(0.330)	(0.070)
Age	-0.00	0.00	0.00	0.00	-0.00
	(0.011)	(0.010)	(0.007)	(0.008)	(0.002)
Day Fixed Effect	Yes	Yes	Yes	Yes	Yes
N	232	232	232	232	269

Notes: Logit regression models are employed in the table columns 1-3, an ordered logit regression model is employed in column 4. The OLS model in column 5 on the number of dishes was not pre-registered. Robustness replications without controls are in the Appendix Table B4. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

3.3 Robustness & Sensitivity Analysis

3.3.1 Pre-registered Robustness Checks

We test the robustness of the main regression analysis using a logit model to replicate our findings. The results show that the direction and significance level remain unaffected by the choice of statistical model, as evident in Appendix Table B5 columns 1-2.

An additional robustness check concerns participants who visited the restaurant more than once. Potential spill-over effects might bias the estimates if an individual measured in the control group had prior exposure to the treatment. To assess this issue, we asked participants whether they had completed a similar survey before. Of the 285 respondents, 17 guests reported that they had done so or did not remember, with only eleven reporting to have done so in a different week, and 3 did not answer. Excluding these participants from the main analyses does not affect the results. We report the replication of Model 1 in Appendix Table B5 column 7.

To assess the robustness of our results with respect to participants' attention to information prior to ordering, we test whether the treatment effect for people positively responding to the question "Did you tick your dish(es) before ordering?", were statistically different from those who did not (Appendix Table B5 column 6). The rationale behind the test is to check whether the lack of attention is a possible explanation for T2 not being effective. We find no evidence of a significant effect of such an attention question on the impact of the treatment on reported food waste.

3.3.2 Temporal Sensitivity

Practical limitations with the restaurant required us to randomize the treatments by weeks rather than days. Such temporal clustering increases the risk that idiosyncratic shocks to the outcome affect the results. We re-run the main analysis based on three splits to assess whether any specific week drove our main finding (Appendix Table B5 columns 3-5). The first three of the nine experimental weeks: the salience treatment replicates the overall effect on the leftovers as in the main regression (β = -0.221; p = 0.012) and the task knowledge treatment results in a negative, despite non-significant, impact in leftover (β = -0.079; p = 0.540). Second, by focusing on the second round of three experimental weeks, which alternate the three treatments, the same picture emerges as in the main analysis of the salience treatment, which leads to a negative and significant decrease in the probability of leaving plate leftovers behind (β = -0.264; p = 0.000), while the task knowledge treatment triggers a positive effect, although not significant (β = 0.143; p = 0.222). Finally, no significant outcome is recorded for the last three weeks of the experiment, which also counts with the lowest number of observations.

3.3.3 Selective Non-response

Table 1 shows a noticeable imbalance in the number of participants per treatment group, with fewer people in T1 and T2 compared to the control group. Such non-responses in our survey might threaten the validity of our findings if they depend on the outcome or the treatment. To address this issue, we employ Inverse Probability Weighting (IPW), which adjusts the sample composition based on observable characteristics such as gender, age, and diet restrictions. The method involves assigning weights inversely proportional to the likelihood of being observed in the treatment group, thereby balancing the groups to mitigate bias from selective responses. Appendix Table B6 & Appendix Table B7 show that the main results, presented in Table 3, replicate.

To investigate why the sample sizes differ between the treatment groups, we look at the restaurant's aggregate sales data, which provides a weekly overview of sales from all customers, not only the experimental sample. The restaurant sold 1803 dishes in the control weeks, 1855 while T1 was implemented, and 1407 while T2 was in place. This evidence, along with the fact that week 42 was a public school holiday, helps explain the observed differences in sample sizes between T2 and the other experimental groups.

3.3.4 Social Desirability and Demand Effects

Based on self-reported behavior, social desirability bias may affect our survey data. Such bias could affect the estimated treatment effects if participants in the treatment groups systematically underreport food waste. While there is no formal test, we offer two indicative analyses using the available data. First, previous studies suggest that women are more prone to social desirability bias and experimenter demand effects (e.g., de Quidt

et al., 2018; Hebert et al., 1995; Paunonen, 2016; Tang et al., 2022). We test this prediction and estimate gender-specific CATE, as larger treatment effects for women would support the concern that social desirability bias exacerbates our main results. Appendix Table B8 presents treatment effect estimates for men and women using self-reported food waste and the probability of ordering a large dish (similar to Table 4) as the outcome. We consider the latter a more objective and less biased behavioral measure. Both models suggest that the treatments are slightly more effective for men than women, with differences primarily significant at the 10% level. Alternative explanations for gender differences could involve variations in environmental attitudes and responsiveness to interventions using social pressure. There is, however, little evidence in the literature that would support the notion that women are less likely to respond to our intervention, which could overshadow the gender-specific differences linked to social desirability(e.g., Weinschenk et al., 2018). While certainly inconclusive, it would be surprising to see men showing greater treatment effects if prior studies are correct that women are more prone to social desirability, potentially driving our results.

Second, while social desirability concerns the participants' self-image, the experience of pressure to comply with a social norm depends on whether participants feel observed in their reporting or behavior. Hence, anonymity has been advocated as an important condition to reduce social desirability bias and experimenter demand effects (e.g., Haaland et al., 2023; List & Price, 2016). Participants could fill in the survey at their own table in privacy. Whether their survey was completely anonymous depended for most participants on their own decision to participate in the $140 lottery. Hence, participants who reported food waste should feel more reluctant to share personal information, or people interested in sharing their email to win the lottery should be more inclined to underreport food waste. Both dynamics suggest that people sharing their information should be less likely to self-report leaving food waste. While we never linked participants' emails to their responses in our data set, we can test whether participants willing to provide personal information (yes/no) were less likely to report food waste and whether this relationship differed between the treatment groups (Appendix Table B9). Results show that participants in the treatment group are not less likely to provide personal information; the interaction with the treatment indicators shows an insignificantly different but relatively higher probability to report food waste in T1 vs. the control, thereby halving the effect size and rendering it no longer statistically significant. As the lottery was only introduced in week 4 of the experiment, we can also exploit exogenous variability in whether participants were offered to share their information. Results are very similar to those using the information about the actual sharing. An empirical pattern that is also inconsistent with social desirability driving the observed main effects. Beyond these supportive but inconclusive empirical insights, we further elaborate on the potential issues associated with the self-reported nature of our data in the discussion section.

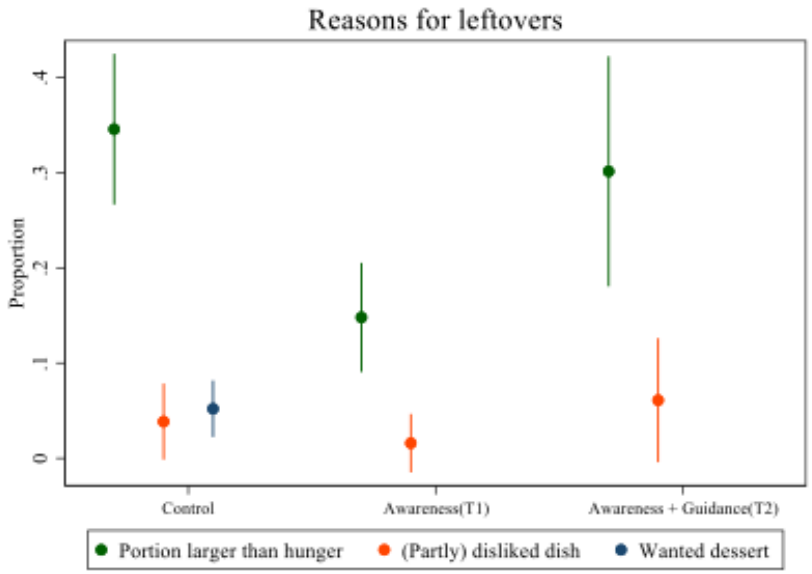
3.4 Exploratory Findings

This section presents additional insights from our experiment that we did not pre-register. First, we examine why participants reported leaving plate waste and how these reasons varied across treatment groups. Focusing on the most effective treatment (T1), we provide deeper insight into the mechanisms driving the main effect. Second, our experiment took place in a single restaurant. To assess the external validity of our findings, we analyze additional data from the control group, linking self-reported plate waste to subjective experiences of taste, menu variety, and portion size. This diagnostic perspective helps determine why people leave food waste to begin with, providing information about the necessary conditions to replicate our findings successfully. Finally, we test whether our interventions negatively impact the dining experience and overall customer satisfaction. This analysis addresses potential concerns that, while our intervention reduces food waste, it may do so at the cost of customer experience, leading to unintended consequences that could hinder future adoption.

3.4.1 Self-reported reasons for plate waste

The salience treatment (T1) did not suggest a specific way to reduce food waste, so it is unclear from our main analysis how it worked. However, as participants indicated a reason for creating leftovers, we can explore whether making the issue of food waste salient through our treatment reduced waste created for some reasons more than others. The investigation of the self-reported causes for leftovers shows that overall, people reported that the portion size was too large, they were not hungry enough, they (partially) disliked the food, and they wanted a dessert. No participant reported another available option concerning time restrictions. When contrasting these reasons between treatment groups, we observe that people in the salience treatment (T1), were significantly less likely to report leaving food waste because of too large portions or insufficient hunger. Only guests in the control group reported a desire for dessert as a reason for plate waste; hence, we could not calculate a contrast. The proportion in the control group is, however, significantly different from zero. "Dislike of food" was a reason in all treatment groups but was not affected by any of the two interventions. The estimates are plotted in Figure 4, where we pooled the reasons for "large portion size" and "lack of hunger" as they jointly refer to the mismatch between what people ordered and what they could consume. Therefore, the salience treatment seemingly only addresses reasons for leftovers associated with the quantity but not food quality.

Figure 4: Reasons for Leftovers.



Notes: Figure shows the estimated proportion of reasons for reported food waste plotted by treatment group. Reasons for eventual leftovers were categorized as "Not hungry enough", which was plotted together with "Portion larger than expected", "No time", "Disliked the dish" which was merged with "Disliked part of the dish" and "Want dessert". Error bars indicate 95% CIs.

3.4.2 Location-specific experiences and plate waste

The reason why people leave food waste on their plates likely differs between restaurants and dining concepts. For instance, a "running sushi" restaurant is unlikely to face issues of too large portions, which might be pivotal for other *à la carte* restaurants. Hence, it is important to understand location-specific reasons for food waste to target interventions accurately. The self-reported reasons for food waste displayed for the control group in Figure 4 suggest that a mismatch between portion sizes and hunger is the leading cause of food waste, with dislike of the taste playing a minor role. We provide an additional correlational analysis corroborating these findings. We estimate the probability of self-reported food waste based on participants' self-reported satisfaction with *taste*, the overall *offer*, and their *portion size*. We only analyzed data from the control group to avoid contamination from our intervention. The results, presented in Table B10, show that the probability of reporting leaving food waste behind is lower for people who report high satisfaction with the taste of their meal and higher for those reporting that their portion size was larger. Hence, we identify portion size and taste mismatches as key contributors to self-reported food waste. Specifically, our second intervention on task knowledge focused primarily on portion size issues; for such an intervention to work in principle, food waste must not be exclusively created by people disliking the taste of what they ordered.

3.4.3 Treatment effects on customer experience

Next, we explore how the interventions affected customers' satisfaction and perceptions of *taste*, *offer*, and *portion size perception*. We consider this a relevant analysis of potential adverse side effects of our interventions, which might deter restauranteurs from testing our food waste interventions. As shown in Table 5, we do not find evidence that our interventions affected people's self-reported satisfaction levels.

Table 5: Self-reported Measures as Dependent Variables.

	(1)	(2)	(3)
	Taste b(se)	Offer b(se)	Portion Size b(se)
Salience(T1)	0.07	0.11	-0.06
	(0.105)	(0.156)	(0.095)
Task Knowledge(T2)	-0.08	-0.10	0.01
	(0.131)	(0.197)	(0.119)
Female	0.10	0.10	0.11
	(0.098)	(0.113)	(0.076)
Age	0.01*	0.00	-0.00
	(0.003)	(0.003)	(0.003)
Constant	3.22***	3.55***	3.34***
	(0.387)	(0.462)	(0.196)
Day Fixed Effect	Yes	Yes	Yes
N	269	266	261
adj. R^2	0.06	0.01	0.01

Notes: OLS regression models are employed in the table. *Taste Satisfaction* corresponds to Likert scale response to "Did you like the taste of the food you ordered?"; *Offer Satisfaction* corresponds to Likert scale response to "Were you satisfied with the dish offer?"; *Portion Size Perception* corresponds to Likert scale response to "Did you find the portion sizes to be appropriate?". As an additional robustness check to ensure the reliability of our results, we replicate this table with an ordered regression model in Appendix B11. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

4. Discussion & Conclusion

This study aimed to address food waste in restaurant settings by examining the effectiveness of informational interventions. The research focused on two key strategies: increasing the salience of the food waste problem and providing task knowledge to diners in an *à la carte* restaurant in Copenhagen.

The field experiment contributes to the existing literature on food waste reduction in public settings, which shows mixed results in the effectiveness of information-based interventions (Lohmann et al., 2024; Nisa et al., 2021; Qi & Roe, 2017; Visschers et al., 2020), and adds to it by including to the informational approach additional guidance on portion sizes through the task knowledge intervention, which relates to a parallel stream of studies (Liu et al., 2022; Stöckli et al., 2018). Moreover, the experimental setting of

a public restaurant enables to widen the range of contexts where food waste had been previously studied, which mainly included institutional settings (Martins et al., 2016; Nisa et al., 2021; Sharma et al., 2019; Visschers et al., 2020) and household environments (Roe et al., 2022; Soma et al., 2020).

The findings revealed that 41% of guests in the control group reported leaving food waste behind. Notably, the salience treatment, which increased awareness of food waste, showed a significant reduction in the proportion of reported leftovers by 16 percentage points compared to the control group. This suggests that simply making guests aware of food waste during their meal choices can effectively reduce it. Implementing simple table tents with a message or including reminders in the menu could be a cost-effective and harmless intervention for restaurants to reduce food waste.

Interestingly, the task knowledge treatment, combining awareness with guidance about portion sizes, showed no significant reduction in reported food waste compared to the control group. Hence, our results provide no evidence that giving additional information about portion sizes or prompting hunger reflections adds value beyond raising awareness through the salience treatment. However, the noticeably smaller sample size, for which we cannot completely rule out a potential selection bias, warrants caution in interpreting these null results and calls for replication studies.

Regarding portion sizes, while we did not see any evidence that our interventions did affect the size of portions ordered, exploratory results suggest a reduction in the number of dishes. Guests who order fewer dishes, which would have otherwise become food waste, are likely making a significant impact in reducing resource waste. They may make up for their missed meal later, so the reduction in resources should only reflect the portion that would have been wasted, not the entire meal that was not ordered due to our intervention. Alternative pathways to reduce leftovers could have been for treated guests just to eat more or take the leftovers home. Such behavioral responses would not directly reduce demand in the restaurant but could affect later consumption patterns of the guests. These potential substitution patterns underscore the need for more research to fully understand restaurant interventions' mechanisms and total effects on food waste and consumption behaviors.

Our study also highlighted that reasons for leftovers in restaurants may differ between settings and customers. It is important to understand these reasons before implementing any interventions targeting food waste. In the restaurant we studied, making the issue of food waste salient before selecting meals led to a significant reduction in portion size and hunger-related food waste. It did not target food waste reduction in association with food quality and liking.

The results we discuss here should be interpreted with several limitations in mind. Notably, our main outcome variables are based on self-reported survey data. While answered immediately after finishing the meal, our measures are unlikely to suffer from recall bias, often associated with self-reported food waste data (Van Herpen et al., 2019). While

self-reported behavior has been used in several studies (e.g., see Allcott et al., 2019; Wisdom et al., 2010, concerns regarding potential social desirability bias and experimenter demand effects remain a thread. Regarding our measure of food waste, we followed recommendations to minimize bias by avoiding any negative connotation in the wording of the question, such as calling the leftovers "waste" (Cerri et al., 2019; Stantcheva, 2023). Also, our study design allowed participants to fill in their survey in privacy at their own table, reducing potential desirability bias through the presence and characteristics of personal interviewers (Haaland et al., 2023; List & Price, 2016). However, if our self-reported data is affected by people feeling socially pressured, we would expect an underreporting of food waste, though overreporting has also been observed (Vesely & Klöckner, 2020). If experienced equally among all participants, it would affect the overall self-reported likelihood of leftovers (varying between 41% and 25% between treatment groups). Recent meta-analyses, however, suggest that such bias is often small (Vesely & Klöckner, 2020).

If our experimental interventions affected social desirability or there were different demand effects (de Quidt et al., 2018), the bias would directly affect our estimated treatment effects. Even though we provide some empirical results deviating from predictions made about social desirability in past research, we can ultimately not fully rule out such measurement error. Because we encouraged guests to consider food waste when choosing their meals explicitly, bias likely lets us overestimate the treatment effect, inflating the risk of a false positive. We note that we see no treatment effect in T2, using the same saliency manipulation as T1, which would be surprising if the effect in T1 would stem from a social desirability bias or experimenter demand effects. Beyond bias in the measures of the surveys we received, social desirability could have selectively discouraged people from filling out a survey in the first place. We try to address this issue by using survey weights and adding incentives.

While we ask participants whether they engaged with the information treatment before ordering, it is worth noting that our estimates rely on an intention-to-treat analysis. There is a chance that people might have been dishonest when reporting their prior engagement or did not carefully engage with the intervention materials before ordering their meal. In this case, adjustments to the intervention's salience might further increase its effectiveness.

Additionally, our portion size outcome variables introduced certain measurement challenges as they captured simultaneous changes in portion size and dish choices. The limited effectiveness of the task knowledge treatment may be due to the fact that customers could not select their preferred dish in different sizes but had to change towards a different dish to change their portion size. Their willingness to change might have been limited by dietary restrictions or taste preferences. However, the number of dishes provides an alternative measure of the total quantity ordered and is less confounded with taste than our measure of portion size. As this analysis was an exploratory addition and not preregistered, future research could explore ways to better disentangle the precise mechanism driving the observed effects, for instance, by designing experiments where portion size and

dish selection are explicitly decoupled.

Furthermore, holidays may have affected the week-level randomization, changing the customer base. Eventually, as with all studies conducted in a single site, the restaurant's specific cultural context may limit our findings' external validity. Finally, we are not able to fully disentangle what specific framing and informational components of our salience treatment worked best, particularly regarding the wording of the intervention. This is an opportunity for future research to refine further and understand the mechanisms behind the intervention.

Overall, given the apparent ease and low cost of implementing salience-enhancing measures to reduce food waste, here measured as self-reported, we recommend that restaurants consider adopting such cost-effective and resource-efficient approaches. Indeed, the simple interventions analyzed in the paper offer a promising avenue for restaurants to simultaneously reduce their environmental impact and operational costs infamously linked to food waste. Notably, the interventions did not negatively affect customer satisfaction, indicating that restaurants can implement such measures without compromising their guests' dining experience.

Further studies should assess our findings' validity and replicability in different settings and using more objective outcome data. However, if we take the effects of the food waste salience intervention at face value, public policymakers could contribute to double dividends by mandating food waste warnings on restaurant menus as they might reduce the waste of valuable resources and prevent customers from paying for food they do not eat.

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A. Appendix Material & Methods

A.1 Survey content

The survey contains eleven questions.[6] At the beginning of the survey, all groups of the experiment were instructed to complete the first part of the survey before they ordered and to fill in the second part after eating their meal. Further, the instructions asked participants to return the filled-out survey to the cashier for a free coffee voucher. In the first part of the survey, participants were asked to tick the dish(es) on the survey they were planning to order. The dish options were provided on the survey and had to be ticked by the restaurant guests. At the beginning of the second part of the survey, we asked participants whether they had ticked the dish(es) before ordering. Not ticking the dish(es) on the survey before ordering might be an indication that participants have not gotten into contact with the intervention before ordering (even though the intervention was also on the table tents). Thus, we make a robustness check, once including and once excluding participants who have not ticked the dish(es) before ordering. Next, the participants were asked on a 5-point Likert scale ranging from 1 ("very unsatisfied") to 5 ("very satisfied") how satisfied they were with their food selection. Afterwards, participants rated the taste of the ordered food as 1 ("poor") to 5 ("excellent"). The self-reported food waste was measured with the question, "Did you leave any leftovers at the end of your meal?" with the answer options "Yes" and "No." Guests who reported leaving food waste were subsequently asked why they had leftovers. The multiple choice answer options consisted of the categories "Not hungry enough", "Portion larger than expected", "No time", "Disliked the dish", "Want dessert", and "Disliked part of the dish". The next question asked participants to rate the portion size of their food from 1 ("very small") to 5 ("very large"). The last part of the survey asked about gender, age, and dietary restrictions and which person the survey had been filled out ("yourself", "child", or "someone with special needs"). To control for subjects who had already participated in the experiment before, we asked whether they had previously completed a similar survey in the restaurant.

[6] There are twelve questions in the task knowledge treatment due to the additional question about guests' hunger level.

B. Appendix Figures

Figure A1: Survey and Table Tent placement in the field setting.

C. Appendix Tables

Table B1: Robustness Check: Treatment Regression Results without controls.

	(1) b(se)	(2) b(se)
Control		0.14*
		(0.070)
Salience(T1)	-0.14*	
	(0.070)	
Task Knowledge(T2)	-0.07	0.07
	(0.079)	(0.074)
N	285	285
adj. R^2	0.01	0.01

Notes: OLS regression models are employed in the table. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B2: Aggregate Daily Food Waste: Treatment Regression Results.

	(1) b(se)	(2) b(se)	(3) b(se)	(4) b(se)
Salience(T1)	1.12	1.12	0.76	0.77
	(0.152)	(0.157)	(0.246)	(0.244)
Task knowledge(T2)	0.99	1.06	0.53	0.36
	(0.325)	(0.490)	(0.576)	(0.779)
Weekly Sales		0.00		-0.00
		(0.930)		(0.808)
Female			-2.63+	-2.55
			(0.070)	(0.118)
Age			0.02	0.02
			(0.483)	(0.504)
Day Fixed Effect	No	No	Yes	Yes
N	52	52	41	41

Notes: OLS regression models are employed in the table. Standard errors in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B3: Replication: Regression Results of Experimental Intervention T2 vs. T1 on Portion Sizes.

	(1) Small b(se)	(2) Medium b(se)	(3) Large b(se)	(4) Dish Size b(se)	(5) Dish Sum b(se)
Task Knowledge(T2)	0.11	0.20	-0.24	-0.18	0.01
	(0.640)	(0.564)	(0.571)	(0.538)	(0.072)
Control	0.14	0.13	-0.20	-0.26	0.12*
	(0.374)	(0.458)	(0.415)	(0.347)	(0.046)
Female	0.67*	0.99*	-1.28***	-1.10***	-0.05
	(0.334)	(0.443)	(0.347)	(0.330)	(0.070)
Age	-0.00	0.00	0.00	0.00	-0.00
	(0.011)	(0.010)	(0.007)	(0.008)	(0.002)
Day Fixed Effect	Yes	Yes	Yes	Yes	Yes
N	232	232	232	232	269

Notes: Logit regression models are employed in the table columns 1-3, an OLS regression model is employed in column 4, while an ordered logit regression model is employed in column 5. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B4: Robustness Check: Regression Results on Portion Sizes without controls.

	(1) Small b(se)	(2) Medium b(se)	(3) Large b(se)	(4) Dish Size b(se)	(5) Dish Sum b(se)
Salience(T1)	-0.16	-0.00	0.12	-0.12**	0.14
	(0.454)	(0.468)	(0.401)	(0.045)	(0.369)
Task Knowledge(T2)	0.10	-0.10	-0.00	-0.09	-0.04
	(0.526)	(0.457)	(0.512)	(0.071)	(0.496)
N	246	246	246	285	246

Notes: Logit regression models are employed in the table columns 1-3, an OLS regression model is employed in column 4, while an ordered logit regression model is employed in column 5. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B5: Pre-registered Robustness & Sensitivity Regression Results.

	(1) Logit b(se)	(2) Logit b(se)	(3) First 3w b(se)	(4) Second 3w b(se)	(5) Last 3w b(se)	(6) Tick b(se)	(7) Once b(se)
main							
Control		0.75**					
		(0.276)					
Salience(T1)	-0.75**		-0.22*	-0.26***	0.07	-0.15	-0.16**
	(0.276)		(0.076)	(0.057)	(0.118)	(0.098)	(0.059)
Task Knowledge(T2)	-0.12	0.62	-0.08	0.14	0.09	-0.04	-0.04
	(0.371)	(0.379)	(0.126)	(0.112)	(0.113)	(0.130)	(0.080)
Female	0.74**	0.74**	0.12	0.19*	0.08	0.12*	0.16**
	(0.261)	(0.261)	(0.090)	(0.082)	(0.145)	(0.056)	(0.054)
Age	-0.00	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	(0.007)	(0.007)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
Tick						0.01	
						(0.113)	
Tick X T1						-0.03	
						(0.148)	
Tick X T2						-0.06	
						(0.178)	
Day Fixed Effect	Yes	Yes	No	Yes	No	Yes	Yes
N	269	269	104	108	57	209	256
adj. R^2			0.04	0.12	-0.00	0.07	0.05

+ < p 0.01, * p < 0.05, ** p < 0.01, *** p < 0.001.

Notes: Logit models are employed in columns 1-2; OLS regression models are employed in models 3-6. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B6: Sensitivity Check: Inverse Probability Weighting of Treatment Regression Results with controls.

	(1) b(se)	(2) b(se)	(3) T1 as ref. b(se)
Control		0.16*	
		(0.062)	
Salience(T1)	-0.16*		-0.16*
	(0.062)		(0.062)
Task Knowledge(T2)	-0.02	0.14	
	(0.087)	(0.086)	
Female	0.15**	0.15**	0.17**
	(0.057)	(0.057)	(0.061)
Age	-0.00	-0.00	0.00
	(0.002)	(0.002)	(0.002)
Day Fixed Effect	Yes	Yes	Yes
N	269	269	225
R^2	0.09	0.09	0.12

Notes: OLS regression models are employed in the table, logit models replicate. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B7: Sensitivity Check: Inverse Probability Weighting of Treatment Regression Results without controls.

	(1) b(se)	(2) b(se)	(3) T1 as ref. b(se)
Control		0.16*	
		(0.064)	
Salience(T1)	-0.16*		-0.16*
	(0.064)		(0.065)
Task Knowledge(T2)	-0.06	0.10	
	(0.086)	(0.087)	
N	269	269	225
R^2	0.02	0.02	0.03

Notes: OLS regression models are employed in the table, logit models replicate. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B8: Social Desirability and Gender Regression Results.

	(1) Leftovers b(se)	(2) Large dish b(se)
main		
Salience(T1)	-0.45	0.82+
	(0.288)	(0.427)
Task Knowledge(T2)	0.05	-0.43
	(0.563)	(0.788)
Male	-0.37	1.88**
	(0.252)	(0.616)
Male X T1	-1.10+	-1.84*
	(0.575)	(0.734)
Male X T2	-0.49	0.96
	(0.964)	(1.225)
Age	-0.01	0.00
	(0.007)	(0.007)
Day Fixed Effect	Yes	Yes
N	269	232

Notes: Logit regression models are employed in the table. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B9: Social Desirability and Anonymity Regression Results.

	(1) Email provided b(se)	(2) Leftovers b(se)	(3) Leftovers b(se)
Control			
Salience(T1)	-0.07	-0.20**	-0.23*
	(0.133)	(0.066)	(0.087)
Task Knowledge(T2)	0.01	-0.05	-0.08
	(0.168)	(0.088)	(0.109)
Email provided (EP)		-0.04	
		(0.099)	
Asked for Email (AE)			-0.10
			(0.085)
EP X T1		0.11	
		(0.128)	
EP X T2		0.05	
		(0.144)	
AE X T1			0.11
			(0.112)
AE X T2			0.07
			(0.145)
Female	-0.01	0.16**	0.15**
	(0.048)	(0.052)	(0.051)
Age	0.00	-0.00	-0.00
	(0.002)	(0.002)	(0.002)
Day Fixed Effect	Yes	Yes	Yes
N	269	269	269

Notes: Logit regression models are employed in the table. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B10: Self-reported Measures Regression Results.

	(1) Control b(se)
Taste Satisfaction	-0.15*
	(0.063)
Offer Satisfaction	-0.07
	(0.085)
Portion Size Perception	0.08+
	(0.044)
Female	0.12+
	(0.064)
Age	0.00
	(0.003)
Constant	1.03**
	(0.257)
Day Fixed Effect	Yes
N	121
adj. R^2	0.06

Notes: OLS regression models are employed in the table. *Taste Satisfaction* corresponds to Likert scale response to "Did you like the taste of the food you ordered?"; *Offer Satisfaction* corresponds to Likert scale response to "Were you satisfied with the dish offer?"; *Portion Size Perception* corresponds to Likert scale response to "Did you find the portion sizes to be appropriate?". Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table B11: Robustness Ordered Regression Results.

	(1) Taste b(se)	(2) Offer b(se)	(3) Portion Size b(se)
Salience(T1)	0.19	0.43	-0.13
	(0.262)	(0.369)	(0.261)
Task Knowledge(T2)	-0.21	0.01	-0.01
	(0.319)	(0.421)	(0.324)
Female	0.32	0.31	0.33
	(0.234)	(0.267)	(0.203)
Age	0.02*	0.01	-0.00
	(0.006)	(0.008)	(0.007)
level 1	-2.99**	-3.11**	-2.78***
	(1.076)	(1.035)	(0.663)
level 2	-1.57+	-1.44+	0.67
	(0.847)	(0.876)	(0.578)
level 3	0.63	0.05	2.85***
	(0.851)	(0.938)	(0.631)
level 4	2.63**	2.05*	2.90***
	(0.892)	(0.979)	(0.634)
Day Fixed Effect	Yes	Yes	Yes
N	269	266	261

Notes: Ordered logit models employed. Standard errors clustered on the day-level in parentheses; + < p 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.